

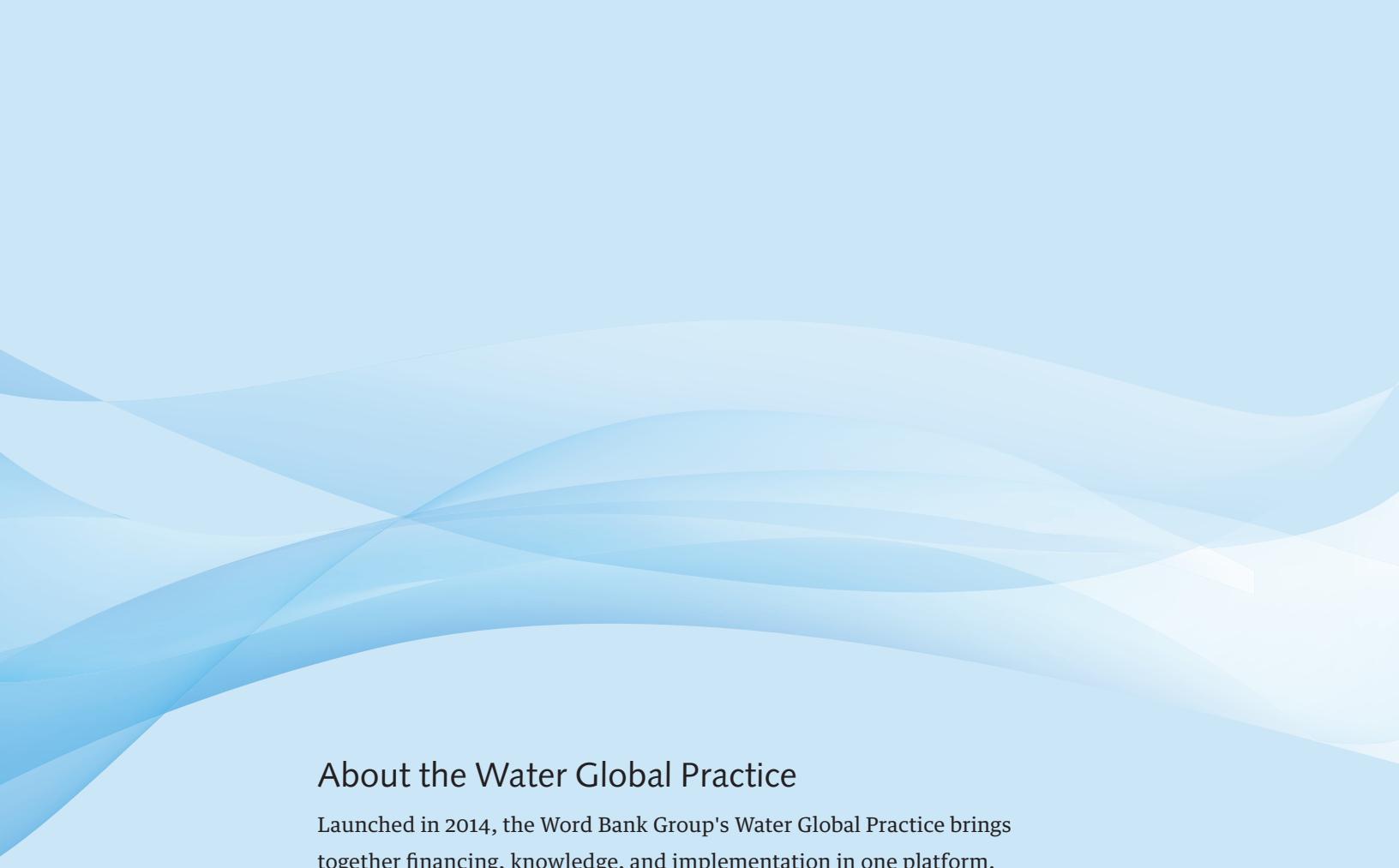
MAY 2018

# Reviewing National Sanitation to Reach Sustainable Development Goals

Jim Gibson,  
Kathy Eales,  
and Chris Nsubuga-Mugga

Uganda Sanitation Diagnostic Study Report





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Uganda Sanitation Diagnostic Study Report

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MAY 2018

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## Executive Summary

The purpose of this study is to assist the Government of Uganda (GoU) to make a comprehensive review of the state of household and institutional sanitation in rural and urban areas, and assess the barriers and drivers of improvement of sanitation in the country. The ultimate objective of the assignment is to define possible measures to reach the national objectives of meeting the Sustainable Development Goals (SDGs).

**Good sanitation matters for many reasons**, but particularly for human dignity, public health, and environmental protection, and especially water. The consequences of poor sanitation include water pollution, cholera, typhoid, stunting, lowered immunity to malaria, tuberculosis and Human Immuno-deficiency Virus (HIV) arising from worm infestations, and girls not completing their schooling because of inadequate provision for menstrual hygiene management.

To date, the government has given strong emphasis to **eradicating open defecation**, and to encouraging people to invest in safe containment systems. Grant funding, to local governments to support Community-Led Total Sanitation (CLTS) and home improvement campaigns, is spurring sanitation improvement on a significant scale. But as the pace of urbanization picks up in the country and the scale and density of urban settlements rise, local authorities and the ministries that support and service these areas will need to give greater attention to **safe management of wastes** beyond the on-site facilities of individual users.

**The SDGs shift the sanitation sector's goal posts significantly.** The sanitation targets go well beyond a measurement of how many people have access to an adequate toilet (coverage) and define outcomes in terms of safe management of human wastes across the whole service chain, from containment, through emptying and transport to treatment and final disposal or reuse, and in all settlement contexts along the rural-urban continuum. The SDGs will also require tracking of how much wastewater is treated safely. The targets set call for safe sanitation for all by 2030, giving particular attention to the needs of women and girls. This requires a more extensive focus on how best to ensure no one is left behind.

This report gives strong emphasis to **understanding the functioning of the entire sanitation service chain** in different geographic and human settlement contexts. This service chain is short with minimal interactions when there is space to contain urine and feces on-site and adequately cover and close an old pit when it is full. However, even in small rural growth centers, there are pit latrines and septic tanks that will require some form of emptying service to ensure the ongoing usefulness of the toilet. Significant pollution can arise from any one of the elements that constitute the service chain in any given system. Pollution from any of these downstream elements of the service chain will have the same, or even more adverse, consequences as simple open defecation and will result in severe pollution of the land area and water bodies.

It is only by understanding and managing the processes associated with each component in the chain, and ensuring they link and align with the preceding and subsequent components, that one can begin to **define strategic interventions to improve the performance of the system**. It is only through developing such an understanding of sanitation systems in each context that

Uganda can move towards achieving the improved sanitation outcomes it aspires to. Developing insight into the nature of these processes and related activities will, in turn, help to clarify the responsibilities, functions, and possibility for intervention by the various role-players and ministries in the sector as they strive for the realization of the objectives defined by the Sustainable Development Goals.

**Sanitation improvement in Uganda is being supported by a wide range of initiatives.** Most Ugandans live in rural settlements, and most of the sanitation improvement initiatives focus on building household demand in rural villages for sanitation and hygiene improvement through awareness and sensitization campaigns that promote good hygiene, practical home improvements, and an end to open defecation. Extensive work is being done to train district health, water, and community development staff and the volunteer village health teams working on the ground in approaches and methodologies that will drive better program impacts.

**The sector's flagship CLTS program is now being expanded** from 30 to 38 districts, with funding support from the Global Sanitation Fund and the practical assistance of a wide range of local and international nongovernmental organizations (NGOs), faith-based organizations, and other development partners. A growing number of villages are being declared open defecation free. Sanitation approaches based on mobilizing and motivating households to improve their own facilities remain Uganda's best available option for large scale change. Sanitation promotion is just as important in urban areas, but is not being addressed beyond limited NGO-led projects. Creative communications and marketing approaches should be used to drive mass-based campaigns.

**Urban settlement has accelerated rapidly** off a low base over the past two decades, and growing attention is being given to the challenges of urban sanitation. Sewered sanitation serves less than 10 percent of Kampala, and a far smaller number in 15 smaller towns where sewer networks were developed to some extent more than 40 years ago. **The urban population relies almost exclusively on on-site sanitation, mainly pit latrines.** The combination of increasingly dense settlement and extensive reliance on rented accommodation in a context of low median incomes poses significant challenges for sanitation improvement, but a growing number of NGOs and development partners are supporting town administrations to explore options, develop improvement plans, and test innovations.

Most urban sanitation initiatives are currently focused on Kampala, where the Kampala Capital City Authority (KCCA) is working with a number of partners to tackle sanitation challenges that are compounded by extensive settlements in swampy areas and flood plains. A range of initiatives aim to expand access to improved sanitation facilities, and address fecal sludge management across the service chain. **Approaches being developed in the KCCA are not necessarily replicable in smaller centers** where local government capacity is more limited, populations are poorer, and where affordability constraints mean that formal sector desludging services providers cater primarily to institutional and commercial customers. Universal inclusion requires greater attention to pro-poor approaches that may not be commercially viable. Private sector operators are motivated by a desire for profit, and they are unlikely to offer safe sanitation service in markets where there is no viable trading proposition. Additional public funding is needed to address public health and safety, and to ensure a clean living environment.

Yet, despite a wide range of activities, **very few projects move beyond the pilot phase**. New technologies are piloted, supported and, when the supporting development partner leaves, the gains are not sustained or replicated.

**Three main factors are holding back Uganda's progress** in achieving sanitation improvement:

- Low median household incomes, which constrain investment in sanitation improvement, particularly in the absence of programs designed to stimulate demand for sanitation.
- Chronic underfunding of local governments which, in turn, severely limits their ability to drive sanitation improvement campaigns, develop and operate public toilets, enforce compliance with the law, and develop facilities for safe sludge management. Local governments are the critical implementation agencies for driving sanitation improvement, but are severely under resourced.
- A shift in the government's spending priorities away from water and sanitation, as well as health and education, in favor of investment in sectors that will stimulate economic growth and the attainment of middle income country status.

These points have been made repeatedly in various studies. They remain fundamentally relevant. The current rate of progress in the sector reflects what can be achieved with this quantum of funding. The sector is currently stuck in a **low-level equilibrium**, and prospects for achieving different sanitation outcomes with the same resources are limited.

While statements are made at high level about the importance of sanitation, this importance is not reflected in budget allocations. Advancing sanitation improvement systematically and sustainably requires a **fundamental shift from reliance on externally-funded project-based approaches, to a sustained focus on sanitation by local governments**, with dedicated funding from central government to address their sanitation mandate on an ongoing basis. Without the enabling environment that this funding backbone will provide, the impacts of externally-driven sanitation projects will continue to be short-lived.

It seems there is a view in national government that sanitation does not warrant additional resourcing, that it is a personal responsibility of households, and all that is needed is promotion through CLTS. The Uganda Sanitation Fund seems to be perceived by the government to be adequate, and **there is little awareness of just how meager the available resources are and how thinly they are spread, relative to the challenge**. There is little understanding of the scope of the service chain for on-site sanitation, and the need to develop safe and affordable services for desludging and sludge treatment.

**Improving Uganda's sanitation is a matter of national strategic importance, yet the gravity of the challenge is not being communicated adequately** to Uganda's leaders and decision makers. In particular, sector reporting does not adequately communicate the urgent need for increased funding. The Golden Indicator for sanitation coverage in the Ministry of Water and Environment's sector performance report depicts all rural coverage as improved sanitation, instead of a small minority, and thereby profoundly understates the enormity of the remaining challenge. If sector reports claim that 79 percent of rural households now have improved sanitation, it appears that the remaining challenge is modest.

**Sanitation improvement needs to be addressed at a senior strategic level within the government**, in view of its wide-ranging impacts on the citizens and economy of Uganda. It is recommended that the Office of the Prime Minister (OPM), responsible for coordinating the activities of all ministries, takes an active role in giving strategic direction to the sector, working in conjunction with the National Sanitation Working Group. The aim would be to set the direction, develop strategy, and allocate resources in a way that takes account of national priorities and aspirations, beyond the operational level of the various ministries. The most important role for the OPM, in collaboration with the Ministry of Finance, Planning and Economic Development, is to ensure that the national budget provision for sanitation is increased steadily to enable each government role-player in the sector to fulfil its mandate.

**There is a clear need to make significant additional investments across the service delivery chain in all villages, towns, and cities.** Interventions need to identify and address each possible source of sanitation-relation pollution, and include promotion of responsible sanitation practices, enforcement of relevant laws, and the creation of infrastructure where needed. Each settlement has different challenges, requiring different types and combinations of interventions. The uniqueness of context, practices, and outcomes requires that prioritization occurs at a local level. Grand plans that do not take adequate account of the local context will be inefficient, or even fail.

The recommendations and action plan outline interventions that should form part of an ongoing program. The proposals are informed by representative sector costing benchmarks, but are not costed in detail. Key proposals include:

- Increased funding to local governments to enable them to fulfil their sanitation mandate.
- Expansion of the CLTS-type approaches to all districts, with ongoing follow up.
- A major investment program with ongoing funding support to improve schools' sanitation.
- Investment in sludge and wastewater treatment capacity.
- Careful consideration of targeted subsidy options to support universal access to services.
- Extensive capacity development.

The core requirement is to make provision for increased sector funding to support a wide range of essential activities. Simply doubling current allocations off their low base would be an excellent start, with a steady increase in annual funding.

## Acronyms and Abbreviations

AMICAALL	Alliance of Mayors and Municipal Leaders' Initiative for Community Action on AIDS at the Local Level
CLTS	Community-Led Total Sanitation
CPE	Cesspool Emptier
CSO	Civil Society Organization
DHI	District Health Inspector
DWSCC	District Water and Sanitation Coordination Committee
EHD	Environment Health Division (of Ministry of Health)
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoU	Government of Uganda
HIV	Human Immuno-deficiency Virus
JMP	WHO/UNICEF Joint Monitoring Programme for Water and Sanitation
KCCA	Kampala Capital City Authority
KfW	Kreditanstalt für Wiederaufbau
MDG	Millennium Development Goal
MoES	Ministry of Education and Sports
MoFPED	Ministry of Finance, Planning and Economic Development
MoH	Ministry of Health
MoLG	Ministry of Local Government
MoLHUD	Ministry of Lands, Housing and Urban Development
MoU	Memorandum of Understanding
MoWE	Ministry of Water and Environment
NEMA	National Environmental Management Authority
NGO	Nongovernmental Organization
NSWG	National Sanitation Working Group
NWSC	National Water and Sewerage Corporation
O&M	Operation and Maintenance
OD	Open Defecation
ODF	Open Defecation Free
OPM	Office of the Prime Minister
SACCOs	Saving and Credit Cooperatives
SDG	Sustainable Development Goal
SFD	Shit Flow Diagram (or a fecal waste flow diagram)
TSU	Technical Support Unit
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Fund
UPE	Universal Primary Education
USAID	United States Agency for International Development
UWASNET	Uganda Water and Sanitation NGO Network

VHT	Village Health Team
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WSDF	Water and Sanitation Development Facility

# 1. Introduction

## 1.1 Despite a wide range of activities, progress remains disappointing

A wide range of sanitation improvement activities are under way across Uganda which tackle different aspects of the country's challenges. The Ministry of Water and Environment's (MoWE) 2016 Sector Performance Review presents evidence of a wide range of positive developments:

- A steady reduction in open defecation.
- An increase in household toilet coverage.
- An increase in the proportion of households with improved toilets in both rural and urban areas.
- Artisan and entrepreneur development programs.
- Development of tools and plans for district and small town sanitation improvement.
- Development of improved monitoring systems to track trends and developments.
- A growing body of information on the state of fecal sludge management in Kampala and elsewhere.
- The strengthening of service delivery chains for fecal sludge management in small towns, such as Iganga.
- Development of sludge treatment works under way or completed in nine towns, tools and guidelines for urban sanitation improvement, and draft model by-laws.



Mbarara District has one of the most effective community-led total sanitation programs in the country. It combines the eradication of open defecation with integrated home improvement. This voluntary sanitation activist has upgraded both her toilet and her kitchen.

Yet there remains concern among sector role-players that Uganda's progress in achieving improved sanitation is inadequate, in as far as the interventions being undertaken are not 'moving the needle'. The international Joint Monitoring Programme (JMP) that tracks and reports the performance of countries against the Millennium Development Goals (MDGs), reported "little or no progress" in Uganda towards achieving the sanitation MDGs (UNICEF/WHO, 2015). Many of the current hygiene practices continue to put people at risk of exposure to disease-causing pathogens. The available evidence suggests that a high proportion of rural people have some kind of sanitation amenity, but for some households investing in improved sanitation facilities is apparently not a high priority relative to other needs and the resources they have available to them (USAID/Plan, 2009; UBOS, 2016a, 2016b, and 2016c; MoWE, 2016a).

The majority of rural households use traditional pit latrines without a slab or a cover, and it is reported that two-thirds of urban residents do not have safe, hygienic toilets which prevent the spread of diseases (UBOS, 2016a and 2016c). Over 90 percent of the population nationally relies on on-site facilities, yet when those pits or septic tank systems fill, the supporting services for emptying, transporting, and treatment are poorly developed to safeguard health and

environmental safety. Far too much sludge ends up in the environment, with a wide range of serious impacts on public health, water quality, and environmental pollution (MoWE, 2016a).

A substantial number of studies have been undertaken which map the state of sanitation practices and support programs in the country. These reports, *inter alia*, assess the roles of different stakeholders, identify the state of fecal sludge management in a growing number of urban centers, explore the state of sanitation supply chains for rural and small towns, and review the efficacy of the Urban Water and Sanitation (O&M) Grant. Common themes from these reports include:

- Slow progress in improving sanitation, particularly in rural areas and schools, with increasingly complex challenges in rapidly growing urban settlements.
- Slow and often unsustained progress in changing behavior.
- Low priority given to improving sanitation, both by households and by government agencies, beyond those directly involved in the sanitation sector.
- Inadequate public funding.
- Extensive reliance on development partners to address gaps in funding and capacity.
- Fragmented approaches, with little shared understanding of what is needed, and inadequate data to provide guidance on where the biggest performance gaps lie,
- Inadequate sectoral coordination.
- Weak adherence to the Memorandum of Understanding (MoU) which defines the roles of the three lead ministries.

This diagnostic report draws on this extensive body of knowledge to reframe the core challenges from the perspective of meeting the Sustainable Development Goals (SDGs) for sanitation. It maps what is being done to support and drive sanitation improvement across the country, identifies bottlenecks, and explores what further is needed to reflect and realize the country's aspirations spelled out in Vision 2040. It outlines the practical activities that arise from this, identifies where responsibility lies for achieving them, and maps their implications for a new approach to cross-sectoral collaboration and accountability.

## **1.2 New approaches are needed to tackle sanitation systemically**

The advent of the SDGs shifts the sanitation sector's goal posts significantly. The sanitation targets go well beyond measurement of how many people have access to an adequate toilet (coverage), and define outcomes in terms of safe management of human wastes across the whole service chain, from containment, through emptying and transport to treatment and final disposal or reuse. What the MDGs regarded as *improved* sanitation is now considered just *basic* sanitation if there is no proper management of waste beyond the toilet (WHO, 2015).

Achievement of *adequate sanitation* must now address the full service chain from containment to disposal in all settlement contexts along the rural-urban continuum.



**Figure 1: The entire service chain**

Beyond household toilet facilities, the concept of a wider chain of sanitation services shows the scope of the Sustainable Development Goals to which Uganda has committed itself. Where there is room to contain waste on-site and cover and close an old pit when it is full, the service chain beyond containment is not relevant. But even in small rural growth centers there is now growing demand for services and infrastructure to preempt open dumping of sludge. Open dumping is tantamount to open defecation on a vast scale, and frequently results in severe water pollution.

The SDGs will also require tracking of how much wastewater is treated safely. The targets set call for safe sanitation for all by 2030, giving particular attention to the needs of women and girls. This goes far beyond reducing by half the number without basic sanitation (the MDG goal), and requires a more extensive focus on how best to ensure no one is left behind.

Tackling the implications of the SDGs requires a far-reaching change in thinking that will need to go beyond an emphasis on mobilizing households to increase toilet coverage and adopt practices that enhance their health and hygiene, to a recognition of the broader systems that support (or undermine) safe management of wastes across the full service chain.

The role of households in achieving sanitation improvement remains decisive as they will remain the primary agents of change. But tackling safe management of wastes beyond containment requires far greater engagement by public authorities, primarily local governments. This will have significant implications for the quantum of funds required and the strategies to be adopted if Uganda wishes to achieve the improvements that it has signed up for. A realignment of sector activities and resources is needed to achieve the required progress against the new performance indicators Uganda will be measured against.

#### **Box 1: Uganda's high-profile commitment to meeting the SDGs**

In 2015, Uganda was one of the first countries in the world to mainstream the new Sustainable Development Goals (SDGs). Preparation of the second National Development Plan (NDP) coincided with the deliberations and adoption of Agenda 2030. The NDP framework includes key SDG indicators (Republic of Uganda, 2016).

Uganda has agreed to become a pilot country for the GEMI initiative which aims to develop enhanced monitoring systems for water, wastewater and ecosystem monitoring, to track progress towards achieving SDG targets. This elevates Uganda's profile in comparative international monitoring (MoWE, 2016b).

In July 2016, Uganda's National Planning Authority (NPA) released a comprehensive assessment of the country's readiness to implement the SDGs' 2030 Agenda. Under SDG indicator 6.2.1, 'the proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water', the NPA found that it would be able to report a total of 8 percent of people in urban areas, and 0.6 percent in rural areas, using safely managed sanitation (Republic of Uganda, 2016).

### **1.3 Key goals: A better life for all with improved sanitation and hygiene, supported by more efficient use of public resources**

More important than the information summarized against an SDG performance indicator is what better sanitation really means for the population of Uganda's national health and prosperity, and how this impacts its prospects for growth and development. It is well known

that poor sanitation entrenches the cycle of poverty and disease, slows development, entrenches slums, as well as makes cities less attractive places to work, live, and invest in.

Conversely, better sanitation practices play a big role in driving improvements in people's standards of living and quality of life, and ensuring those improvements can be sustained into the future.

This assessment has identified a number of areas of compromised effectiveness of government spending on sanitation. Underfunding can result in wasteful expenditure where funds are inadequate to achieve the stated aims, and investment in stand-alone infrastructure can be wasted where the supporting service linkages are not in place. Building sludge treatment works, is essential, for example, but it must be considered in the planning stages that sufficient sludge will not necessarily be delivered to the works unless there are enough pits requiring emptying, as well as service providers with equipment and vehicles offering emptying and transport services at prices people can afford. Given the scale of competing demands for limited public funds, it is vital to target investments strategically so as to deliver the benefits required efficiently and effectively.

## 2. Objectives of this Assignment

The objective of this assignment is to assist the Government of Uganda (GoU) to:

- Make a comprehensive review of the state of household and institutional sanitation in rural and urban areas.
- Assess the barriers and drivers of improvement of sanitation in the country.

The ultimate objective of the assignment is to define possible solutions (technical, institutional, social, legal, economic, and financial measures) required to reach the national objectives of meeting the SDGs.

The Terms of Reference call for an analysis of the current situation (coverage, quality of service, and enabling environment), to define a package of policy measures to provide safe sanitation for different segments of society, considering different options, and institutional arrangements. An indication of the financial implications of the proposed measures is required.

The study will support dialogue on sector reforms and decisions on issues such as coverage and levels of service, investment plans, and institutional reforms. It is also an opportunity to build support for sanitation reforms, and will involve relevant stakeholders in a reflection process and policy dialogue.

Key outcomes expected from the study include:

- A shared understanding of issues and opportunities by key stakeholders, particularly within the sanitation subsector.
- Costed interventions and approaches that are needed to achieve the sanitation SDGs.
- A consensus on realistic and affordable sanitation infrastructure development in both urban and rural areas.
- Improved dialogue with all relevant ministries including the Ministry of Finance, Planning and Economic Development.

This diagnostic study emphasizes recommendations for an alternative approach that will achieve more effective and sustainable outcomes, with an indication of associated costs.

### 3. Methodology

#### 3.1 Information sources

Primary information for this assessment was gathered through a combination of:

- Key informant interviews in Kampala and a wide range of urban and rural settlements.
- Key informant interviews with district chairpersons, chief and deputy chief administrative officers, town mayors, town managers, district water officers, assistant district health officers and health inspectors, district education inspectors, school principals, representatives of the National Water and Sewerage Corporation (NWSC), Technical Support Units (TSUs), Water and Sanitation Development Facilities (WSDFs), development partners and nongovernmental organizations (NGOs), and many others.



Figure 2: Major towns where research was conducted for this assessment

- Workshops with local government and sanitation sector role-players in the towns of Mbale, Lira, Wakiso and Mbarara, where the WSDFs' offices are located.

Information gathered from informants and workshop participants was triangulated against a wide range of data sources, including Census 2014, budget information, disease maps, as well as a considerable body of sector studies and secondary literature. The support and assistance of

officials from the MoWE, notably of Martha Naigaga and Trinah Kyomugisha, and their role in participating in, and setting up of, workshops and meetings is noted with appreciation. Thanks are also due to the wide range of informants and workshop participants who shared their knowledge and insights generously.

The research was conducted between September 2016 and February 2017. Preliminary findings and an interim report were presented to the National Sanitation Working Group (NSWG) on January 25, 2017. A draft of this report was presented to the NSWG on March 30, 2017, and comments were incorporated into a revised report.

Over and above the major urban centers, role-players were interviewed in the following small and medium-sized towns: Bugembe, Butema, Hoima, Iganga, Kigoryoba, Karogo, Mugusu, Rhino Camp, Ovisioni, Opit, Palenga, Ruguburi, Kisoro, Bunagana Kyanika, Katuna, and Muhanga. The major towns visited are highlighted in the map in Figure 2. Due to the limited time available and other resource constraints, the team was not able to visit all areas of the country. A notable exclusion from the team visits was the Karamoja region in the north-east of the country. The decision to not visit this area was made after careful consideration and discussion. Justification for this exclusion is that the Karamoja area presents a unique set of challenges that require detailed attention, particularly around cultural practices and the preferred nomadic lifestyle of the population that reside in that area. In recognizing this gap in the field visits, the team did familiarize itself with the outcomes of the ‘Second Karamoja Sanitation Conference’ held in November 2016.

In the Mbale, Lira, and Wakiso workshops, participants worked in small groups to assess the state of sanitation in both urban and rural settlements across the full sanitation service chain, using a tool known as the Shit Flow Diagram (SFD), or fecal waste flow diagram, to map the processes of fecal sludge handling and identify safe and unsafe management outcomes. This was done for both the rural and urban areas in each setting, with participants drawn from district water, district health and district education offices, town administrations responsible for planning and environmental health, the NWSC, and others. In Mbarara the workshop discussions focused more on institutional roles and linkages, and highlighted the importance of integrated macro planning at town, district, and catchment level. Each workshop generated rich discussions of practical challenges and possible options to overcome them. In each instance the participants commented that the utilization of the SFD to map processes and outcomes was a helpful way of reconsidering what was actually going on in each context and would therefore be useful in informing strategic decision making.

A founding premise of this work has been that while the elements constituting the sanitation systems in each location are similar, the way they interact within the local context can result in any town or settlement having unique outcomes. Local sanitation challenges and improvement options are path-dependent and therefore both the ‘upstream’ and ‘downstream’ context of each situation can influence the way the system behaves. Nonetheless, there are often recurrent patterns that repeatedly emerge.

Most settlements have the same generic components—pit toilets, septic tanks, cesspool emptiers (CPEs), and so on—but in each area these combine with other contextual factors (soil type, water table, seasonal rainfall, road infrastructure, housing types, average household

incomes, variance between daytime and nighttime population) in ways that lead to particular local and operational challenges and resource requirements. The range of inputs and responses from informants helped to identify recurring themes and the distinctiveness of local and regional trends and dynamics.

### **3.2 Challenges in fulfilling the brief**

Four key challenges are noted from the outset:

- An enormous body of strategies, assessments, evaluations, and other reports exist that document the programs, activities, challenges, and achievements in Uganda's sanitation sector. Condensing this literature into a succinct 'go to' document has not proved possible, because the sanitation sector is diverse, dynamic, and grappling with a myriad challenges at different levels. Summarizing them into a short synthesis runs the risk of compromising the value of in-depth studies, and it has not proved possible to present a comprehensive account of the wide range of activities under way in the sector. Consequently, the approach taken in this report has been to reflect on the implications of the new sanitation SDGs for the sector, and to map challenges and opportunities from the perspective of achieving safe management across the service chain.
- The available statistical data is not comprehensive or consistent and does not always measure performance and trends against metrics that are useful for sector analysis. For example, Census data track toilet types and sanitation improvement using inconsistent definitions, and do not differentiate between on-site and reticulated flush sanitation.
- Financial data on sanitation sector spending is very dispersed, with sanitation budgets often embedded in broader budget categories. At ministry level, allocations for sanitation are mostly bundled together with water spending. One senior official in the MoWE said that "trying to identify sanitation-specific spending was like trying to unravel spaghetti". The health and education sector budget framework papers make no specific reference to sanitation, and there are no reported budget line items for the sanitation programs or activities. Outside of Kampala, we found no urban local authorities that made specific provision for sanitation in their reported budgets.
- An important objective of this study was to collect health data to identify the incidence of sanitation-related diseases in different parts of the country and, where possible, within particular towns. Data on the risk and prevalence of particular diseases are invaluable in effectively informing priority interventions and the targeting of promotion campaigns. It was, however, not possible to address this as envisaged due to practical challenges in accessing the data collected by the Ministry of Health (MoH) at district level. Extensive efforts to access this information proved unfruitful. Nonetheless, a substantial body of data exists that proved to be sufficient to present the core findings and a diagnostic assessment.

## 4. The Context of Sanitation Improvement

### 4.1 Overview

The GoU has set out an ambitious agenda for the country's future; its Vision 2040 foresees a middle-income country with the majority of its citizens living in urban areas, having smaller families, and earning income in nonagricultural sectors. Sustained gains in poverty reduction and the achievement of this vision for Uganda will require a fundamental shift in the nature of production—from low-investment, informal activities to higher-capital, more productive employment, and a more rapid reduction in fertility rates.

However, most Ugandan households continue to earn income in informal, low-investment, low-productivity activities such as traditional crop farming and small-scale retail trading, and there has been little change in the proportion of households that count agriculture as their main sector of employment over the past two decades. Uganda has amongst the highest proportions in the world of young people under 30 years. Each year, it is estimated that over 400,000 young people enter the job market to compete for approximately 9,000 available jobs (Rugasira, 2016). Uganda Bureau of Statistics (UBOS) data show that the informal sector is the fastest growing segment of the economy (UBOS, 2016a). Over 50 percent of the gross national product is attributed to the informal sector, and 80 percent of the labor force works in the informal economy. Extensive reliance on informal sector activities constrains the government's ability to generate tax revenue and fund public spending, and Uganda has one of the lowest rates of tax revenue collection in Africa—12.7 percent in 2013 against an average of 17 percent (databank.org).

These underlying realities inform the nature of demand for sanitation improvement in Uganda, and constrain and frame the options available to the government in addressing the sanitation challenges Uganda faces.

### 4.2 The sanitation policy framework

Prior to the 1970s, Uganda was doing very well in ensuring high levels of sanitation coverage, above 90 percent, in urban and rural areas (MoH *et al.*, 2006). There was a strong emphasis on preventative healthcare, with a far higher proportion of environmental health officers relative to the population size than there is now, and a strong emphasis on robust enforcement of public health laws, with the support of local leaders. From the 1970s there were decades of war, economic collapse, and institutional decline, from which the sanitation sector has still not recovered fully.

In 1997, district authorities committed themselves to halt the declining status of sanitation, reinvigorate the sanitation sector, and accelerate improvements by signing the Kampala Declaration on Sanitation. Its content and direction remain as relevant today as when they were formulated nearly 20 years ago, even if the sector's challenges have become increasingly complex as the country urbanizes. Complementing the Kampala Declaration was a draft 1997 National Sanitation Policy. That draft policy reflected the stress that Uganda's government placed on poverty eradication. The draft National Sanitation Policy referred explicitly to the need for construction subsidies to support inclusive and equitable access to sanitation by low income households, and in areas where the costs of providing basic services are exceptionally

high—such as in areas with high water tables, collapsing soils or hard rock. It further proposed that government could provide subsidies for the operation and maintenance (O&M) costs of sanitation systems.

This draft Policy was never adopted, and to this day there is no stand-alone national sanitation policy. Instead, Uganda has a strong set of water and health policies that include specific sanitation elements.

The environmental health objective of the 1999 National Water Policy is to achieve sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users. It advises that new domestic and water services are to be developed on the basis of ‘some for all rather than all for some’. Its guiding principles include protection of the environment and safeguarding of health; community involvement including the full participation of women; community management of services backed by measures to strengthen local institutions; a demand-based approach to service provision; and the prioritization of resource allocations for those segments of the community that are currently unserved or underserved.

The most comprehensive policy on sanitation improvement is contained in the MoH’s 2005 National Environmental Health Policy, which endorses the principles of the 1999 National Water Policy. It spells out the roles and responsibilities of the ministries responsible for water, health and education, but also recognizes the contributions of NGOs, community-based organizations, and the private sector. Under the policy, collaborative development should be carried out at district level, coordinated by District Water and Sanitation Coordination Committees (DWSCCs). The policy acknowledges the need for subsidies for construction of household facilities by marginalized groupings and in areas with difficult ground conditions.

In addition to water and environmental policies that shape the direction of sanitation improvement, the third and perhaps most critical determinant of local sanitation development has been the government’s policy of decentralization, which was introduced through the 1997 Local Government Act. The policy decentralized service delivery institutions and their governance to district and town administration with the objective of improving access to services for the poor. The role of local governments is discussed separately below.

As part of the decentralization policy, responsibility for planning, budgeting, implementing, and monitoring sanitation and hygiene activities was decentralized to the districts and to lower local government levels (town councils and subcounties). Currently the country is divided into 112 districts and one city authority, with establishment of additional districts envisaged in 2017, 2018, and 2019. The districts are further subdivided into counties, subcounties, parishes, and villages. The ongoing creation of new districts is compromising institutional continuity and organizational development, and diverting attention and resources away from a sustained focus on sanitation improvements.

District administration funding has fallen sharply over the past decade, since the abolition in 2006 of the Graduated Tax collected locally and the almost complete dependence on transfers from central government. Mbale’s Chief Administrative Officer said his administration’s revenue had fallen to less than a third of what it was in the past, while the district’s population was

growing steadily. He welcomed the support of NGO partners, but said the projects they implemented were those that they identified, and did not necessarily reflect the district's needs or priorities. District leaders say they are struggling to get by on the bare minimum of resources, and just do not see a way to give sanitation the attention they acknowledge it warrants.

The growth in the number of gazetted urban areas is reducing the funding available to district authorities, and worsens their financial situation further. Urban areas do not form part of the districts' revenue base; they manage their income and revenue autonomously and thus income from urban settlements is not available to support the activities of the district. Districts are increasingly becoming residual areas from which urban settlements have been excised, and with limited prospects for funding sanitation promotion and improvement beyond what central government allocations and development partners support.

In most districts there is a District Water and Sanitation Coordination Forum, where heads of district departments, assistant district health officers, district health inspectors, and Water, Sanitation and Hygiene (WASH) implementation partners meet quarterly to share information and plan and budget activities. But without funds to implement their plans, participants say their proposals are not implemented until there is a health emergency of some kind. (See Appendix C for a list of key policies and legislation shaping the sanitation sector.)

#### **4.3 Roles and responsibilities in the sector**

Primary responsibility for sanitation improvement lies with Uganda's people at household level, through their day to day practices and the sanitation facilities they build and use. Local government is responsible for safeguarding public health and ensuring good sanitation practices in towns and rural settlements in line with the Public Health Act, Local Governments Act, and related legislation, and implementing and operationalizing programs of the MoH, MoWE, and Ministry of Education and Sports (MoES), primarily through the work of water officers, environmental health officers at district and subcounty level, and volunteer village health teams (VHTs) working at village level.

Supporting the districts are TSUs, staffed by seconded MoWE officials, and development partners. Their sanitation role involves advising districts on program implementation and assisting with the development and piloting of locally-appropriate technical innovations for on-site sanitation improvement.

Four regional WSDFs assist urban centers to plan and implement capital projects. The NWSC is responsible for off-site sanitation management across the 178 towns it now serves, although beyond Kampala, its role in sanitation is relatively limited. It operates 16 sewerage and wastewater treatment systems nationally. It is now venturing into fecal sludge management, providing limited vacuum tanker services in several towns, and operating two new fecal sludge treatment works (in Ntungamo and Buwama), with a further three scheduled to be handed over to the NWSC to run once completed. In smaller urban centers, umbrella organizations support a spectrum of small private operators providing water services—who currently play no formal role in sanitation.

Within the sanitation sector, there is significant fragmentation with differing perspectives on the scope of sanitation and where the sector's priorities lie. The three key ministries at the national

level have the following roles in relation to sanitation and hygiene promotion, as agreed in the 2001 MoU (described in Section 4.4):

The **MoH** is the custodian of the 2000 Public Health Act and the 2005 Environmental Health Policy. It has responsibility for sanitation promotion and hygiene behavior at household level, and eradication of open defecation. Its primary focus has been on achieving open defecation free settlements with at least rudimentary latrine facilities, particularly in areas supported by the Uganda Sanitation Fund.

The **MoES** is responsible for schools' sanitation, and addresses its mandate primarily through funding construction of latrines and other WASH infrastructure as part of developing new schools, and promoting hygiene through school-based learning and schools' health clubs.

The **MoWE** funds sanitation infrastructure development—primarily public latrines and treatment facilities for wastewater and sludge—and supports sanitation and hygiene promotion at district level through home improvement and CLTS activities. It is giving increasing support to fecal sludge management across the whole sanitation service chain, through a growing number of studies on market-based approaches to sludge removal. The MoWE promotes a collaborative sectorwide approach in planning and reviewing sector activities, and works closely with a wide-range of development partners and NGOs.

The Ministry of Local Government (MoLG) currently plays no direct role in driving sanitation improvement. The Ministry of Lands, Housing and Urban Development (MoLHUD) has recently called for an urban sanitation policy to give town administrations guidance on how to approach sanitation improvement, but the ministry is not currently engaging with sanitation role-players within or beyond government to explore options.

Supporting government at all levels are a wide range of development partners, community-based organizations, and NGOs, who make a significant contribution to sanitation improvement by mobilizing funds for the sector, supporting sanitation infrastructure development, and building sector capacity to plan, implement, and innovate. In line with a growing emphasis on building robust supply chains for sanitation improvement, development partners and NGOs have been giving attention to supporting the development of opportunities for growing private service involvement in the sector, and specifically in support of containment, desludging, and transport of fecal sludge. (See Appendix D for a list of the key role-players.)

#### **4.4 The 2001 Memorandum of Understanding for Sanitation/Hygiene Promotion**

Implementation of the sanitation-related policy framework has been profoundly undermined by inadequate funding commitments by sector ministries to address the sanitation mandates agreed in a 2001 MoU—between the MoH, MoWE, and MoES—which laid out clear roles and responsibilities in the sanitation sector for sanitation and hygiene promotion. The MoWE (MoWLE at the time) was assigned responsibility for sewerage services and public facilities in towns and rural growth centers. The MoH was mandated to drive household hygiene and sanitation improvement, and the MoES was given responsibility for school latrine construction and hygiene education in schools. Direct implementation responsibilities lie with the corresponding local government sector functions—Water, Health and Education—supported respectively by those ministries.

The NSWG was subsequently established in 2004 to operationalize the MoU and coordinate the envisaged national sanitation program in conjunction with sector stakeholders. The NSWG provides an important forum for coordination, advocacy, and policy discussion, but it has no binding authority. There is no policy or legal basis for implementing the MoU, no clear source of funds to fulfil the mandates assigned, and no accountability mechanisms that can be enforced on the basis of a policy framework or budget allocation.

The MoU is in need of revision to address a number of limitations. Firstly, the SDGs broaden the definition and scope of sanitation improvement considerably, well beyond coverage at household level, to include safe management across the entire sanitation service chain. Consequently, any revised MoU will need to clarify where responsibility lies for a broader range of roles and functions, with implications for the roles of a far wider range of ministries, well beyond the three outlined in the 2001 MoU, as well as for sector partners outside of government—notably the private sector. Secondly, the MoU excludes key players in sanitation implementation, including local government, the Ministry of Gender, Labor and Social Development, Ministry of Finance, Planning and Economic Development (MoFPED), MoLG, and MoLHUD. Thirdly, the sector needs a lead agency or custodian, with the authority to hold other institutions to account.

Finally, the MoU has not, in practice, supported an effective sector wide approach, because two of the three MoU ministries have not committed the funding required to drive the kind of collaborative integrated approach envisaged in the MoU. While there is a dedicated budget line for sanitation, this budget line lacks adequate funding because only one ministry, MoWE, currently contributes to it. Without finding a way to resolve the critical lack of funding to tackle the different elements of sanitation management and improvement, a revised MoU will encounter similar challenges.

#### **4.5 Changing priorities in government funding**

A major part of Uganda's current challenge is that the government's funding priorities have changed. The 1997 Kampala Declaration and 1999 Water National Water Policy were conceived in a context where the GoU's overarching goal for national development was poverty eradication. Water and sanitation were prioritized for government funding as a key sector that supported this objective, and sectorwide planning approaches were introduced to optimize harmonization and effectiveness across different ministries and development partners in pursuit of commonly agreed goals (WSP, 2015). In the early 2000s, the MoFPED and the Bank of Uganda allegedly became concerned that aid-fueled expansion of pro-poor services was crowding out private sector growth and threatening export competitiveness, and from 2002 a new strategy of fiscal consolidation was adopted which limited allocations to social services, including water and sanitation. From 2006, economic growth, wealth creation, and attainment of middle income status explicitly replaced the previous emphasis on poverty eradication. Economic and productive sectors began to claim an increasing share of public resources, leaving water and sanitation with a smaller piece of the public pie with which to provide services to a growing population (WSP, 2015).

The shift in direction is evident in the 2006 *Improved Sanitation and Hygiene Promotion Financing Strategy*, and its emphasis on increasing household demand creation, improving the

supply of sanitation services, and creating the enabling environment for sanitation improvement, including conditions conducive to the emergence of market-led approaches to sanitation improvement. The goal was to achieve 77 percent coverage of the rural population and 95 percent of the urban population with improved sanitation by 2015.

This emphasis on market-based approaches has been gaining momentum over the past decade, with the emphasis on CLTS, reluctance to consider publicly-funded subsidies for sanitation goods and services, and support for the emergence of sanitation entrepreneurs selling household sanitation hardware and desludging services. These market-based approaches are invigorating the sanitation sector and offering many consumers a wider range of options and choices. They also raise questions about the extent to which market-based approaches are sufficient to meet Uganda's commitment to achieving equitable and universal access to safe sanitation, in a context where median incomes remain modest.

Two points arise from this discussion. The first is whether selling safe, nonpolluting sanitation services on a commercial basis to poor customers offers sanitation entrepreneurs a viable trading proposition, or whether the commercial opportunities lie primarily at the top of the pyramid, leaving the bottom largely unserved.

The second point is that in a context of generally low household incomes, increasing demand for sanitation by motivating households to invest their meager resources in sanitation improvement and practice behaviors that safeguard personal, public, and environmental health requires ongoing, continual sanitation promotion activities, particularly by district- and town-level officials. Arising from this, it seems that the core challenge in achieving the outcomes that Uganda's policy frameworks envisage is inadequate public funding to enable district and town administrations to drive implementation at local government level, in both urban and rural areas, with weak support for enforcing compliance with the law.

#### **4.6 Current levels of sanitation coverage**

There is no consensus in sector data on the extent of household access to improved sanitation facilities. Data on improved sanitation coverage reported in the 2016 MoWE Joint Sector Performance Review are considerably higher than what were reported in 2015 by the Joint Monitoring Program (JMP) and found in the 2014 National Housing and Population Census (UBOS, 2016a). The Joint Sector Review data might invite complacency about the state of sanitation nationally, whereas data from other sources indicate that the state of sanitation in Uganda compares poorly with its regional peers.

**Table 1: Divergent sanitation coverage data, 2014–2016**

	Urban			Rural			Total		
	2014 Census <sup>1</sup>	JMP 2015 <sup>2</sup>	SPR 2016 <sup>3</sup>	2014 Census <sup>1</sup>	2015 JMP <sup>2</sup>	SPR 2016 <sup>3</sup>	2014 Census <sup>1</sup>	2015 JMP <sup>2</sup>	SPR 2016 <sup>3</sup>
Improved facilities	64%	73%	84.6%	23%	26%	79%	33.5%	23%	80%
		29%			17 private			13 private	Weighted total

		private + 44% shared			+ 9 shared			+ 10 shared	calculated from urban and rural coverage data
Unimproved facilities	33.5%	25%	-	67%	66%	-	58.2%	57%	-
No facilities	2.5%	2%	-	10%	8%	-	8.3%	20%	-

1. UBOS (2014), National Housing and Population Census.

2. WHO/UNICEF, Joint Monitoring Program (JMP) 2015—MDG Report.

3. MoWE (2016), Water and Sanitation Sector Performance Review.

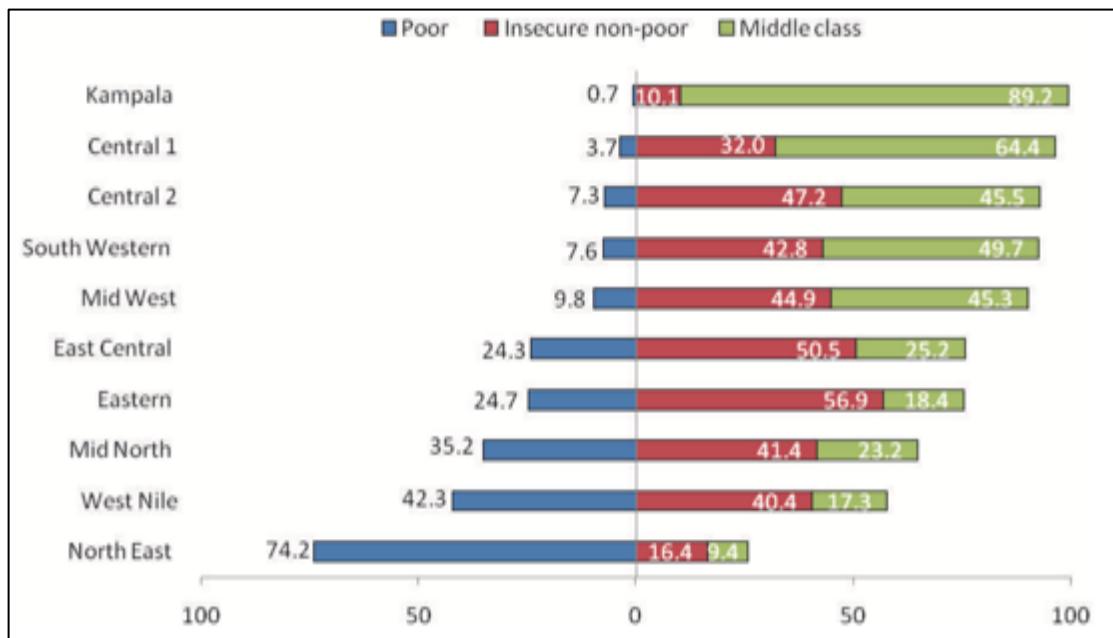
However, comprehensive unpublished district-level data collated in August 2016 in preparation for the MoWE’s Sector Performance Review indicate that it is the assessment of district officials that just 18 percent of rural sanitation can be described as improved. The statistics reported in the Sector Performance Review conflate improved rural sanitation with total rural sanitation coverage.

That same district data indicates that just 4 percent of households have both improved sanitation and a handwashing facility.

#### 4.7 The centrality of poverty in shaping sanitation needs and options

An important factor shaping household investment in sanitation facilities is poverty. A third of Uganda’s people live below the international extreme poverty line of US\$1.90 per day, although poverty rates have fallen steadily over the past two decades. A poverty rate of 19.7 percent is quoted widely, but this figure is based on a baseline of 1993 data which has not been updated to reflect real price increases of some foods that poor households consume, and the changing nature of food and nonfood consumption in Uganda. Using updated data, the World Bank maintains that a more accurate figure is a poverty rate in the range of 33 percent to 35 percent (WBG, 2016.) Above this threshold, a further 43 percent of the population is at risk of falling back into poverty in the event of a shock (WBG, 2016).

If the poverty rate of 19.7 percent is used, 89 percent (6 million) of extremely poor people live in rural areas, and 700,000 in urban areas. Most of the poorest of the urban poor (600,000) live in small towns (WSP, 2015).

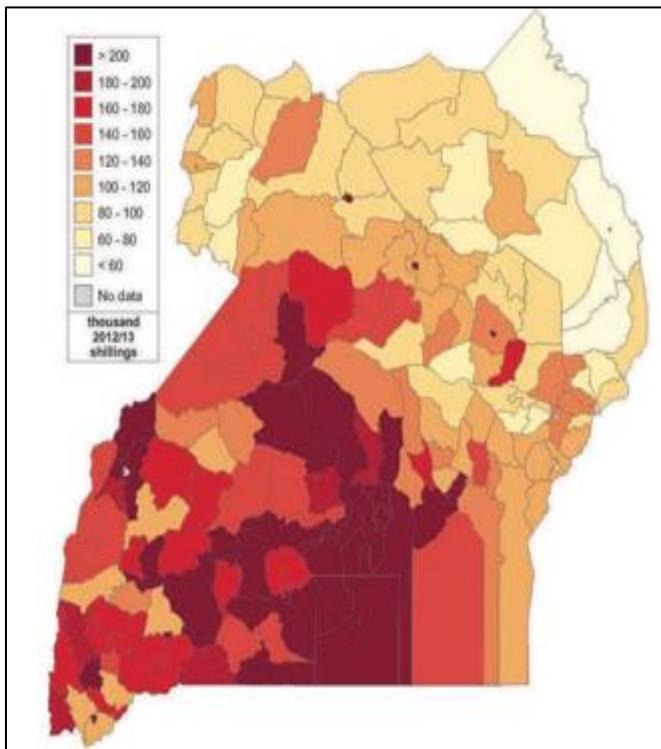


**Figure 3: Subregional income levels, 2012/13**

Source: UNDP (2014), Poverty Status Report, Structural Change and Poverty Reduction in Uganda.

Most of the poor in Uganda live in rural areas, and particularly in the Northern and Eastern regions where poverty has become increasingly concentrated, as the Central and Western regions have experienced more rapid poverty reduction. The proportion of households nationally who live in poverty in the Northern and Eastern regions increased from 68 percent in 2006, to 84 percent in 2013, as poverty levels were reduced elsewhere. Poverty rates are particularly high in Northern Uganda because of high youth unemployment, gender inequality, lack of access to basic services, low economic development, and the long-term impacts of the conflict there that ended in 2006.

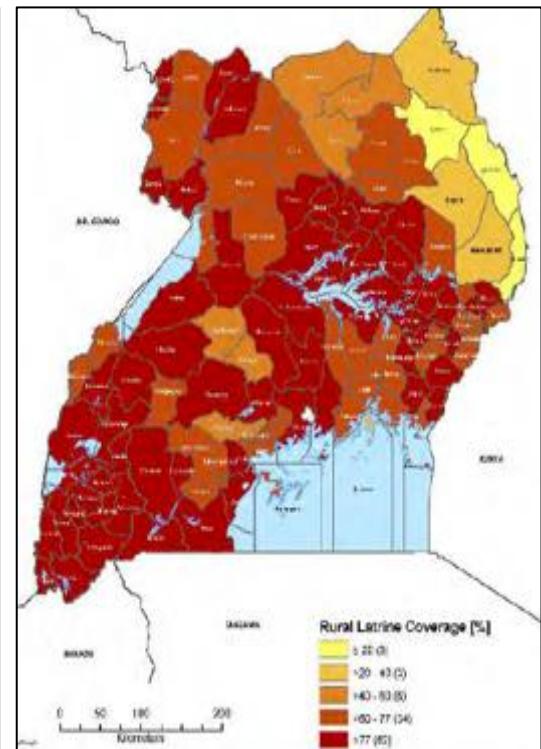
Figure 4 maps the mean monthly income consumption per adult at county level in 2013, in thousand 2012/13 shillings. It illustrates starkly the relative poverty of most households in the North and East, relative to the southern and central parts of the country. Figure 5 (on the right) shows rural latrine coverage (MoWE, 2016). It indicates substantial correlation between median income levels and latrine coverage, with the poorest areas having the least adequate sanitation.



**Figure 4: Mean monthly individual consumption per adult at county level (in thousand 2012/2013 shillings)**

Source: Uganda National Household Survey 2012/13, mapped in UNDP (2014).

Kampala residents have the lowest incidence of poverty in the country. The Uganda Bureau of Statistics' (UBOS) data indicate that just 1 percent of Kampala residents live in poverty (UBOS, 2016a; WBG, 2016), and 97 percent are in the highest income quintile (UBOS/ICFI, 2015). This finding has important implications for attempting to replicate approaches developed in Kampala in other towns with lower median incomes. Market-based approaches that show promise in Kampala may not prove as effective in other towns with higher levels of poverty, and may prove inadequate to support fecal sludge management across all income groups.



**Figure 5: District latrine coverage in rural areas, June 2016**

Source: MoWE (2016).

## 5. The Sanitation Service Chain

### 5.1 Introduction

There is growing awareness in the sector that sanitation assessments cannot look only at the front-end of the sanitation service chain (the user interface, including handwashing facilities, and containment of excreta). User behavior that contributes to good health, supported by a hygienic user interface (slab and squat hole, or toilet pedestal) along with safely contained wastes and handwashing facilities are the essential starting point of good sanitation, but safe management requires that many other elements of the entire service chain also work effectively.

This study adopted a systems-based approach to assess and map what is being done to support and drive sanitation improvement across Uganda, identify bottlenecks, and explore what further is needed to provide services appropriate to the country imminently achieving middle income country status. It gives strong emphasis to understanding the functioning of the sanitation service chain in different contexts and settlement types.

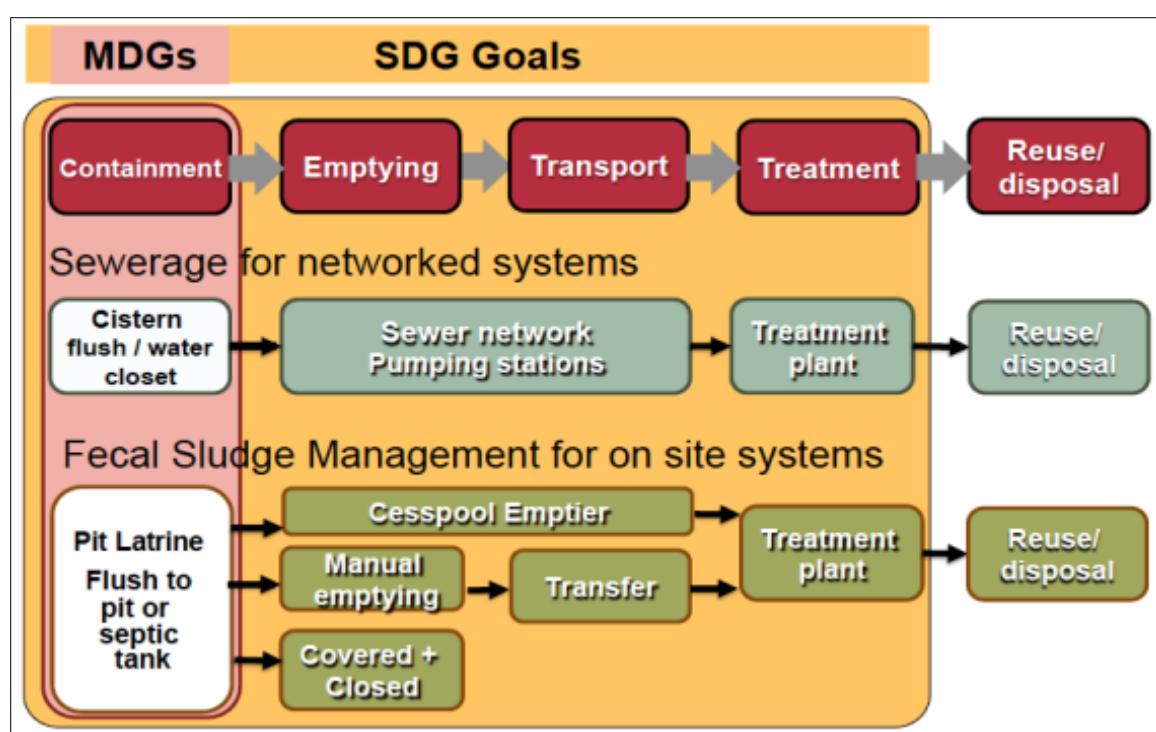


Figure 6: The sanitation service chain

This shows the components of safe management from containment to safe disposal or reuse, across seweraged and on-site sanitation systems.

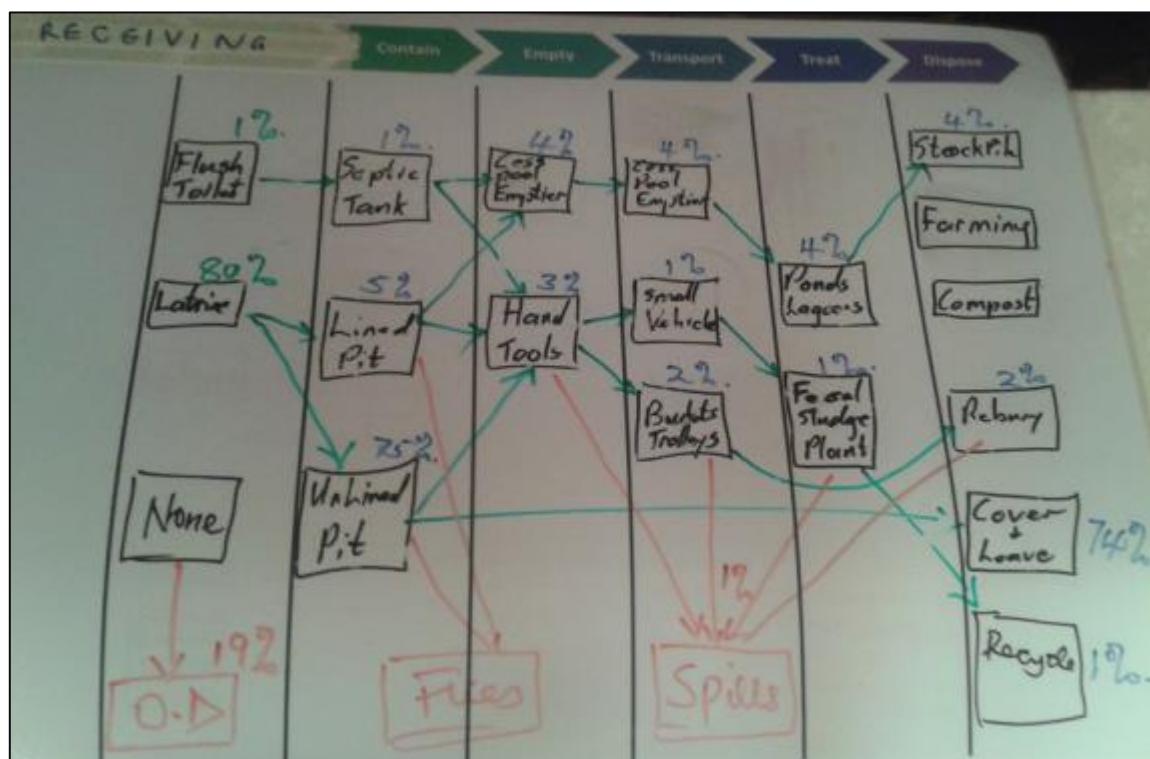
Source: Graphic based on models developed by the Water and Sanitation Program of the World Bank Group.

It is only by understanding and managing the processes associated with each component in the chain, and ensuring they link and align with both previous and subsequent components along the chain, that Uganda will achieve the improved sanitation outcomes it aspires to. The nature of these processes and related activities will, in turn, help to clarify the roles and functions of the different

role-players and ministries, and help to lay the basis for a revised MoU framework that is aligned with the SDGs.

The service chain identifies the different processes required to ensure safe management of fecal sludge. It illustrates that having wastewater and sludge treatment facilities is essential—but it is also essential to have service providers, technologies, and equipment that enables the collection of waste from users and then conveys it safely to places for treatment and disposal. This in turn raises questions about how and whether sludge is removed safely from a pit latrine or septic tank, and what proportion of it is delivered safely to a treatment location. In any networked system it is often the nature of the linkages rather than the elements themselves that dictate the outcome.

The value of using this approach is that it helps to identify what parts of the service chain are working well and what proportion of wastes are safely managed from any given process. The picture can look very different in the different parts of any given town, city or district. Contrast high-lying Kololo in Kampala, with low-lying Bwaise or Kawempe, where flooding ‘flushes’ many pit latrines in the rainy season and inundates the homes of the poorest and most vulnerable with polluted water. Mapping fecal waste flows across the service chain may help to identify where the greatest weaknesses and vulnerabilities lie in the service chain, and where the most urgent intervention priorities must be addressed.



Mapping components of the sanitation chain in Lira town: This photograph was taken at a workshop with Lira town and district role-players in November 2016, as part of the information gathering and engagement process for this assignment.

## **5.2 The service chain is relevant to all settlement types, rural as well as urban**

A brief review of Uganda's fast changing demographic landscape shows that the concept of a sanitation service chain is relevant to all settlement types—not just gazetted urban areas. There are relatively few flush toilets in rural settlements so that, in very remote areas, the service chain may simply consist of the creation of a containment facility and eventual covering and safe closure. However, a range of sources confirmed that there is growing demand for pit emptying services from schools, clinics, rest houses, even in unga-zetted small towns and rural growth centers.

Uganda had 112 districts in March 2016 and this number is set to rise in 2017, and again in 2018 and 2019. At the time of the 2014 Census the districts ranged in size from around 100,000 inhabitants (Kapchorwa) to just under 2 million people (Wakiso). The Census categorized 75 percent of households as rural, with urban areas defined only as those gazetted as a city (1), municipality (33), town council (163) or town board (62), as of March 2016 (UBOS, 2016a). The draft National Urban Policy defines a city as having a population above 500,000; a municipality above 100,000, a Town Council above 25,000, and a Town Board above 2,000 people (MoLHUD, 2016).

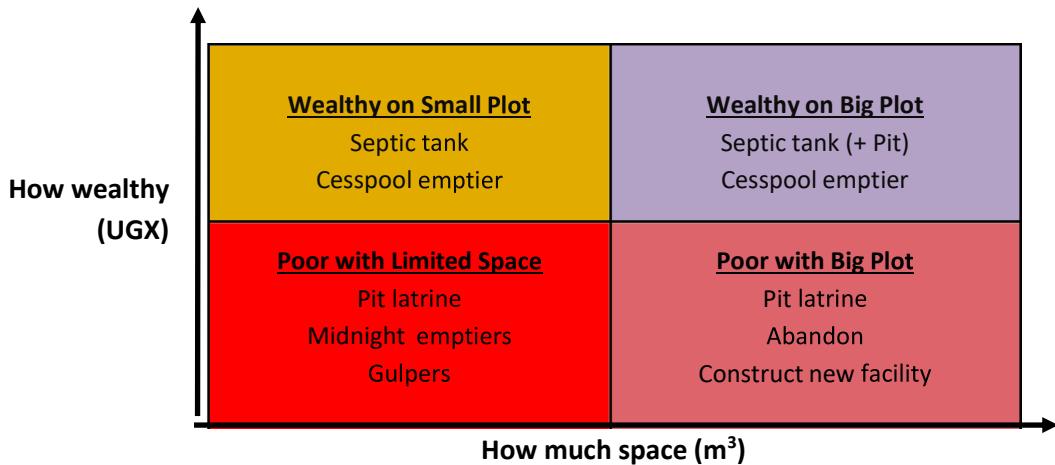
Uganda has nearly 58,000 rural villages (UBOS, 2016a) which vary enormously in size and character. Some of these are growing rapidly, particularly where they are situated near a major road. Increasingly, a number of these areas are being characterized as rural growth centers, with populations of up to 2,000 people. Some are indistinguishable in form and function from settlements gazetted as town boards, and manifest many of the challenges of urban sanitation.

These areas exhibit characteristics such as increasingly dense settlements, a growing number of people living in rented accommodation, and the emergence of informal and slum settlements characterized by poor sanitation. As trading facilities, rest houses, clinics, and administrative offices emerge in these small centers, there is a growing need for safe emptying services to avoid open dumping of sludge from on-site storage systems that become full.

In view of the range of the settlements along the urban-rural continuum, a more diverse range of sanitation improvement strategies is needed. Improving household sanitation behaviors and practices remains the number one priority. But rural sanitation strategies centered primarily on CLTS, which focus solely on improving household behaviors and facilities, may increasingly be inadequate due to the need for more elaborate service chains to address the need for services that contribute to safe sanitation services beyond household facilities in an affordable manner.

## **5.3 Thinking spatially**

Categorizations such as 'Urban' or 'rural' are increasingly inadequate to describe what type of toilets people build and what services are needed to support them. Instead it is more helpful to consider scale, density of settlement, and the relative wealth or income levels of individual households. These parameters are more useful in anticipating the technology options and choices available to households, and developing service options that take account of affordability.



**Figure 7: The relationship between available space and available income powerfully shapes people's sanitation options and choices**

In small towns, for example, plot sizes are generally quite big, with relatively low settlement densities. Most households have space to abandon a full pit and build a replacement. This suggests that the market for emptying services is more likely to lie in emptying septic tanks systems, rather than latrine pits. The toughest challenges tend to lie in dense informal settlements where most residents are tenants. They provide a ready market for informal manual pit emptiers (also called 'midnight emptiers') who offer relatively cheap, unsafe emptying services that most often result in unsafe disposal of pit contents to nearby road drains or open plots of land.

#### 5.4 Containment

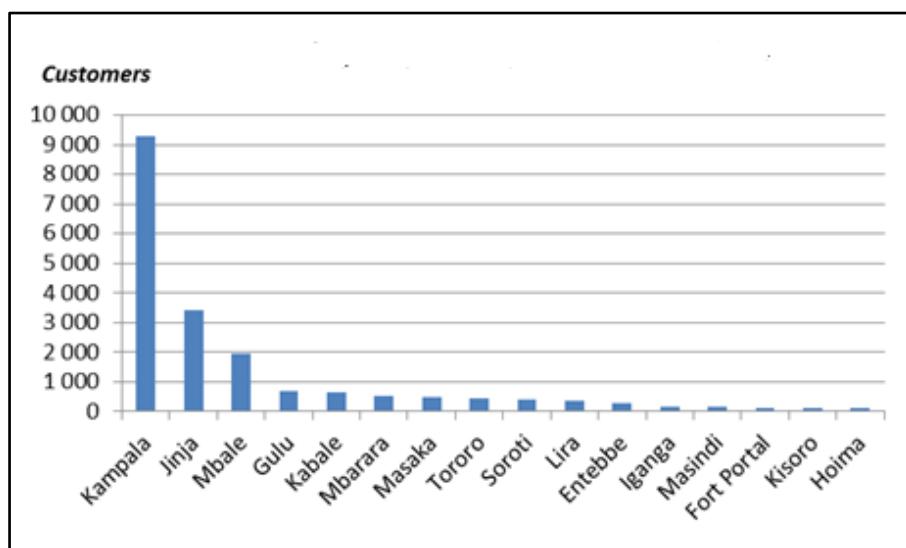
Containment is concerned with where wastes are collected immediately after urination or defecation: are they stored on-site, in a pit, septic tank, composting toilet or urine diversion system, or are they conveyed directly to a sewer network? If they remain on-site, how safely are they stored?

The data below shed light primarily on the types of toilet and toilet structures used across Uganda. Figure 8 shows towns where some degree of sewered sanitation is available. Figures 9, 10, and 11 illustrate data about different toilet types recorded during from the 2014 national Census and the 2015 National Service Delivery Survey. They highlight the predominance of traditional pit latrines with no slab in both urban and rural areas, and that just 2 percent of households nationally use a flush toilet of any kind. A third of urban residents use a shared toilet (UBOS, 2016a), and over 90 percent use some form of dry toilet. The vast majority of those using a flush toilet have septic tank or wet pit containment structures, highlighting how few of those with flushing facilities are connected to a sewer system.

There are significant regional variations. In Kigezi, the majority use covered pit latrines with a slab (68 percent). In West Nile, 67 percent use covered pit latrines without a slab, while 44 percent in Karamoja and 28 percent on the islands had no toilet facilities at all (UBOS/ICFI, 2015).

The sanitation behavior of people cannot necessarily be deduced from the available statistics on infrastructure coverage. Households with toilet structures may continue to practice open defecation (OD), particularly if their toilet is unpleasant and/or unusable for a variety of reasons.

The data also highlight that the extent of sewerage is very limited, even in Kampala, which has just 9,283 connections, serving less than 9 percent of the population. There are only 15 other towns with any sewered sanitation infrastructure, with the largest of these (Jinja) with only 3,434 connections, the smallest being Hoima with 106 connections (NWSC Corporate Plan 2015–2018). In total, the NWSC only planned for 1,276 new connections and 95 km of sewer extensions from July 2014 to July 2015.

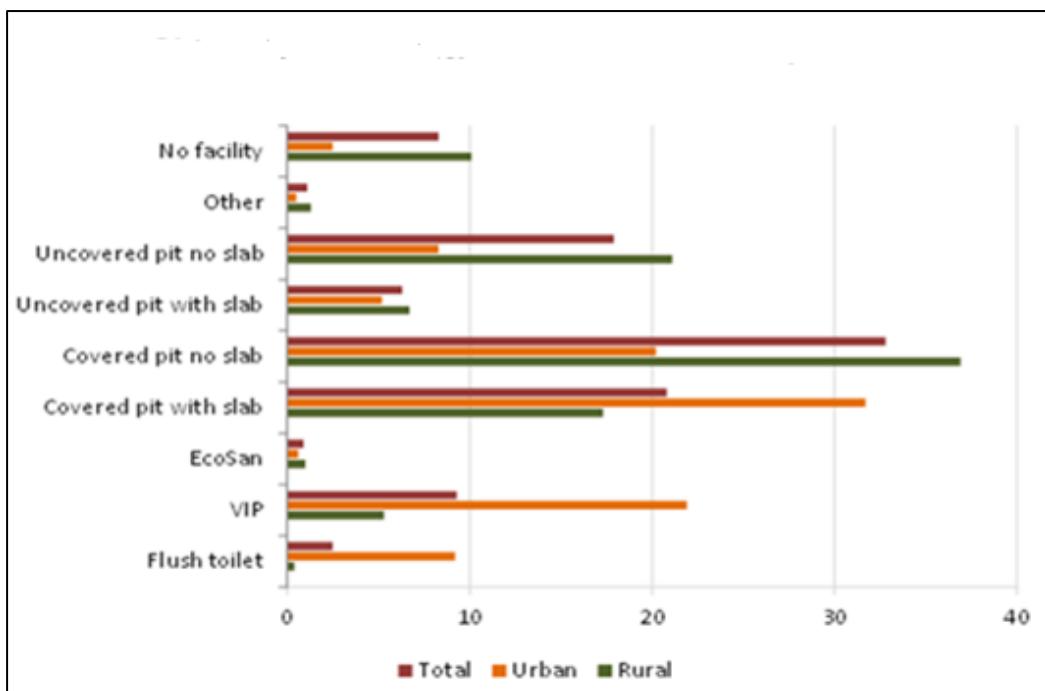


**Figure 8: Extent of seweraged sanitation in Uganda**

The number of customers connected to seweraged systems around the country is very low. Due to the reluctance of customers to connect to the systems, there is not much planned in the way of extensions to the existing networks.

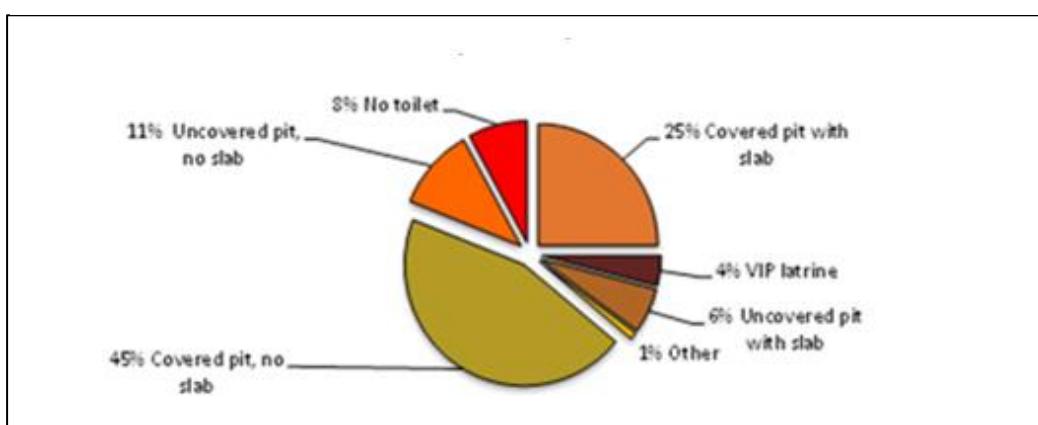
Source: The National Water and Sewerage Corporation.

In these towns there is little demand for new sewer connections. In Lira, for example, there are currently 9,000 water connections, with 700 new water connections being made per year. There are, however, only 396 sewer connections, and just 12 new sewer connections being made per year. The reality is that residents wanting the convenience of flush toilets have mainly invested in on-site facilities already, and are therefore reluctant to write off the sunk cost of their existing facility and then still pay the additional costs of a connection and monthly sewerage tariffs. The NWSC is committed to extending its sewer networks, particularly in Kampala, but the anticipated return on this investment is limited.



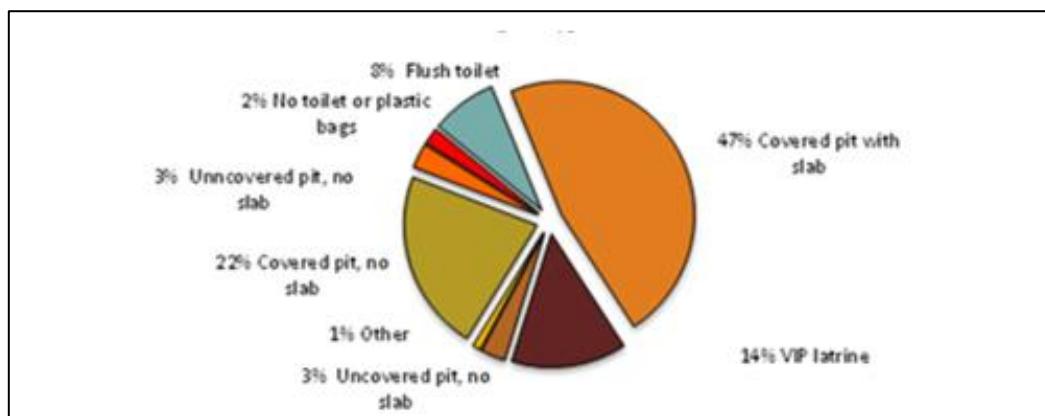
**Figure 9: Distribution of households by toilet type, as reflected in the 2014 National Population and Housing Census**

Source: UBOS, 2016a.



**Figure 10: Rural household toilet facilities by type, 2015**

Source: UBOS 2016b.



**Figure 11: Urban household toilet facilities by type, 2015**

Source: UBOS 2015.

The GoU strongly emphasizes eradicating open defecation, particularly through funding support for rural CLTS and similar sanitation programs led by district water and health teams. Despite significant achievements in increasing the number of villages designated as open defecation free (ODF) in targeted areas, open defecation is still practiced widely, and is generally more common than statistics on the lack of toilets might suggest. In rural areas, for example, the prevalence of open defecation is often far higher than a figure of 10 percent of rural households without toilets. At workshops convened in November 2016 for this assessment, health officials in Lira and Mbale estimated the prevalence of OD in rural settlements there at 19 percent and 34 percent, respectively; OD in urban Mbale was believed to be even higher at 37 percent.



Pit sludge and kavelas, or plastic bags containing feces, discarded on an open dumpsite next to a playing field in Kampala.

OD is a particular problem where town populations swell during the day and there are inadequate public toilets. This is especially true on market days. In slum areas, many residents are dependent on the facilities provided by their landlords and where there are no facilities, or the facilities are not usable, many people resort to using plastic bags (*kavelas*), which are then either placed on solid waste trash heaps or indiscriminately disposed of.

### ***Improved sanitation facilities***

Categorization of toilet structures as improved or unimproved is not always a reliable indicator of whether they do indeed ensure hygienic separation of human excreta from human contact and from carriers of disease such as flies or rats. Improved facilities include flush or pour flush facilities, ventilated improved pit (VIP) latrines, pit latrines with slabs, and composting toilets. Quantifying improved toilet structures is a proxy indicator for improved sanitation, but in practice a fouled ‘improved’ toilet with a dirty slab presents health risks, and a toilet with a slab but without a cover allows disease vectors to come and go.

Categorizing the type of toilet infrastructure sheds no light on whether the toilet is usable or used, and is an important reason for the revised approach adopted through the SDGs.

The 2016 MoWE Joint Sector Review states that 79 percent of rural households and 85 percent of urban households have improved sanitation (MoWE, 2016a). The reality is that the form of measurement adopted presents a picture that overstates how much of a desirable outcome has actually been achieved. Uganda is unusual in categorizing a clean traditional pit latrine as improved (MoWE, 2016b), using the more conventional definitions that are used internationally, Uganda’s progress would appear to be more modest. This warrants a range of urgent interventions. (Refer to Appendix B for an assessment of Uganda’s sanitation profile in the regional context.)

Data on improved sanitation coverage will require new data collection systems and considerable revision to align with the proposed new definitions being drafted by sector partners under the

leadership of the MoWE. The revised sector performance framework proposes that ‘improved’ toilet facilities should be washable, sealabe, durable, and have a handwashing facility.

The 2015 UBOS National Service Delivery Survey found that just 22 percent of households had a functional handwashing facility, while just 8 percent had handwashing facilities with both water and soap (UBOS, 2016c).

## 5.5 Emptying and transport

Many pit latrines in Uganda are dug to last a generation, and may be 5–10 meters deep. The majority of pit latrines are consequently very deep. Where there is no ingress of groundwater or stormwater these may take many years to fill. Indeed, some may have never needed to be emptied.

When the pits are full, the norm is to abandon the old pit and build a new one. Safe management requires that an abandoned pit be closed or covered.

Where a household, school or other user has invested in building a permanent top-structure, or where there is no room to build a replacement pit, the contents of a full pit need to be emptied or the volume of contents reduced, otherwise the toilet becomes unusable. It is clear that in urbanizing areas there is a growing demand for pit emptying services.

CPEs that utilize conventional vacuum tankers are the primary means of emptying latrine pits and septic tanks. The vast majority of service providers are based in Kampala (reported as around 120 in March 2017). They offer a very efficient means of removing large volumes of sludge and transporting it to a treatment site, but the cost is high and out of reach of many would-be customers. Service charges start at about UGX 200,000, depending on the capacity of the tanker. These costs rise rapidly depending on how far the CPE must drive to service customers. Based on discussion with a number of service providers, it seems that 65 percent of their customers in Kampala have lined pits, 30 percent have septic tanks, and 5 percent have unlined pits.



A private cesspool emptier/operator serving the Iganga area.

Many pit latrines are located in areas that vacuum tankers cannot reach since they are far from easy road access. Furthermore, pumped systems can only work in sludge that is fairly liquid and contains little in the way of solid matter, such as trash or garbage. There is, however, significant demand for affordable manual emptying services. With very few exceptions, this tends to mean that informal manual pit emptiers (also called ‘midnight emptiers’) that use jerrycans, buckets, spades, and barrels are employed to remove some, and sometimes all, of a pit’s contents. The sludge removed by manual emptiers is most often buried nearby in a shallow pit, discharged to a road drain or onto nearby open ground.



Sludge discharged directly to drainage channels in Kampala. These pictures were taken in a number of locations and are representative of any of a growing number of towns, notably Mukono, Wakiso, and Masaka.

There is an urgent need to develop safe emptying options, beyond CPEs, that are affordable even for poor households. It may also be necessary to impose severe penalties against those who dump sludge openly, to discourage this practice. Manual emptying, using long-handled spades and rakes, and hand-powered pumps such as the Gulper, is frequently the only way of emptying pits filled with thick sludge and refuse, because most high speed motorized pumps cannot cope with dense, refuse-filled sludge. Pump inlets get clogged and the internal mechanisms get jammed by the solids.

Demand for fecal sludge management is far higher than generally acknowledged. The 2016 MoWE Sector Performance Report maintains that less than 10 percent of the toilet facilities in towns can be emptied, making the demand for fecal sludge removal low. This statistic should be revisited and the Kampala citywide household sanitation assessment should provide valuable information to inform discussion. The available evidence suggests that the number of facilities being emptied is far higher than 10 percent, although many are being emptied using unsafe manual methods.

In Kampala, the KCCA has recently introduced a call-center to facilitate the introduction of people to reputable service providers. It recognizes the need for safe manual emptying services, and is willing to refer customers not merely to CPE operators, but also to licensed operators offering safe, hygienic manual services (the Gulpers).

Pit emptying technologies that can access sites that are inaccessible to vacuum tankers are generally small and/or portable, and do not address how to convey the waste to a safe disposal facility. Most rely on transfers to drums, and carts and trolleys to take them to an access road, where they can be loaded on a truck. But safe discharge points are generally far from where pits are emptied. Transport is often a large part of the operating cost in pit-emptying, whether for travel time, fuel or rent of a vehicle. Providing a nearby discharge point could help to reduce illegal dumping by service providers wanting to avoid a long drive to a distant designated discharge site.

Without addressing safe pit emptying, transport and safe disposal of pit sludge on a national scale, the incidence of open sludge dumping will continue to increase as the country continues to rapidly urbanize. This poses health and environmental hazards far greater than dispersed open defecation.

## **5.6 Treatment works**

The number of wastewater and fecal sludge treatment facilities is growing steadily, albeit off a very small base. In 2013, the NWSC reported operating 23 wastewater treatment facilities across 15 urban centers, including Kampala, as well as a number of small sludge treatment facilities serving small towns and hospitals (Musabe, 2013). These have since been largely taken over by the NWSC, which is investing in a range of upgrading, expansion, and rehabilitation initiatives to improve its wastewater collection and treatment capacity and turn around the generally poor compliance with treatment standards (MoWE, 2016a).

The NWSC's Lubigi and Bugolobi plants in Kampala are the primary receiving points for fecal sludge nationally, and are the home base for the majority of Uganda's CPEs. These plants are designed, or have been modified, to receive waste discharged from CPE hoses. A consequence of this is that it is not possible for manual emptiers to discharge sludge safely in the Lubigi works when it is delivered to the works in barrels, and Bugolobi is the only site in Greater Kampala where sludge can be delivered in this way.

Open discharge of sludge to watercourses and swamps by CPEs is allegedly widespread where there are no formal sludge disposal sites. It is alleged that such open discharge of CPE truck contents happens even where there are disposal sites. Such open discharge occurs if the CPE arrives at the works after it has closed or if they wish to shorten their road journey.

Eighty percent of the CPEs in Uganda are based in Kampala, but a significant number of these do travel to serve customers in other parts of the country. It would be naïve to imagine that all of them return to Kampala still carrying several tons of sludge for it to then be safely deposited at either the Lubigi or Bugolobi works. Anecdotal reports from a wide range of informants suggest that the disposal of sludge in rivers, swamps, solid waste dumpsites, roads, and open grounds is widespread. An implication of this is that the residents of even small remote settlements may be at risk from grossly contaminated open water sources.

The MoWE aims to tackle the current shortage of sludge disposal facilities by grouping towns into 50 clusters that cover the whole country, and building small treatment facilities within a 35-km radius of most small towns (Musabe, 2013). Two new works have been completed, in Ntungamo and Buwama, and construction is under way or imminent at seven further sites.

Investigation of volumes received at Ntungamo show very positive results, with regular deliveries by CPEs and good management by the NWSC. Complementary measures are needed to ensure the full benefit of these investments is realized—such as strong enforcement to ensure that sludge discharge only occurs at designated treatment sites. Ideally some form of support measure is required to mitigate the cost of long haulage distances and to ensure that CPE operators can, in a viable way, service the limited customer base in these small centers. A treatment works without a viable delivery system will deliver limited benefit.

An NGO, Water for People, is pioneering innovation in a number of areas to support better fecal sludge management. In the Northern Region it has worked with local and international partners in an attempt to develop viable service chains to small scale sludge treatment works in Lira and Kitgum.



A small sludge treatment plant developed by an NGO, Water for People, outside Lira.



The new sludge drying beds in Ntungamo, dedicated to fecal sludge deliveries.

In Lira it has recruited, trained, and supported local youths to develop a small manual sludge emptying business using a Gulper, and provided a pedal tricycle to haul filled barrels to a small treatment site 10 km west of the town. Construction of small sludge treatment works on this scale may well provide more affordable options to increasing the number of safe sludge disposal sites nationally, rather than the more capital intensive works evident in Ntungamo and Buwama.

In an impressive commitment to addressing the need for commercial viability, Water for People has invested in equipment to make charcoal briquettes from the dried sludge, to generate a revenue stream to offset the costs of treatment. However, converting latent demand for pit emptying services into a viable enterprise requires a certain minimum scale of operation and achievable, practically implementable operational tasks.

The location of the treatment site 10 km from town has proved to be too far for a human-powered tricycle carrying heavy barrels of sludge. Also, there would appear to be an insufficient market to support a viable enterprise. There is insufficient sludge to produce a commercial charcoal product. Nonetheless, the project has offered valuable learning and opportunities to revise the business process, and is precisely the kind of venture that Uganda's sector partners need to pursue. A similar initiative at Kitgum is said to be working relatively well.

## 5.7 Reuse and disposal

In Kampala the NWSC sells the mature treated sludge cakes from its Bugolobi and Lubigi treatment works as a soil conditioner and compost. It is also exploring technologies with researchers at the University of Makerere to pelletize the sludge into a pathogen-free compact form that is less bulky to store and transport. Beyond this example, and the initiatives supported by Water for People in



Covered drying beds at the NWSC's Lubigi works, where the NWSC produces compost for sale to market gardeners and farmers.

Lira and Kitgum, there are few positive examples of resource recovery from fecal sludge. Untreated sludge from CPEs and manual emptying are sometimes used as a fertilizer, but this is hazardous, especially if used in the production of food for human consumption, and should be discouraged. Regular testing for helminth eggs is essential to ensure reuse of fecal sludge as compost does not propagate pathogens.

The NWSC is currently exploring the potential of augmenting the treatment capacity at its Lubigi plant by adding a proprietary technology at the head of works that uses mechanical dewatering, solar greenhouses and thermal drying to convert sewage and fecal sludge into solid fuel with a high calorific value. This can then be sold to industrial users needing cost-effective fuel for equipment such as kilns and boilers. Revenue from the sale of such fuel will offset the cost of operation and maintenance at the plant.

## 5.8 Concluding comments

This brief review of key features of the sanitation service chain in different contexts across Uganda does only limited justice to the extreme diversity of the country and the nature of local challenges that can, for example, be found on islands and lakeside communities. The descriptions here belie the

very real advances being made in improving sanitation in some districts. The achievements of the ‘ODF plus’ approach in Mbarara warrant special mention, and are described in more detail in Appendix E.

Nonetheless, what is evident from this overview is that most sanitation improvement interventions in Uganda are fragmented, and tend to focus on discrete components of the sanitation chain, rather than looking at the linkages between them and the processes required to support the achievement of safe management outcomes. While there are indeed examples of good work being done at discrete points across the service chain, there are few examples of a considered systemic approach being adopted to address all aspects of the service chain within one town or district. Two notable exceptions are the KCCA’s growing portfolio of fecal sludge management initiatives in Kampala, which aim precisely to strengthen the working of the full service chain, and Water for People’s support for a whole service chain approach to pit emptying, treatment, and reuse in Lira and Kitgum.

Tackling the implications of the SDGs calls for a step change in approach, with a broader focus on the entire service chain.

## 6. Key Sanitation Sector Developments

### 6.1 Introduction

Sanitation improvement in Uganda is being supported by an extremely wide range of initiatives. Most Ugandans live in rural settlements, and the vast majority of sanitation improvement initiatives focus on building household demand in rural villages for sanitation and hygiene improvement through awareness and sensitization campaigns that promote good hygiene, practical home improvements, and end to open defecation. Extensive work is being done to train district health, water and community development staff and the volunteer VHTs working on the ground in approaches and methodologies that will drive better program impacts.

### 6.2 Rural sanitation improvement

Uganda’s largest sanitation initiatives currently are CLTS and home improvement campaigns led by district health and water officials, supported by VHTs. Many are delivering good results with very modest spending. The MoH budgets based on an assumed cost of UGX 1.6 million (US\$440) per village, but based on the outcome of District Investment Planning initiatives in the Northern region, districts maintain that a more realistic figure of three times that amount, UGX 4.7 million (US\$1,295) is required per village to achieve lasting impacts, even with volunteers. The approach aims to mobilize and ‘trigger’ villagers over a three- to four-week intervention cycle, with construction or improvement of facilities being achieved in a relatively short space of time.

The challenge, however, is how to sustain the gains and prevent backsliding once a village has been declared open defecation free, as the available funds are adequate to support only a one-time intervention per village—yet ‘follow up is forever’, as one assistant health inspector put it. Where villagers are encouraged to use simple, locally available materials to build structures with mud, wood, thatching, and *matoke* (banana) leaves, they may degrade within months, especially during

the rainy season, and further encouragement is needed to motivate household members to repair or refurbish the structure. In many villages it is indeed possible to transfer responsibility for sustaining gains to a committee headed by local leaders, through what is known as the Follow up Mandona approach. In other villages ongoing external support and encouragement is necessary, and for this, additional funds are required.

Some field officers maintain that the Home Improvement approach previously promoted by the MoWE and others is more effective and long lasting as it aims to foster pride in the homestead as a whole, of which a clean, safe, durable latrine is a part. CLTS on the other hand, focuses primarily on eliminating open defecation through providing at least a rudimentary toilet with a squat hole cover and a smeared floor. Without ongoing prompting many households reverted to open defecation.

Areas having the greatest success in achieving and sustaining ODF status tend to be in areas where median rural household incomes are higher than the national average, where local household toilet coverage before the intervention was above 65 percent, and where a combination of mobilization and support approaches are used. The stance of local leaders is pivotal in serving as good role-models for behavior, for motivating change, and for being willing to take a hard line against those who persist with anti-social behaviors.

Mbarara's rural sanitation improvement program has won acclaim nationally, and Appendix E describes its approach. Two decades of hard work by a dedicated team of district health assistants and VHTs on the ground has seen sanitation coverage rise from 72 percent in 2001 to over 98 percent in 2016, boosted by additional support through the Uganda Sanitation Fund. Their approach emphasizes the leadership role of subcounty and local leaders, and combines CLTS with home improvement activities, sanitation marketing, and a strong emphasis on the quality of facilities developed.

Notwithstanding the achievements of Mbarara's sanitation champions, average income levels in Mbarara are well above the national average, and the number of very poor households is relatively small. In areas with lower average incomes where there is not a critical mass of villagers already using a toilet regularly, achieving improvements and sustaining them is often more difficult, and requires additional funding for repeat visits and ongoing enforcement of the law.

Following an initiative by Water for People in 14 districts in the Northern Region, the MoWE has extended data gathering to support District Investment Planning in 72 districts to quantify the resources and costs of extending CLTS to every village in the district and achieve universal access to safe water and sanitation by 2030 at district level to meet SDG targets. The plans target every school, health center, and household. The scale of investment is daunting. In one Northern District, Agago, the planning approach suggests that investment of UGX 25.5 billion (US\$7.60 million) will be required by 2030, taking account of population growth. Using currently available annual funding allocations, it would take 68 years to achieve universal coverage.

### **6.3 Urban sanitation initiatives**

Urban settlement has accelerated rapidly off a low base over the past two decades, and growing attention is being given to the challenges of urban sanitation. There are fewer than 10,000 sewer

connections in Kampala, serving less than 10 percent of the capital's night-time population, and a far smaller number in 15 smaller towns where sewer networks were developed to some extent more than 40 years ago. The urban population relies almost exclusively on on-site sanitation, mainly pit latrines. The combination of increasingly dense settlement and extensive reliance on rented accommodation in a context of low median incomes, poses significant challenges for sanitation improvement, but a growing number of NGOs and development partners are supporting town administrations to explore options, develop improvement plans and test innovations.

Most urban sanitation initiatives are currently focused on Kampala, where the KCCA is working with a number of partners—GIZ, Bill and Melinda Gates Foundation, Austrian Aid, and others<sup>1</sup>—to tackle sanitation challenges that are compounded by extensive settlement in swampy areas and flood plains. A range of initiatives aim to expand access to improved sanitation facilities, and address fecal sludge management across the service chain. CPEs have been organized into an association to facilitate interaction with city authorities and their partners, and at least one further local association exists. A small pool of service providers using semi-mechanized 'Gulpers' has been trained and mentored to serve areas and facilities which are inappropriate or inaccessible for CPEs, and the KCCA has expanded its call-center facilities to include a referral service for customers wanting to contract a pit-emptying service.

There is a vibrant sanitation coordination forum supporting collaboration and information sharing. The KCCA has invested in key sanitation improvement areas including better solid waste collection, construction and servicing of toilets in public primary schools, community and health centers, hygiene promotion, and refurbishment of public toilets. It is now giving attention to building a strong fecal sludge management service chain. It is working to strengthen demand for improved sanitation among residents and improve their willingness to adopt and pay for improved sanitation solutions, through social and sanitation marketing measures throughout the city. It is strengthening supply chains for goods and services through training masons and other service providers and setting up binding service level agreements with emptying operators, to ensure regulated, efficient, and affordable emptying and transportation services.

In January 2017, the KCCA began a six-month program of house visits to collect comprehensive data on the type and condition of sanitation facilities in use across the city. Findings will be mapped using a GIS-based database, and used to inform planning, resource allocation, and monitoring of service provision.

#### **6.4 AMICAALL and sanitation promotion among mayors**

In November 2016, over 180 mayors and chairpersons of urban authorities signed an 'Urban Leaders' Declaration on Sanitation and Hygiene' at an Annual Urban Leaders Forum, convened by the Alliance of Mayors and Municipal Leaders' Initiative for Community Action on AIDS at the Local

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<sup>1</sup> Supported by the Bill & Melinda Gates Foundation, GIZ, and Swiss Development Cooperation, one initiative aims to improve fecal sludge management for the urban poor through an efficient and affordable private sector-led service delivery model. A call center bridges the gap between users and service providers. People who want their pit or septic tank emptied can phone the call center and be referred to a service provider; depending on the need, call center operators refer customers to both mechanized (CPEs) or semi-mechanized (Gulpers and other equipment) operators.

Level (AMICAALL). The urban leaders who signed the Declaration on Sanitation and Hygiene committed themselves to focusing on the poorest and most marginalized to ensure inclusive, safely-managed sanitation services. The full text of the declaration is in Appendix B.

AMICAALL's approach aims to sensitize mayors to the fact that sanitation needs to be given greater priority, and to use the platforms they have as politicians to give a message on both AIDS and sanitation in every speech. AMICAALL maintains that mayors can be convinced that promoting sanitation offers them political benefits, and that they can help to influence national budgeting, in addition to setting local budget priorities. Currently most of the limited combined budgets available for town health and sanitation is spent on solid waste services. In Iganga, for example, 9 percent of the town budget is allocated to health and sanitation; the bulk of it is allocated to solid waste.

AMICAALL has been active in Uganda since 2000 as a forum to support African cities and municipalities, and to develop sustainable responses to HIV and Acquired Immuno-Deficiency Syndrome (AIDS). It has recently expanded its activities to include WASH, noncommunicable diseases, and sexual reproductive health. AMICAALL offers the biggest platform for bringing urban authorities together on matters of health. With its new emphasis on WASH, it provides an important vehicle for strengthening collaboration and coordination across urban local government around urban sanitation improvement.

## **6.5 Sanitation supply chain development**

Several NGOs have given particular emphasis to developing the supply chain for sanitation goods and services to meet household demand. One illustration of progress is that over 20,000 Satopans, or 'flappers', have been sold through over 350 hardware outlets nationally. This simple easy-to-clean plastic pan with a counter-weighted flap at the base, provides a barrier to flies and odors and offers a simple route to achieving improved sanitation at relatively low cost.

### ***WASH loans***

WASH loans have been suggested as a way of assisting poor households to build or improve their facilities or invest in lined pits to enable emptying (MoWE, 2016a). A number of options are currently available: individual loans from institutions such as Postbank, or savings and credit cooperatives (SACCOs), or through groups lending by Postbank to SACCOs. Postbank has introduced a number of products, and has had uptake by a small but growing number of clients wanting to borrow funds. The evidence suggests that poor households are not the primary customers. Repayment is over three years, and customers pay 1.3 percent interest per month on a reducing balance. This is far less than the 2.5 percent charged for a business loan. Most loans are in the range of UGX 1–5 million (US\$250–1,380), although several schools have borrowed up to 20 million. Even at this concessionary rate, uptake has been mainly by better-off borrowers who can provide 20 percent of the loan value as collateral, or land title, a vehicle or high value consumer goods.

In Mbarara, a comparatively wealthy district, the Postbank manager said uptake of loans for VIP toilet construction, septic tanks, piped water, and rainwater tanks had now increased to 20 to 25 per month, with total loans close to UGX 1 billion by January 2017. In Mbarara, the 10–30 members of a SACCO guarantee the loans, which are issued either as individual or group loans. In Soroti, a much poorer district, Water for People guarantees the loans and has facilitated a total of about 35 loans to

date to individuals for sanitation improvements. In Fort Portal, uptake has been disappointing, primarily because the interest rates and collateral requirements are generally perceived to be relatively high and there is little demand for loans for sanitation facilities.

#### ***Semi-mechanized pit emptiers***

Water for People has trained a number of would-be entrepreneurs to enter the gulping business. The attrition rate is high, but there are now five entrepreneurs offering semi-mechanical services in Kampala using Gulpers and other equipment. Simply securing a trading license constitutes a significant barrier to entering formal sector markets. Only two of the five have trading licenses. The cost—UGX 475,000 per year—is significant, but the greater challenge is assembling the requisite paper trail of audited financial statements and other documents. There is an evident need to offer guidance and support to those who have limited English, and who are not aware of the benefits of having a trading license. Note that the trading license does not entail any regulation of the way they conduct their business, and amounts simply to an annual tax.

### **6.6 Institutional sanitation: Schools**

The provision of sanitation facilities in schools requires priority attention. Fifty-five percent of the population of Uganda is under 18 (UBOS, 2016a). There are nearly 9 million pupils in over 18,000 primary schools in the country and 86 percent of these are in public/government-aided schools. Since the introduction of Universal Primary Education (UPE) in 1997, there has been a massive increase in the number of learners going to school, but the number of toilet facilities lags far behind what is now needed. Because children spend a significant amount of time in and around their schools, the state of school sanitation facilities has a significant impact on their wellbeing, and provides important opportunities for entrenching life-long attitudes and behaviors.

A recent survey of 910 primary schools nationally conducted for the MoES shows that three-quarters do not meet the government's standard of one latrine per 40 pupils. District data show that pupil:stance ratios above 100:1 are not uncommon. The vast majority of schools do have latrines, which are predominantly dry pit latrines of some kind. However, at least 15 percent are dysfunctional and two-thirds are dirty and smelly. Open defecation was evident in at least a quarter of schools surveyed (MoES, 2016). Further, pits that are full may be abandoned without safe covering and closure, in ways that do not represent safe management. Just 17 percent of school toilets have ever been emptied, even though a majority now have a lined substructure to facilitate emptying. Emptying is more common in urban areas, where there are more commercial service providers. Mechanical emptying is twice as prevalent as manual emptying. Where facilities cannot be emptied, they tend to be abandoned and replaced by cruder facilities.

The main reason so many facilities are dysfunctional is that schools lack funds to operate maintain and repair facilities. Just a third of government schools budget for O&M of school toilets, and only 7 percent have adequate funds (MoES, 2016). Annually, schools receive funds from two main sources: the Universal Primary Education Fund, a conditional grant of UGX 5,550 per pupil per school year, with 15 percent earmarked for school management, and a School Facilitation Grant mainly for classrooms, with no allocation for WASH related costs. School administrators say that MoES funding prioritizes learning—classrooms, books and so on—not WASH facilities, and so the shortfall has to be covered by parents. Nearly two-thirds of primary schools charge development/building fees (UBOS,

2015), although their contributions are constrained by both their willingness and ability to pay. Many parents are resistant to making contributions as they maintain that government should fund all costs associated with schooling, in line with UPE. Where parents' contributions are low, the facilities are inadequate and degraded. Clarity on government's position on funding construction and emptying of school sanitation facilities is needed urgently.



Abandoned toilets in a school near Lira.



only to serve prisoners, but staff and visitors too.

## 6.8 Sanitation for refugee settlements

Uganda has one of the world's most compassionate refugee policies, and has accepted about 1.2 million refugees and asylum seekers from Somalia, Rwanda, Burundi, South Sudan, and the Democratic Republic of Congo. There are a growing number of refugee settlements in northern, western and south-western Uganda, but the biggest are in the north. In March 2017 an estimated 2,800 people were arriving in Uganda each day from South Sudan. (IRIN, 2017).

Providing adequate sanitation in a context of rapid arrival of displaced people can be extremely challenging, and the risk of disease outbreaks can be high. Providing safe alternatives to open defecation is the priority. Between July and November 2016, 213 cases of cholera were managed

Only 2 percent of girls' latrines have bins with lids for sanitary pads disposal and less than 30 percent have water near or inside. Only around 40 percent of all schools have handwashing facilities and only 30 percent of these (12 percent overall) have soap for handwashing.

Schools sanitation is a primary focus of most WASH NGOs, and construction of school latrines is supported by a wide range of NGOs and faith-based organizations. Two-thirds of total reported CSO spending on sanitation, UGX 7.8 billion (US\$3.2 million) is on construction of school sanitation facilities (MoWE, 2016a). Finding safe disposal sites is a challenge, given the dearth of sludge treatment facilities and stabilization ponds nationally.

## 6.7 Institutional sanitation: Prisons

The Prisons Services is aiming for a prisoner:stance ratio of 25:1, which compares with the schools' goal of 40:1. Bucket toilets are steadily being replaced by good quality facilities, and over 100 of the country's 227 prisons are sewered. Facilities are needed not

successfully at settlement camps in Adjumani, Amuru, and Yumbe districts. (UNHCR, 2016; *The Monitor*, 2016).

Building on Uganda's experience in supporting internally displaced people, refugees are allocated plots of land and given materials to build a basic home, as well as food aid and access to basic health and education services. This shifts the nature of the sanitation challenge significantly from being primarily about emergency interventions or long-term 'interim' arrangements, usually in tents, to moving people swiftly from reception centers into permanent settlements where they can establish a new life for themselves. The sanitation challenge is then not dissimilar to that in densifying rural and peri-urban settlements, where there is space for a pit latrine—and likely to be future demand for pit-emptying services.

In Bidi Bidi, currently the world's largest refugee settlement but established only in August 2016, the primary sanitation option is communal pit latrines, with a small but growing number of households building their own pit latrines. Government agencies and relief workers are leading sanitation sensitization; they are building latrines, constructing handwashing facilities, and also making drying racks for utensils, among other practices. To further support the households, relief agencies including UNICEF provide them with bricks, slabs, wooden doors, treated poles, doors for the latrines, and jerrycans for construction of handwashing facilities (UNICEF, 2017).

An alternative approach is being implemented in several Kenyan refugee camps, using container-based sanitation. An NGO called Sanivation provides portable urine diversion toilets, excreta are contained in sealed storage containers and collected once or twice a week. The urine is used to nourish crops, while the solids are sterilized and dried in a simple solar drier, and then mixed with plant residues and processed to form biochar, a cheap fuel source (Foote *et al.*, 2016). An advantage of this approach is the potential to generate a revenue stream from selling biochar to offset service costs. This is a significant consideration in refugee camps where residents are generally exempt from paying service fees for the first three years.

## 7. The Diagnostic

### 7.1 Overview

Based on an extensive literature review and discussions with a wide range of role-players from towns and districts from different parts of the country, it is evident that three main factors are holding back progress in achieving the sanitation improvements Uganda needs:

- Low median household incomes, which constrain investment in sanitation improvement, particularly in the absence of programs designed to stimulate demand for sanitation.
- Chronic underfunding of local governments, which severely limits their ability to drive sanitation improvement campaigns, develop and operate public toilets, enforce compliance with the law, and develop facilities for safe management.

- A shift in government's spending priorities away from water and sanitation, health and education in favor of investment in sectors that will stimulate economic growth and the attainment of middle-income country status.

These points have been made repeatedly in a number of studies. They remain fundamentally relevant. The current rate of progress in the sector reflects what can be achieved with this quantum of funding. The sector is currently stuck in a low level equilibrium, and prospects for achieving different sanitation outcomes with the same resources are limited.

While statements are made at high level about the importance of sanitation, this importance is not reflected in budget allocations. Data presented in the 2016 MoWE Sector Performance Report suggest that total sector spending on sanitation improvement in 2015/16 by government, development partners, and CSOs for both hardware and software was well below US\$10 million, with sector partners beyond government contributing the bulk of those funds.

This reality helps to explain why so few sanitation initiatives are more than finite projects. There is funding for policy and strategy development, training and capacity development, testing of new approaches, development of knowledge products, tools and guidelines. Most of this work is funded by development partners. There is funding for initial trials, but with the exception of the Uganda Sanitation Fund (which relies heavily on Water Supply and Sanitation Collaborative Council funding), there is seldom funding for large-scale implementation.

Advancing sanitation improvement systematically and sustainably requires a fundamental shift from reliance on externally-funded project-based approaches, to a sustained focus on sanitation *by local governments*, with dedicated funding from central government to address their sanitation mandate on an ongoing basis. Without the enabling environment that this funding backbone will provide, the impacts of externally-driven sanitation projects will continue to be short-lived. Consequently the lack of adequate funding for sanitation by local government represents a massive inefficiency for government as a whole.

These points are detailed below, by highlighting key themes that arise from the assessment.

## **7.2 Household incomes fundamentally shape what is possible**

There is a growing number of tools and manuals to guide program design and service providers. The far greater challenge is how to mobilize ordinary citizens to undertake the improvements and changes that sector role-players regard as necessary. Structurally, improvement in the sector relies heavily on investment by individual households, and progress is constrained by modest aggregate household incomes. The cost of replication without external funding is greater than households are willing or able to fund and, thus, motivation and momentum is lost.

Households are not merely the biggest change agents, but are also by far the biggest investors in sanitation in Uganda. Sanitation approaches based on mobilizing and motivating households to improve their own facilities remain Uganda's best available option for large scale change. A comparison of total sector spending against a very conservative estimate of spending by households suggests that total household capital investment is currently four times greater than the combined

sanitation spending of all spheres of government, development, and NGOs. The estimated replacement value of existing household sanitation assets is currently in the order of UGX 2.3 trillion.

Uganda is well on its way to becoming a middle-income country, but public investment in sanitation improvement is currently at a low level. Consequently, a central premise of this assessment is that the pace of sanitation improvement in Uganda depends, to a large extent, on the behaviors, choices, and payments of ordinary people. Better sanitation does not emerge in isolation from the wider context affecting people's living standards and lifestyles—including housing, income, work opportunities, education costs, family obligations, and so on. How people manage their waste, and indeed whether they wash their hands is, fundamentally, an individual or household decision. External agencies can influence, encourage or attempt to enforce particular practices and construction norms, but unless government funds construction of household toilets at scale, government's ability to 'shift the needle' of household sanitation is, at best, indirect.

This is a key part of the challenge to achieving the improvements Uganda needs. Median income levels in Uganda remain modest, particularly in rural areas, and many households are poor. Investment in improved sanitation facilities and services can be a difficult trade-off for households, when weighed against purchase of food, school uniforms, and a range of essentials that are given higher priority than having a better toilet. Local health officials say that most people, whether living in urban or rural settlements, understand the risks of open defecation, and have a basic knowledge of what better sanitation entails. But many do not take the initiative to act on this knowledge unless prodded, and tend to backslide if not reminded. Behavioral change takes time and ongoing reinforcement, buttressed by consistent enforcement of penalties for noncompliance. Strong leadership and consistent messages are key. A coherent, compelling, and long-term national communications program is needed to raise the profile of sanitation and build acceptance that better sanitation is worth investing in.

These are most effective when a layered multifaceted approach is used, like Mbarara's ODF Plus team does—it offers leadership by a committed sanitation champion, ideally the subcounty chair; triggering that links problem behaviors to local sanitation and hygiene related health risks; a catalog of options to inspire choice and customization, supported by a supply chain of affordable local materials and trained builders; an emphasis on quality improvements that last, particularly a washable slab that remains odor-free; a focus beyond the latrine to build pride in broader homestead improvement, with a drying rack, handwashing facilities; and a willingness to enforce compliance with the law and local bylaws to prevent backsliding.

This is where the contribution of CLTS can be profound: it creates an impetus to move away from open defecation, and to construct a basic toilet, however crude. But the evidence suggests that for many poor households, the cost of moving beyond a rudimentary facility is not perceived to be worth the additional expense, because the additional utility and benefit of an improved facility is regarded as limited. And where householders do invest in a latrine with a cover over the opening, ongoing reminders are usually needed to ensure the cover is replaced after use. Entrenching good hygiene behaviors—for example, the value of a good quality household toilet, handwashing—requires a wide-ranging strategy with ongoing reinforcement over many years.

Sanitation promotion is just as important in urban areas, but is not being addressed beyond limited NGO-led projects. Urban sanitation promotion is particularly important in a context of rapid urbanization, where many residents are living in large dense settlements for the first time. As emphasized earlier, creative communications and marketing approaches should be used to drive mass-based campaigns. The message content is context specific.

Limited public funding to support demand creation and enforcement of safely managed sanitation, notably at local government level, goes a long way to explain why so many innovative pilot projects have failed to gain traction and be replicated at scale. Without appropriately funded external drivers of change, the pace of external sanitation improvement will continue to reflect the rate of increase in average household incomes, and will be limited by the extent of such increase.

### **7.3 Rural and urban sanitation are qualitatively different: What works in one area will not necessarily work as well elsewhere**

Uganda is extremely diverse, with a wide range of languages and cultural traditions, physical topography, resource endowments and settlement characteristics. Median incomes vary substantially district by district. Figure 12, taken from the 2015 UBOS National Service Delivery Survey, indicates how profoundly the nature of the sanitation challenge varies from locality to locality. In some regions, wetlands and a high water table present formidable challenges, while in others solid rock makes it impossible to dig a latrine pit. In the north-east of the country, the entrenched traditions of nomadic people confound most conventional sanitation approaches. The strategies required to achieve ODF status are fundamentally different where over 40 percent of people practice OD, as in Karamoja, compared to areas of, say Mbarara, where the average baseline at the start of local ODF campaigns was reported to be above 90 percent. Different ground conditions—notably, swampland, rock—significantly shape the nature of the resources required and the time needed to achieve desired outcomes.

There is no ‘one size fits all’ sanitation improvement approach or technical solution, and the range of variables multiply exponentially when safe management is considered across the entire service chain. Where households have sufficient space to cover over a full pit and build a new pit and top-structure, the sanitation service chain is short and straightforward: disposal on-site is simple and safe, *provided* the height of the water table is low enough to rule out groundwater contamination as a concern and that effective covering does actually take place. A wider range of variables are relevant in swampy or lakeside areas or in dense settlements where there is no space for another pit, or where there is a significant investment in the existing top-structure (notably in schools). Low-lying urban settlements prone to seasonal flooding have different priority needs to those on high ground, and soil types and groundwater ingress profoundly shape the rate at which pits fill.

Seventy-five percent of Uganda’s population lives in rural settlements. A wide range of initiatives are under way to mobilize household investment in better health and hygiene. The CLTS program is achieving significant successes, and arguably is the best tool currently available for achieving improvements at scale in Uganda’s rural settlements. The lessons of successful implementation to date offer opportunities to enhance the program further. In tandem with sanitation promotion through CLTS, there is a growing emphasis on comprehensive district WASH planning, to identify

gaps in the fields of rural water, sanitation and health infrastructure and services, and to quantify the resources required to close them.

Urban residents still comprise a relatively small proportion of the total population, but Uganda now has one of the highest rates of urbanization globally at 5.2 percent per annum. By 2050, at least half the population will be living in towns and cities (MoLHUD, 2016).

Urban sanitation is qualitatively different from rural sanitation, and calls for a broader range of approaches and interventions. The scale and density of human settlement in urban centers calls for *services* to manage the range of waste streams that exist, to protect public health, limit pollution, and safeguard water sources. This means that sanitation improvement is much more than a household responsibility. In addition to promoting household behaviors and investments that support health and hygiene, urban authorities must ensure safe management of fecal sludge, wastewater, and other wastes beyond the household.

Sanitation is multifaceted, and deficiencies in one area have knock-on effects on others. These linkages and inter-dependences are particularly marked in urban settlements, and rapid urban growth adds urgency to integrating sanitation more centrally in town management and urban planning.

Poor solid waste management and unsafe disposal of human wastes impacts on water quality. Uncollected solid waste, often mixed with human wastes, contributes to blocked drainage channels and flooding. Sanitation improvement options are shaped profoundly by the nature of water supplies and, in urban areas, by the extent of water connections and volumes of wastewater being generated. More broadly, sanitation plans must align with urban renewal strategies, and take account of tenure security, housing developments, and the availability of land.

Urban sanitation strategies must also take account of a far wider range of elements—scale, settlement density, drainage, as well as a spectrum of means and aspirations. Over 60 percent of urban residents live in informal settlements or slums (MoLHUD, 2016) and at least half are tenants (UBOS, 2016a) with few incentives to invest in improving toilet facilities owned by someone else. Improvement strategies need to engage a more diverse population, from transient day visitors through to landlords and real estate developers, with a diverse portfolio of affordable and pragmatic service options.



The incidence of rented accommodation is climbing steeply in small towns. Sanitation promotion campaigns will increasingly need to target landlords specifically, and engage local and national political leaders, to enforce existing health and building regulations more assertively.

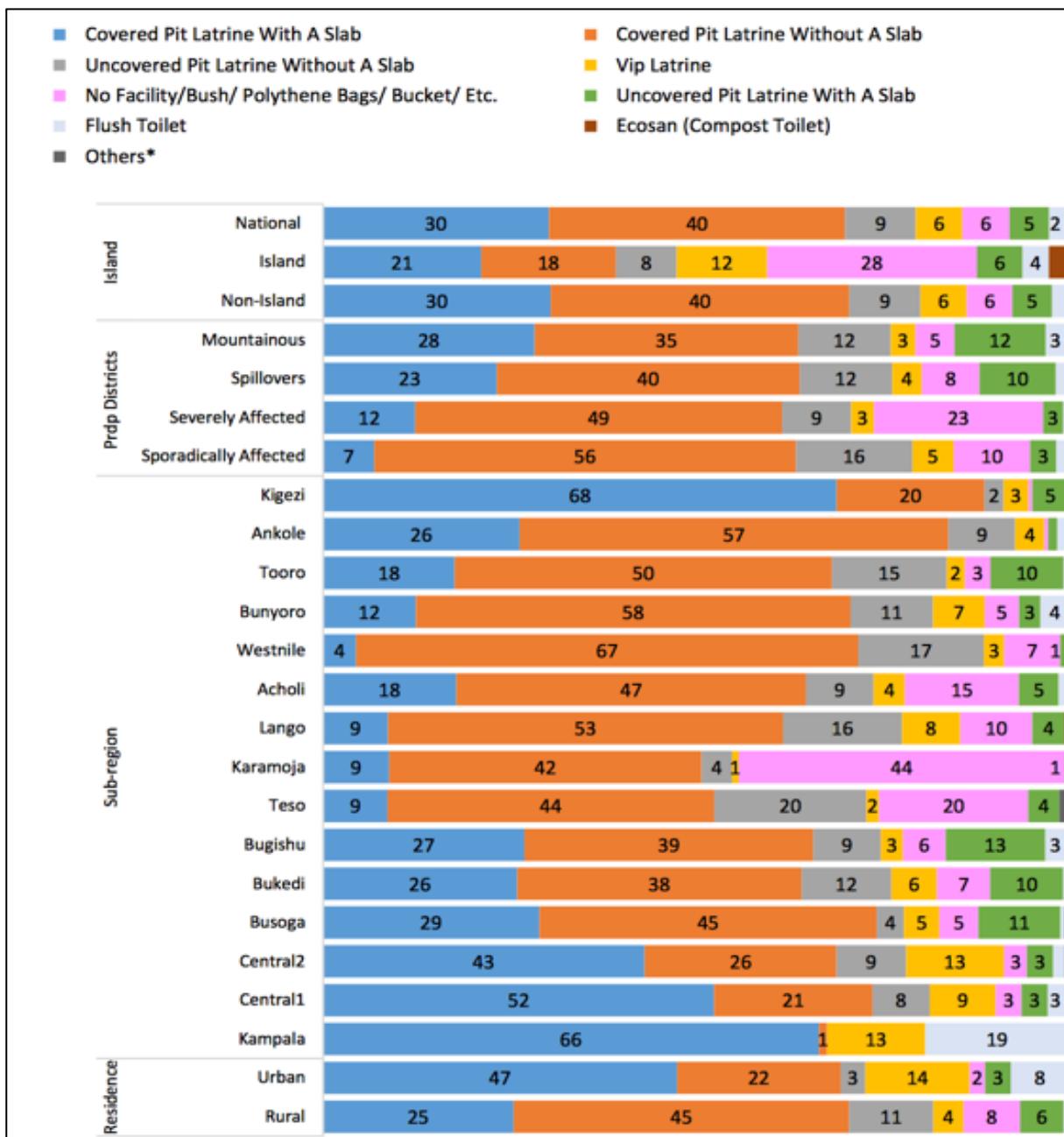


Figure 12: Sanitation facilities for a sample of sub regions

Source: UBOS (2015), National Service Delivery Survey.

Local authorities are best placed to assess their local contextual challenges, and urgently require guidance on what their range of feasible options might be. Even a single workshop to map core challenges using the SFD can advance understanding of where the priorities lie, and where the key gaps exist in tackling safe management across the service chain. It calls for a different approach to capacity development and applied problem solving, to equip local authorities to develop locally appropriate contextual remedies, using the resources available to them.

Arising from this, catchment management planners are a priority target for training and capacity development in the use of sanitation improvement planning and prioritization tools, with the SFD being an essential starting point to identify sources of fecal pollution that impact on the broader environment.

## **7.4 Inadequate sanitation funding leaves local authorities dependent on the projects of external partners**

The core challenge in achieving the sanitation outcomes that Uganda needs is inadequate local government funding to enable district and town administrations to implement effective sanitation improvement programs, in both urban and rural areas, and enforce compliance with the law.

### ***District administration***

The role of district government and its substructures at subcounty and parish level is pivotal in driving household sanitation improvement through CLTS, sanitation marketing, and related home improvement campaigns. Achieving the level of desired improvement required calls for a step-change in the roles of local government, the MoLG, and the quantum of funds available to local government.

The extent of flux in district administration has already been flagged. The number of districts has doubled since 2006, and the number of gazetted municipalities and town councils is growing rapidly. Revenue that town councils generate and collect locally (albeit a small proportion of their total funding) is theirs to use, and is not available to the district. This means districts have declining revenue sources as the number of town councils increases, and therefore even less funding to support sanitation improvement.

District authorities interviewed for this assignment described their almost total reliance on central government for their funding. In the past, districts' main revenue base was the Graduated Tax which was collected and used locally. This was abolished in 2006 and replaced in 2007 by transfers from the central fiscus that are based on collection of Value Added Tax. Districts say they even lack the capacity to revalue properties and revise their property rates. They also state that local service taxes on hotels and markets are very limited outside of urban centers. They rely on central government transfers for well over 90 percent of their income. Compounding their financial constraints is the fact that budget transfers are not being revised to keep pace with population increases.

Some districts receive funds from development partners to run specific programs around sanitation or HIV prevention—but with the withdrawal of key partners such as Danida and possibly GIZ, even these sources of funding are reducing.

Sanitation champions within district government struggle to get the ear of the decision-makers who determine where the limited funds that are available are allocated. One local government official noted that sanitation officials in his administration were five reporting levels down from the



*With very constrained budgets, town and city managers struggle to give sanitation the funding and attention it warrants.*

decision-makers who allocate resources and shape the decisions of other role-players. Consequently, sanitation issues were simply absent from the agenda and thinking of the executive.

## 7.5 Market-driven approaches are necessary but not sufficient

### *Pit emptying: private-sector led versus pro-poor*

In the urban sector, the primary strategy for addressing demand for pit emptying services is through the private sector. The primary customers of formal sector emptying service providers, whether CPEs or Gulpers, are institutions, businesses, upper income households and landlords. Market-based approaches that encourage the private sector to provide sanitation services on a commercial basis are proving valuable in expanding the range of service options available to those who can afford them. The number of formal service providers offering desludging is growing steadily, but universal service coverage cannot be addressed solely through purely commercial models run by entrepreneurs.

There is a big difference between private sector-led approaches and pro-poor approaches. Universal inclusion requires greater attention to pro-poor approaches that may not be commercially viable. Private sector operators are motivated by a desire for profit, and they are unlikely to offer safe sanitation service in markets where there is no viable trading proposition.

Consequently, a wider range of service options are needed, with additional public funding to address public goods like public health and safety, and a clean living environment.

Unsafe pit emptying services provided by informal manual pit emptiers (also called ‘midnight emptiers’) for poor households are a good example of the mismatch between public good and private benefit. There is a robust market for informal emptying services by ‘midnight emptiers’, but the service they offer is removal of sludge with local disposal to a nearby trench, drain or stream. Vigilant enforcement and prosecution of those who practice illegal dumping could reduce the incidence of unsafe disposal, but a lasting solution requires a more affordable service option that addresses the public good requirement of safe disposal. What is missing from their service is transport—haulage to a safe disposal site. Perhaps some subsidized partnership with a CPE emptier or owner of a pick-up truck could address this need.

Some form of subsidized service is needed, but the available options—such as vouchers for poor households entitling them to a concessionary tariff—can be abused, leading to the benefit being captured by nontargeted users, such as landlords; pit emptiers themselves could game the system to their own advantage. It seems that the most pragmatic way forward would be to explore possible solutions directly with informal emptiers.



Manual pit emptying meets demand for an essential service, and can be done hygienically and safely. Here a service provider removes sludge from a pit latrine with a scoop, below the level a Gulper can reach.

### ***Running public toilets as concessions may compromise reduction of open defecation***

Affordable access to congenial public toilets is essential to counter open defecation, particularly in towns where day-time populations are far greater than at night. Effective management of public toilets is a challenge in many parts of the world, and there is a growing trend to delegate management to the private sector. Private operators charge a fee per use, and are thereby incentivized to offer clean, congenial facilities and run a potentially profitable enterprise. The success of this approach varies enormously. In Fort Portal, there is evidently considerable resistance to paying user tariffs upwards of UGX 200 per use.

In Iganga, three public toilets have been handed over to the private sector to run, with the municipality requiring what amounts to a monthly concession fee from the operators. Two of the toilets are well located in the middle of the town, are well used and generate good income for both the operators and the municipality. The third, away from the town center, does not attract sufficient users to generate enough revenue to cover the operators' costs



Figure 25 A public toilet in Iganga—run by a private concessionaire that boasts of being open 24/7—that has been forced to close because income was inadequate to cover a concession fee to the local authority in addition to adequate operating income to the entrepreneur.

and the local authority's fee, and has been closed. At least two successive operators have tried unsuccessfully to run this public toilet on this commercial basis, and it is evident the location does not support a viable business model. Rather than losing the entire benefit of a public toilet facility that is in good condition, the approach should perhaps be revised in the public interest—in that location, the operator should not be required to generate income for the local authority as well as the operator.



Discharging pit sludge directly into a drain in Bwaise, Kampala (March 2017). In addition to better enforcement, poor households need access to affordable safe pit emptying services. If the real costs of safe removal and disposal are not affordable to them, they are likely to pay informal manual emptiers to only remove the sludge from their pit latrines, and not address safe disposal. Public funding may be needed to avert gross water contamination as a public good.

### **7.6 Neglect of sanitation is resulting in a severe disease burden, with high curative health costs and lost productivity**

A cholera outbreak that started in October 2015 resulted in 3,196 cases being registered in 34 districts till October 2016, and there were 95 recorded deaths. The outbreak was first reported in Amuru District and the West Nile Subregion. Initially it was associated with refugees entering Uganda from South Sudan, but poor environmental health management practices spurred the spread of the disease more widely (UNICEF, 2016). In parallel, over a thousand Kampala residents were stricken with typhoid in 2015, with unprotected urban

springs contaminated by fecal sludge being a primary source of infection.

Cholera, typhoid, dysentery, and diarrhea are well known consequences of poor sanitation. Less widely recognized is the importance of good sanitation in combatting stunting in children. The following quote is taken from a May 2015 article in Uganda's *The Observer*:

According to Ministry of Health statistics, the rate of stunting among Ugandan children below five has been reducing by five per cent every five years and is currently at 33.4 per cent. This implies that three in every 10 children below five years of age are stunted. The figures make Uganda one of the high-burden countries in terms of malnutrition and stunting.

...Evidence shows that children who live without adequate sanitation, hygiene and clean drinking water don't grow as well as children who do. (Ninsiima, 2015)

Stunted children are small for their age, and fail to develop to their full physical and mental potential. The effects are permanent and affect school performance, job prospects, and life-long earning potential (Hotez *et al.*, 2006; Korpe and Petri, 2012; Spears, 2013).

Stunting perpetuates poverty and slows economic growth. Poor sanitation is an important contributing factor to child stunting, even beyond sanitation-related diarrheas. Worm infestations in the body caused by parasitic helminths rob the body of nutrients, and are one of the most significant causes of physical and intellectual growth retardation in young children (Hotez *et al.*, 2006). Helminth eggs are transmitted to the soil through poor sanitation practices and bad sludge management. The World Health Organization (WHO) considers them more hazardous than any other sanitation related disease agent—because the eggs can survive for years, and a single egg is sufficient to cause infestation (WHO, 2006).

A further sanitation-related cause of stunting is a chronic inflammation of the gut known as environmental enteropathy, which interferes with nutrient absorption. Ongoing exposure to fecal matter—for example, where young children crawl or play in soil contaminated by feces—can cause an irritation of the stomach lining which inhibits nutrient absorption (Korpe and Petri, 2012; Spears, 2013; Schmidt, 2014).

## **7.7 Poor sanitation is compromising Uganda's schools and education goals**

Because children spend a significant amount of time in and around their schools, the state of school sanitation facilities has a significant impact on their wellbeing, and provides important opportunities for entrenching life-long attitudes and behavior. Yet the dire state of sanitation facilities in many schools—dysfunctional or dirty toilets, absent handwashing facilities, no soap, dry taps, unsafe water supplies (MoES, 2016)—compromises the school environment and exposes learners to a number of health risks.

Many girls are missing school time each month when they menstruate, because their schools do not offer privacy or hygienic facilities, and poor sanitation contributes to the reasons why some drop out of school altogether.

The MoES now requires new school toilets to be lined, to enable emptying. But only 17 percent of the schools surveyed in the mapping exercise had ever been emptied (MoES, 2016) due to a lack of safe emptying options, or because the school was unable to raise the funds required. UPE and School Facilities Grants are inadequate to support decent school sanitation.

### **7.8 Regulation in line with the law is under resourced and inadequately supported by political leaders**

Uganda has excellent public health legislation with the scope to achieve good sanitation, but enforcement is comprised by weak penalties, a shortage of health inspectors able to focus on sanitation-related regulation, and interventions by politicians who allegedly do not want their voters alienated.

One area requiring particular attention urgently is regulation of landlords, who are being allowed to externalize the costs of providing no, or poor quality, toilet facilities to their tenants. Low average household incomes and severe urban housing shortages are fueling demand for cheap accommodation, and many tenants are reluctant to insist on better sanitation facilities for fear of having their rents raised. Instead many tolerate hazardous living conditions, living amidst gross pollution and dumped sludge. Even cheap accommodation needs adequate sanitation aligned to the requirements of the Public Health Act. Sanitation promotion campaigns will increasingly need to target landlords specifically, and engage local and national political leaders, to enforce existing health and building regulations more assertively.

### **7.9 Improving Uganda's sanitation is a matter of national strategic importance, yet the gravity of the challenge is not being communicated adequately to Uganda's leaders and decision makers**

Sector reporting does not adequately communicate the urgent need for increased funding. The 2006 *Improved Sanitation and Hygiene Promotion Financing Strategy* set a target of 77 percent coverage with improved sanitation in rural areas by 2015, but the Golden Indicator for sanitation coverage in MoWE's sector performance reports depicts all rural coverage as improved sanitation, instead of a small minority, and thereby profoundly understates the enormity of the remaining challenge. If sector reports claim that 79 percent of rural households now have improved sanitation, the government can be forgiven for allocating limited resources to sanitation improvement, as it appears that the remaining challenge is modest.

### **7.10 The sanitation sector needs a leader**

The sanitation sector is fragmented, and commitments to fund sectorwide collaboration have not been met. Sector roles need to be redefined in the light of the SDGs and their emphasis on safe management across the entire service chain.

It is generally understood that the MoH is the sector leader for sanitation in Uganda, but sector policy and legal documents do not specify this clearly. Sanitation needs an overall leader with the mandate and authority to call other role-players to account. It is, therefore, important that sector leadership is assigned formally, with policy documents and legislation stating clearly which ministry takes the lead on sanitation, what its role and obligations are as leader, and what the roles and

obligations of other ministries are concerning sanitation in Uganda. This clarification is particularly necessary in the light of the SDGs, as coordination and collaboration is needed across a wide range of role-players.

## 8. Recommendations

Achieving safely managed sanitation across the entire service chain will require concerted effort on all fronts. At present the levels of investment are pitifully low, with the bulk of district sanitation funding coming from the Uganda Sanitation Fund, and reaching only a minority of districts.

There is a clear need to make significant additional investments across the service delivery chain in all villages, towns, and cities. These increased investments need to be mainstreamed into the day-to-day activities of all actors and role-players, so as to sustain improved performance over the long term, and provide a conducive environment for individual projects.

Interventions need to identify and address each possible source of sanitation-related pollution, and include promotion of responsible sanitation practices, enforcement of relevant laws, and the creation of infrastructure where needed. Each settlement has different challenges, requiring different types and combinations of interventions. The uniqueness of context, practices, and outcomes requires that prioritization occurs at a local level. Grand plans that do not take adequate account of the local context will be inefficient, or even fail.

These recommendations outline interventions that should form part of an ongoing program. Certain elements of each initiative may be implemented on a project basis, but there needs to be a commitment from all role-players to longer term and sustained engagement. The job will never be finished.

The proposals are informed by representative sector costing benchmarks, but are not costed in detail. The core requirement is to make provision for increased sector funding to support a wide range of essential activities. Simply doubling current allocations off their low base would be an excellent start, with a steady increase in annual funding.

Sanitation improvement needs to be addressed at a senior strategic level within government, in view of its wide-ranging impacts on the citizens and economy of Uganda. It is recommended that the Office of the Prime Minister (OPM), responsible for coordinating the activities of all ministries, takes an active role in giving strategic direction to the sector, working in conjunction with the NSWG. The aim would be to set the direction, develop strategy, and allocate resources in a way that takes account of national priorities and aspirations, beyond the operational level of the various ministries.

The most important role for the OPM, in collaboration with the MoFPED, is to ensure that the national budget provision for sanitation is increased steadily to enable each government role-player in the sector to fulfil its mandate. In turn, the respective ministries with a sanitation mandate should lobby the OPM and MoFPED actively for sector funding. Each ministry should be able to articulate their funding needs for activities and outcomes, prioritized on the basis of evidence from monitoring and research.

## **8.1 Strengthening the sector policy environment**

### ***Explore the feasibility of targeted subsidies to support universal access to affordable services across the service chain***

Market-based approaches alone will not achieve universal access to inclusive and affordable sanitation services across the entire service chain for poor households. Some degree of subsidization will be needed, for some, for specific aspects of the service chain. This raises difficult questions as to where any subsidy should or could be applied, and at what scale.

It will be important to ensure that any change in policy is effective in targeting the area where support is needed, while minimizing perverse outcomes. Careful assessment of different possible policy instruments will be needed. As a principle, the end-user should always share some of the cost of the service, even if it is subsidized.

### ***Assess urban sanitation policy gaps***

Urban settlements need a mixed, incremental approach to sanitation improvement. Sewered sanitation is not a realistic option outside the centers of Uganda's capital and secondary cities, for reasons that include its immense capital cost, high water requirements, and limited affordability for most potential users. With few exceptions across Africa, conventional sewered approaches benefit only a small minority and leave the most needy sections unserved. Better management of non-sewered systems is a more viable, shorter route to achieving the sanitation improvements required to underpin growth and development, but this requires acknowledgement that local authorities need to play a more proactive role in driving local sanitation improvement, in line with their mandate in the 2000 Local Governments Act.

Where limited water, funding, and other constraints rule out sewerage for all, the challenge facing local authorities is to build strong sanitation service chains that support on-site sanitation. Uganda's urban residents show limited interest in connecting to existing sewers, and where the NWSC has expanded its sewer networks, the increase in connections has been very slight. This indicates that new sewer initiatives should focus primarily on serving the centers of Uganda's major cities, and perhaps new upmarket housing developments. Where feasible, decentralized treatment offer the possibility of shorter sewer networks and modular expansion as required.

Rapidly growing towns and cities, with a significant number of poor residents, will increasingly require policy guidance on how to provide effective inclusive sanitation services. A mix of service options is likely to be necessary.

The 2016 draft National Urban Policy of the MoHLD flags the critical importance of tackling urban sanitation decisively, and calls explicitly for the development of a stand-alone urban sanitation policy to inform urban sanitation strategies. This proposal suggests that the ministry is looking for guidance on how to approach sanitation in Uganda's challenging urban environments, and that urban administrations are looking for guidance too.

AMICAALL's initiative to mobilize Mayors in support of urban sanitation and hygiene improvement offers a platform for sector engagement to inform the development of this policy, and identify areas

where policy guidance is needed: in what circumstances is sewerage appropriate, and what criteria should inform public investment in sewerage?

Engaging mayors and their senior officials in discussion around their sanitation challenges and the options that are realistically open to them could help to advance their awareness of the implications of the new sanitation SDG, while providing robust input to guide the possible development of a new national urban sanitation policy. At the very least, discussion would help to strengthen awareness of the nature of the sanitation challenges in the urban sector, and the range of options for pursuing incremental improvement.

## 8.2 Measuring activities and performance in the sector

### *Track sector expenditure through the ‘chart of accounts’*

The OPM should implement measures to ensure that sanitation is given greater recognition and is elevated in status. Over and above insisting that the sector forums of the respective ministries report on their sanitation programs, efforts should be made to influence the government’s existing ‘chart of accounts’ such that they are modified to reflect sanitation-related activities budgeting and expenditure separately. This is necessary to hold the respective ministries to account in addressing their respective mandates.

### *Select performance indicators can shed light on where interventions are needed*

The MoWE is working with sector partners to develop new sector indicators aligned with the SDGs, and these should take account of the different roles and responsibilities of actors across the sanitation service chain.

Outcomes can only be achieved reliably by managing the processes that contribute to them. Well-chosen indicators can help to guide the interventions required to realize improvements across all aspects of the service delivery chain. Data gathering needs to consider which activity, event or situation should be observed; how that observation will be recorded; how it will be transmitted to a data receiving agency; how it will be captured, and possibly transmitted again; and how it will be collated and analyzed to inform reporting. Any chosen indicator needs to consider each of these steps, and assess the feasibility of collecting credible data against the chosen indicator.

## 8.3 Developing infrastructure

### *Develop additional regional sludge treatment capacity*

As urbanization ramps up in Uganda, the need for additional safe treatment and disposal facilities for fecal sludge and/or sewerage will grow, to counter unsafe dumping pollution. It is obviously not possible to build such facilities in all places that require them immediately. There is a need to develop some system of prioritization to inform where investments are made and facilities are established. While developing regional works to serve clusters of towns may offer efficiencies, they may also end up being *equally unattractive* to all tanker operators and not get used at all. Identify priority sites for developing sludge treatment works, based on evident need, not population or location.

Growth in the volumes of sludge being removed from pit latrines and septic tanks will be gradual. At what point should a treatment facility be constructed, and where should it be positioned? Too early, and there will be many white elephants for many years; too late, and significant pollution and unsafe management will have been going on for some time. Sludge handling facilities should be implemented on a modular basis where the basic facility can be created and then added to, matching demand as it grows in each location.

It is likely that there are a growing number of towns and cities where there is significant emptying of pits, with either no facility to receive sludge or the existing facilities are inadequate. There will be an increasing need for such facilities over time. Recognizing that it will not be practical to create all such required facilities simultaneously, it is recommended that an initial target of four new works per year be undertaken.

An initial provision of US\$6 million is proposed for four works. Estimated costs have been based on the actual costs for a project that is currently under way in Arua under the management of the NWSC. It is not possible to provide definitive cost estimates before project identification and prioritization has taken place, but the costs currently being incurred at the Arua project are informative. The engineers' cost estimate for this works stands at of US\$1.5 million.

#### ***Refurbish and upgrade existing waste water treatment facilities***

Poor effluent treatment performance, reflected in sector reports indicates that some of the existing works are aging and overloaded, either hydraulically or biologically or both. An ongoing program of refurbishing and upgrading existing treatment facilities is advised, based on an initial assessment of where the most urgent challenges lie. It is recommended that a start is made on the three highest priority plants, resulting in a five-year program to attend to 15 facilities. The amount provided has been based on accepted asset management principles, using costs associated with the new works at Arua.

This financial allocation should also be viewed as provision to begin a process of project identification and specification. Such refurbishment and upgrade work would include such activities as repairing retaining structures, necessary earthworks, repair or replacement of mechanical components and possibly the construction of new dams and lagoons to provide more treatment capacity. Although the specification of what will be needed can only be determined through thorough site investigation, during implementation lessons will quickly be learned on what the determining factors are in carrying out such refurbishments and upgrades. As such the cost estimates and budgets will be steadily refined as the program matures.

#### ***Expand and improve sewer networks to limit pollution***

Sewers by their nature of being items of infrastructure tend to deteriorate over time. They also flood and spill, either continuously or periodically during storm events. The extent of the pollution they cause is seldom quantified, although it may be significant, and repair and refurbishment is often neglected. Most of Uganda's existing sewers were mostly installed decades ago and there is undoubtedly a need for substantial refurbishment and upgrading of the existing sewer network.

It is not possible to quantify the extent of the required work precisely. However, often an acceptable estimate of the extent of problems can be established through discussions with the technical staff

responsible for the day-to-day operation of such systems. It is anticipated that a series of projects could be implemented over a period of five or 10 years to address the problems associated with the existing networks. Such a program should focus first on areas where the largest known levels of spillage, and hence pollution, are occurring. The focus should be on Kampala and the larger towns. Specific projects will need to be identified, and this will require some initial technical investigation of the existing infrastructure, in terms of hydraulic capacity, susceptibility to flooding, and structural integrity.

#### **8.4 Improving school sanitation facilities to support a healthy learning environment**

*Ongoing investment in the building and maintenance of school latrines should be adequately funded on a continuous basis through the MoES*

The MoES should fully fund the construction of school toilets, and provide matching finance for the emptying of pit latrines and transport of sludge to suitable disposal sites. Here there is an intersection of the 'double' public good of education and pollution.

More and better toilets are required to address service backlogs in existing schools and improve pupil: stance ratios, with increased support to schools to manage existing toilets. For the past eight years schools' construction guidelines required school latrine pits to be lined to facilitate emptying, but it is up to schools themselves to raise the funds they need to pay for emptying. The real value of the schools facilities grant has declined, and not all schools receive it.

Many learners' parents find it difficult to pay for service providers to empty full pits or construct replacement facilities. This task cannot be simply left to parents, especially those in poorer areas. When pit emptying is undertaken, it is mostly true that sludge is disposed of unsafely, usually in nearby shallow pits or trenches. It was also noted that schools soon run into space constraints for the construction of new facilities.

Available data sources should be used to identify the scale of the challenge and prioritize areas of intervention. The data should be examined at a granular level and priorities formulated based on such analysis. A suitable financial package allocated over a number of years should be designed to resolve this challenge within a five or 10 year period. Provision is made for an initial allocation of two toilet blocks at 100 schools, based on recent costs estimates obtained from the NWSC and other toilet building contractors. Each school should have at least two toilet blocks.

The construction of school toilets is often of a poor quality. It is recommended that there should be active engagement with the engineers within local government or the regionally deployed TSUs of the MoWE. The skills of these professionals should be used to ensure that the construction of new toilets, maintenance, and sludge handling are carried out to acceptable technical standards.

The repeated reports of how principals, teachers, parents, and pupils struggle to finance the O&M requirements of school toilets was compelling and should not be ignored. It is recommended that ongoing annual provisions be made to assist each school with the costs of the inevitable maintenance requirements. Good asset management principles suggest that an annual allocation of around 10 percent of the capital value of an installation is a reasonable amount.

## **8.5 Using scheduled, co-funded emptying of facilities at schools and hospitals to provide viable business opportunities for pit emptiers beyond Kampala**

Emptying of pits at institutions is the low hanging fruit for developing market-based approaches to desludging beyond Kampala, where the vast majority of existing desludging service providers are based. Emptying of pits at institutions is qualitatively and quantitatively different from emptying the pits of poor households, and schools and hospitals offer an attractive entry point for entrepreneurial new entrants wanting to learn the business and develop expertise in logistics and contract management. Schools in particular offer attractive work packages—large volumes at regular intervals—and offer a robust basis for gearing up to serve a more diverse clientele.

## **8.6 Reducing OD through provision of additional public toilets**

A range of informants reported high levels of open defecation in secondary towns and cities, which they attributed to the high number of day visitors to those towns who were not able to find a nearby public toilet, or found the toilets fouled, or chose not to use existing facilities because of the price charged per use, usually UGX 200.

The MoWE currently funds the construction of public toilets, and district administrations are able to use their District Water and Sanitation Conditions Grants to fund public toilet construction, but it seems demand outstrips the funding currently available. Where high levels of open defecation are observed, the relevant local authority should be able to apply for funding to build additional public toilets, attend to repairs, and desludge them.

The primary objective of providing public toilets should be to offer public conveniences that are alternatives to open defecation, rather than to use public toilet concessions as a source of income for the local authority. Where toilets are constructed and leased to private sector operators, some degree of subsidization of the operating costs could be considered to maintain user tariffs at levels that do not deter use.

The absence of public toilet facilities for buses on many routes often results in significant fouling and pollution when vehicles stop alongside the road to allow travelers to relieve themselves. To address this matter, local government should be provided with resources to develop and maintain roadside toilet facilities along major transport routes. These toilets should be planned and sited in consultation with the Uganda Roads Agency and the transport companies (and their associations) to ensure that they are positioned in places that are convenient, safe from a traffic perspective, and serviceable by the responsible local government body.

Expanded investment in public toilets should be viewed as an ongoing program, with an initial allocation sufficient to provide three toilet blocks in 20 towns and similarly 20 roadside facilities of two blocks each. For all of the toilet building programs described above, a responsible approach to the creation of new infrastructure requires provision for ongoing operation and maintenance. As more of such facilities are created, the need for resources for O&M will similarly increase.

## **8.7 Promoting ongoing sanitation improvement**

### ***Expand CLTS-type approaches to all districts, with funding support for annual follow-ups***

Sanitation approaches based on mobilizing and motivating households to improve their own facilities remain Uganda's best available option for large scale change. These are most effective when a layered multifaceted approach is used, like Mbarara's ODF Plus team does: leadership by a committed sanitation champion, ideally the subcounty chair; triggering that links problem behaviors to local sanitation and hygiene related health risks; a catalog of options to inspire choice and customization, supported by a supply chain of affordable local materials and trained builders; an emphasis on quality improvements that last, particularly a washable slab that remains odor-free; a focus beyond the latrine to build pride in broader homestead improvement, with a drying rack, handwashing facilities; and a willingness to enforce compliance with the law and local bylaws to prevent backsliding.

Sustained improvements require ongoing follow-up to maintain ODF status. Simply moving from village to village with no follow-up is likely to result in short-term improvements and regression once the support is withdrawn, particularly in areas where the vast majority of residents do not already have good sanitation.

The budget for a scaled-up CLTS initiatives has been based on Uganda Sanitation Fund norms, plus provision of a further 20 percent of the triggering cost for continual follow up.

Planning for five years to address all 112 districts in the country translates to a budget of US\$5.3 million for the first year of implementation. As more villages are triggered there will be a growing need for follow-up support, with this resulting in an ongoing requirement of US\$4.4 million.

### ***Develop and implement sanitation promotion approaches relevant for urban residents***

Ongoing sanitation promotion is needed to spur urban sanitation improvement, with a broad range of messages to target different constituencies (owner-occupiers, tenants, landlords), behaviors, and information needs.

Beyond promoting ODF neighborhoods and investment in facilities, messaging should promote safe pit emptying, provide information on where to find safe desludging service providers, and should alert residents that disposing of solid waste in pit toilets make pit emptying more difficult and probably more expensive.

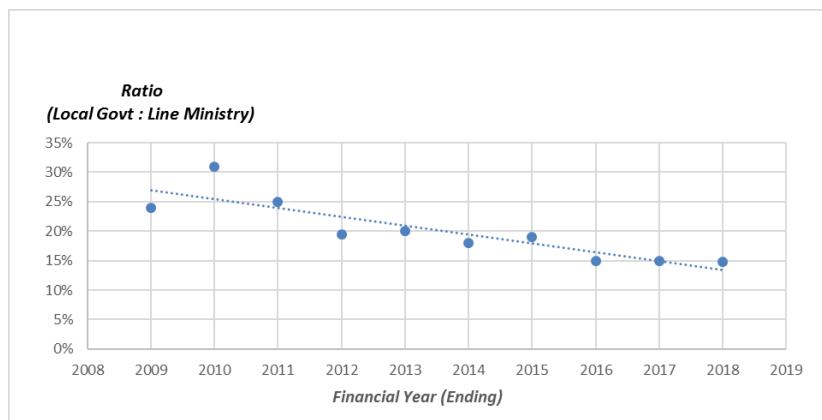
There should be ongoing programs of awareness for the general public in towns through campaigns using various media (particularly radio). The awareness campaigns should provide information on the elements of good practice in an urban context, and associate good sanitation practices with successful high status people, making the issue one of aspiration rather than of compliance.

## 8.8 Enlisting financial support for local government's sanitation role

### *Increase sanitation grant funding to local government*

Central government transfers to local government warrant a significant increase to support sanitation improvement. Many of the issues addressed elsewhere in these recommendations become the operational responsibility of local government (for example, public toilets, fecal sludge management for poor households and public institutions, sanitation messaging, enforcement of the law, and so on). As Figure 13 illustrates, the relative share of the national budget to local government has been in decline for some time, reducing by arguably half over a 10-year period. It was already noted that local governments are to a great degree dependent on fiscal transfers from the national budget for their financial survival and have very limited scope to raise their own revenue.

It is evident that the ability of local government to play a role in improved sanitation practices must be supported and improved. Serious consideration should be given to increasing the value of grants to local governments to enable them to promote sanitation improvement and provide and/or regulate sanitation services.



**Figure 13: Funding of local government (MoFPED, Sector Budget Framework Papers, various years)**

The quantum of resources required would need to be informed by an analysis of the activities and budgets of the individual organizations. However, the basic observation is that funding levels to this important arm of government have been in decline for some time, in a context where its ability to raise additional revenue itself is severely constrained. This needs to be reversed. What is required is a commitment to turning around the trend of dwindling financial resources. It is recommended that for the foreseeable future the budgets be steadily increased at a rate at least equivalent to the decline that has been observed over the past decade. This increase in funding should be linked to clear programs and outcomes that will be progressively addressed, especially improvements in sanitation practices. It is strongly recommended that the resources required for local government to perform this important role be given consideration at the highest levels.

### *Allocate increased funding to support complementary services that support sanitation improvement*

Sanitation management is compromised where solid waste management services are inadequate, because in practice solid and liquid waste streams tend to mix, with dire consequences for public health. Equally, poorly managed stormwater flows raise the risk of flooding, with severe health and safety implications where pit latrines predominate. A number of other opportunities exist to

improve the sanitation outcomes through supporting local governments to better provide the services it is mandated to deliver. These include:

- Improved solid waste management through more effective collection services.
- Improved stormwater systems.
- Provision of fecal sludge management services in poor areas where a market-based approach is not viable to provide safe and affordable services (see below).

#### *Make better decisions based on evidence from innovation and knowledge projects*

Many exciting innovation projects are being undertaken by a range of NGOs and universities to develop new methodologies and technologies to support sanitation improvement. These should be encouraged and those that show promise should be supported. There is also a need to continually build on the knowledge in the sector. From time to time there will be a need for better understanding of aspects of the sector from financial and technical perspectives. Research and studies to improve such understanding and gain insights that may influence policy and action should be supported. Specifically:

1. There is currently a pressing need to understand the consequences of 'market failure' in the sector. In a relatively poor country such as Uganda there will undoubtedly be circumstances in which a market-based approach that requires households and the private sector to address all of the services required, will not suffice. This begs two questions:
  - How big are the consequences of the inability of the market approach to ensure affordable safe desludging services to all citizens? How much pollution is occurring simply because people cannot afford the services of formal pit or CPEs?
  - What are the implications of subsidizing the gap between what people can afford and what service providers want to charge? What level of subsidy might be needed in different contexts, how might this vary in different contexts, and how great is the risk of perverse outcomes that distort the market?
2. There is also justification for conducting some small scale pilot projects on subsidized emptying in areas where 'market failure' is observed. Either local governments or the NWSC should be funded to provide a service to those who cannot afford that which is available from the private sector. It would be essential that such a project be carefully designed and all efforts made to ensure that it does not do damage to the existing market for services. Ideally such a project should be undertaken in an area where there is a definite need for emptying and where it is perhaps already taking place in an unsafe manner, perhaps utilizing informal emptying techniques. Of course, it would also be necessary that a suitable disposal site is available.
3. The NWSC's investments in extending existing sewer networks has been met with limited enthusiasm by customers. The NWSC corporate plan (2015–2018) reports that it intends to increase the potable water network by 800 km per annum and connect 28,000 new customers per year (and this is probably being exceeded). On the other hand, the sewerage

extension program is much less ambitious with only 20 km of extension per year being planned, with envisaged connection of 320 new customers. Anecdotal evidence suggests widespread reluctance among those with septic tanks to connect to sewers, to avoid the effective doubling of their water bills. Likewise, many people collect rainwater to flush toilets with, thus not increasing their water consumption and hence bill, but meanwhile enjoying the service—thus leaving the NWSC with an increase in operational responsibility that does not contribute to cost recovery. There is a need to understand the economics of these scenarios, to better inform incentives for households and businesses to connect to the sewer system. There will be no significant increase in demand for sewerage, or investment in sewerage in Uganda's cities, if the current situation persists.

4. The complexity of the fecal sludge service chain implies that the identification of meaningful indicators that facilitate better decision making and track progress towards achieving the SDGs is not a trivial matter. Most often, indicators are identified without consultation with staff involved in day-to-day operations, which results in specification of measurements that cannot be practically achieved. It is recommended that all the ministries and organizations participating in the MoU participate in a study that identifies indicators that satisfy the following criteria:
  - The full service chain is addressed (containment, emptying, transport, disposal).
  - They inform the outcomes required by the SDGs.
  - They inform decision making on improved practices.
  - They can be practically measured and recorded in a way that is representative and meaningful.

## 8.9 Ensuring sector capacity development

### *Build sector capacity to drive sanitation improvement across the service chain*

A comprehensive and integrated national capacity building program needs to be developed that gives particular emphasis to supporting implementation by local government of its sanitation responsibilities. Sanitation is mainly given low priority in local government because of competing political, financial, and resource priorities. The rural sanitation initiatives that district local government implements focus strongly on CLTS, but there is a shortage of trained CLTS professionals at district, subcounty, and community level. In most districts, government officials from a range of local departments perform the program outreach, social mobilization, and promotional activities, with little training in CLTS and virtually none in sanitation marketing.

Few local government officials have any awareness of the implications of the SDGs for fecal sludge management, and are not currently equipped to guide, lead or implement service delivery improvements in line with the commitments Uganda's government has made in relation to achieving universal access to sanitation across the entire service chain. An urgent priority is to equip district and town administrators and politicians to understand the nature of their new responsibilities, using the SFD, to identify critical challenges in local fecal sludge management. This in turn will require rapid training of a new cadre of multidisciplinary sanitation professionals who are equipped to guide

and advise local authorities on how to tackle the needs they identify, using locally appropriate strategies and technologies for better fecal sludge management.

As an interim strategy, all district water officers, district health officers, assistant district health inspectors and health assistants should be encouraged and incentivized to take advantage of a series of new open-access e-learning programs available online for free. The Massive Open Online Course (MOOC) series ‘Sanitation, Water and Solid Waste Development’ offers four modules that are directly relevant to Uganda’s local authorities:

- Municipal Solid Waste Management in Developing Countries.
- Planning and Design of Sanitation Systems and Technologies.
- Introduction to Household Water Treatment and Safe Storage.
- Introduction to Fecal Sludge Management.

The courses can be accessed anytime at <http://www.eawag.ch/en/department/sandec/e-learning/moocs/>.

Excellent sanitation-related research is being conducted at the tertiary level, notably by academics at Makerere University across a range of disciplines—public health, pediatrics, urban geography, civil engineering, and so on. The challenge is to find ways to share this research in undergraduate and postgraduate programs, and develop well-rounded sanitarians who are able to drive sanitation sector programming and applied problem-solving, across a range of contexts.

## 9. Action Plan and Cost Estimate

The sanitation sector in Uganda is diverse; there are many initiatives and actions being undertaken, and many contextual considerations that result in qualitative differences. It is not possible here to list each and every one of these and describe a course of action to achieve improvement. That is a task that must be executed at a local level by people who have deep knowledge of the specific contexts. The recommendations presented here attempt to begin a process of mobilizing the resources required for such local decision making and implementation.

The budget below takes into consideration what may realistically be mobilized over a five-year period.

### 9.1 Cost estimate

The cost estimates outlined below have been based on a number of benchmarks gathered from both informants within Uganda and from international experience. The budgets have been deliberately structured as seed funding for an ongoing program of action rather than as stand-alone projects. This is in keeping with the ‘systems thinking’ approach that has been adopted in this assignment. The objective must be to build a firm base of ongoing initiatives that are aligned with the objectives outlined in the SDGs and Vision 2040, as stated in national development plans.

Many of the specific elements within each line item can, and should be, implemented as projects in their own right. It is, however, important to continually consider each of the interventions from the perspective of how they integrate into the existing system that is delivering service. Failure to

consider the impact on the larger system can result in interventions being white elephants or, even worse, severely distorting the existing system, giving rise to undesirable outcomes.

This cost estimate has also given some consideration to what may be practically available in the way of additional resources that could be deployed. Many more activities could be noted at ever more granular levels of detail, but the recommendations listed here focus on issues that the professional team felt were the most pressing, and where there was opportunity to achieve the most significant impact. There would be no value in specifying excessively large amounts that might be required over time when planners and practitioners are constrained by what is practically possible in terms of increased resource allocation.

**The amounts presented represent the recommended investment in the first year of execution of the various programs.** These amounts should be progressively increased over time, allocations should be adjusted to continually strengthen and broaden the initiatives. The development of initiatives should be based on feedback on the successes and failures that are observed.

These recommendations and seed funding cost estimates should be viewed as a ‘message to the sector’. They are not targeted at any single ministry or organization. The coordination of activities and the funding thereof will be part of the role that emerges from a strategic view of sanitation being adopted at the highest levels within the GoU.

**Table 2: Action plan and cost estimate**

Nº	List of Actions	Description	Category	Responsibility	Cost Est (UGX per yr)	Cost Est (USD per yr)
1	The Office of the Prime Minister and Ministry of Finance Planning and Economic Development take responsibility for ensuring increased resource allocation to the sanitation sector.	Sanitation is elevated to an issue of national importance.	Policy	OPM / MoFPED	part of ongoing activities	part of ongoing activities
2	Refurbish and upgrade existing WWTW and Sludge Receiving Facilities	A design check and evaluation of performance of each existing facilities is carried out and the need for upgrade and a programme of refurbishment and upgrade is implemented based on priorities identified against the probability and consequence of ongoing pollution.	Technical / Financial	MWE / NWSC	22 billion	6 million
3	Build new WWTW and Sludge Handling Facilities	New treatment facilities are constructed on the basis of prioritisation and careful consideration of positioning and design to achieve maximum benefit for each investment.	Technical / Financial	MWE / NWSC	27.5 billion	7.5 million
4	Review policies and strategies applicable to sewer sanitation are revised	The existing policy provisions are revised to better align with the de facto sanitation practices in urban areas. Analysis focusses on the current lack of commercial viability and the real ability to enforce practices on residents, particularly the poor.	Policy	MWE / NWSC	1.1 billion	0.3 million
5	Expand and upgrade existing sewer networks B6	Extensions are made to existing networks based on expressed need and capacity upgrades are implemented that are aligned to current overloading an anticipated demand.	Technical / Financial	NWSC	25.7 billion	7 million
6	Develop new sewer networks	New sewer networks (and possibly decentralised treatment facilities) are developed in areas where commercial viability could be realistically achieved.	Technical / Financial	NWSC	18.3 billion	5 million
7	Accelerate school toilet building programmes	Additional resources are made available to build more toilets at those schools identified as priority.	Financial	MoES	16.5 billion	4.5 million
8	Subsidise the operation, maintenance and sludge management of school toilets.	A subsidy programme is designed and implemented to provide assistance to schools to enable them to effectively manage the functionality of toilets. This subsidy is applied in a manner that primarily supports schools in poorer and lesser resourced areas. This programme is used to support the emergence of effective pit emptying service providers.	Financial / Operational	MoES / MoFPED	36.7 billion	10 million
9	Accelerate building of public toilets in urban areas and rural growth centres	Public toilets are built at a greater rate in areas where open defecation is problematic due to the lack of alternatives for day visitors.	Technical / Financial	LG / MWE	16.5 billion	4.5 million
10	Subsidise operation, maintenance and sludge management at public toilets.	The pricing of the service is reviewed and subsidised so as to not exclude the poor. User fees (and subsidies	Financial / Operational	LG / MoFPED	36.7 billion	10 million

Nº	List of Actions	Description	Category	Responsibility	Cost Est (UGX per yr)	Cost Est (USD per yr)
11	Build roadside public toilets.	Funds are made available for the building, O&M and sludge management of road side public toilets where open defecation is problematic due to the lack of alternatives for people traveling on national roads.	Technical / Financial	LG / MoFPED	16.5 billion	4.5 million
12	Scale up sanitation promotion to include the whole country.	Additional funding is made available to expand the sanitation messaging (CLTS/HI/ODF+) programme.	Financial / Operational	MoH / MoFPED / DPs / NGOs	44 billion	12 million
13	Run ongoing media campaigns to encourage good sanitation behaviour and practice	A long-term media campaign is developed and implemented to inform people of the benefits of improved sanitation practices and the actions that each individual and household can take to support such outcomes. The message to include information on containment infrastructure, emptying and transport practices and personal habits and behaviour.	Financial / Operational	MoH / OPM / MoFPED	11 billion	3 million
14	Encourage innovation and research to strengthen sanitation	There is a need to continually support innovation, invention and discovery within the sector. Breakthrough thinking, technology and systems can make a big difference. This should be supported on an ongoing basis.	Technical	OPM / MoFPED / DPs / NGOs	11 billion	3 million
15	Strengthen solid waste management	Additional funding is provided to Local Government so that they can more effectively manage the challenges created by the nexus of solid waste and fecal sludge management, especially where they overlap and the become indistinguishable from each other.	Financial / Operational	LG / MoFPED	25.4 billion	7 million
16	Review local government by-laws to improve alignment of solid waste and fecal sludge management	A review and amendment of the policies and legal provisions for these two, often overlapping, services.	Policy / Legal	LG / MoH / MWE	1.1 billion	0.3 million
17	Improve storm water systems	Areas were storm water arrangements are adversely affecting sanitation outcomes are identified and addressed.	Technical / Financial	LG	25.4 billion	7 million
18	Subsidise fecal sludge management.	Explore and implement subsidy mechanisms to improve safe handling of fecal sludge in containment, emptying, transport and treatment implemented. A market based approach will never reach every household. This should be approached with care so as to not result in irreversible perverse outcomes.	Financial / Operational	LG	36.7 billion	10 million
19	Develop spatial plans for urban settlements	At the root of many of the greatest sanitation challenges is the rapid un-ordered growth of settlements. The development of spatial plans in some of the most rapidly urbanising areas should be supported as a first step in alleviating this problem	Technical	LG	3.7 billion	1 million

Nº	List of Actions	Description	Category	Responsibility	Cost Est (UGX per yr)	Cost Est (USD per yr)
20	Provide funding support to enable local authorities to play a more active role in monitoring sanitation practices and outcomes in urban areas. This will also include enforcement of the law, where appropriate.	Local government is at the coal face of achieving good sanitation outcomes. Their role in the management of solid waste and fecal sludge should be adequately funded to enable them to deploy the necessary human resources to achieve these objectives.	Financial	LG	18.3 billion	5 million
21	Build sector capacity to plan and manage sanitation improvement, especially in urban areas	Sanitation improvement requires the development of multi-disciplinary programs to equip urban managers and technical professionals address the diverse sanitation challenges posed by rapid urban settlement.	Policy / Technical / Operational	DLUDH / MWE / MoH / DPs / NGOs	18.3 billion	5 million
22	Provide support for engagement on urban sanitation policy improvement between Mayors, NLUDH and relevant roleplayers	Provide supporting resources for dialogue on urban sanitation policy between Mayors, NLUDH and relevant roleplayers, with facilitation by AMICAAL	Policy	DLUDH / MWE / DPs / NGOs	1.5 billion	0.4 million
				Total	400 billion	110 million

## Appendices

### Appendix A: Informants

	<b>Name</b>	<b>Designation</b>	<b>Organization</b>
1	Ateker Charles	Business Manager, NSWC	NWSC
2	Zimula Hassan	For District Health Inspector, Wakiso	Wakiso District
3	Martha Naigaga	Sanitation Coordinator	MoWE
4	Galabuzi Isaac	District Water Officer	Wakiso District
5	Tusingwire Stephen	Sr. Environment and Sanitation Officer	WSDF, Central
6	Kawuma Mesula	District Information Officer	Wakiso District
7	Tumusiime J. B. Bamuturaki	District Chairperson	Mbarara District
8	Esoku Curthbat	Chief Administrative Officer	Mbarara District
9	Maseruka Umar	District Health Inspector	Mbarara District
10	Ahimbisiibwe Gabriel	District Education Officer	Mbarara District
11	Tumusiime Godfrey	For Mayor, Mbarara Municipality	Mbarara District
12	Balyemerye Simon	For Town Clerk, Mbarara Municipality	Mbarara District
13	Musota Richard	Team Leader	Victoria Water Management Zone, Mbarara
14	Mutaawe Ibrahim	For Team Leader, Upper Nile Water Management Zone	Lira District
15	Mucunguzi Joseph	District Water Officer	Mbarara District
16	Wandawa Patrick	Public Health Specialist	TSU8
17	Barigye Jolly	Team Leader	TSU8
18	Wanok Harold	Environmental Health Officer	MoWE
19	Trinah Kyomugisha	Environmental Health Officer	MoWE
20	Walusimbi Ibrahim	Manager, NWSC	Lira District
21	Ogwang Veve	Mayor	Lira Municipality
22	Asaph Abirebe	Town Clerk	Lira Municipality
23	Eng Godfrey Byarugaba	Team Leader	TSU2
24	Pule Johnson	Team Leader	Upper Nile Water Management Zone
25	Richard Mugolo	Chief Administrative Officer	Lira District
26	Opio Nelson	Assistant District Health Officer, Environmental Health	Lira District
27	Omoko Hudson	District Water Officer	Lira District
28	Bua Milton	District Education Officer	Lira District
29	Walugendo Suleiman	Representative for Uganda Muslim Rural Development Association	Bugiri District
30	Habyarimana	Private Operator, Water Supply	Kibuku Town
31	Lwanga Edward	Town Clerk	Mbale Municipality
32	Demme Fred	District Water Officer	Mbale District
33	Mayobi Ayub	District Health Inspector	Mbale District
34	Walakira Paul	Chief Administrative Officer	Mbale District

35	Kato Paul	Water and Sanitation Development Facility	Mbale District
36	Opira Rita	TSU 4	Mbale District
37	Mafabi Zandy	Mayor, Mbale Municipality	Mbale District
38	Makayi Michael	District Education Officer	Mbale District
39	Janka Yacob	WASH Specialist	GIZ
40	Enyong Emmanuel	Health Assistant	Buhanika Subcounty, Hoima District
41	Busobozi Francis	Acting Town Clerk	Kigoryoba Town Council, Hoima District
42	Bakarunga Richard	Health Inspector	Kigoryoba Town Council, Hoima District
43	Katusabe John Baptist	Acting Town Clerk	Karogo Town Council, Kabarole District
44	Mwiramubi Moses	Town Clerk	Mugusu Town Council, Kabarole District
45	Aniku Walter	Councilor	Rhino Camp Town Board
46	Jandia Steven	Councilor	Rhino Camp Town Board
47	Achidri Geofrey	Town Clerk	Rhino Camp Town Board
48	Mawa Patrick	Subcounty Chief	Vurra Subcounty (Ovisioni Town Board)
49	George Odong	Trinity Clinic Proprietor	Opit Town Council, Gulu District
50	Ojok Charles	Local Council 1 Chairman, Arwot Omia village	Opit Town Council, Gulu District
51	Awori Richard	Latrine Mason	Palenga Town Council
52	Nsungwa Jesicca	Acting Commissioner Community Health	Ministry of Health
53	Kyomuhangi Julian	Asst. Commissioner, Environmental Health	Ministry of Health
54	Doreen K. Wandera	Executive Director	UWASNET
55	Musinguzi Francis	Country Director	Water Aid
56	Twesige Titus	Executive Director	AMICAALL
57	Mukasa Augustine	WASH Loan Manager	Post Bank (Kampala)
58	Disan Ssozi	Commissioner Budget	Ministry of Water and Environment
59	Tumwesigye Isaiah	Deputy Town Clerk	Kisoro Town, Kisoro District
60	Eng. Allan Kakwezi	Kisoro Area manager	National Water and Sewerage Corporation
61	Natkunda Hilda	Health Assistant	Bunagana Town Board
62	Bakesima Joy	Deputy Mayor	Katuna Town, Kabale District
63	Sande Eric	Town Clerk	Katuna Town, Kabale District

65	Oduke Ivan	APO Hotel Manager	Muhanga Town Council, Kabale District
66	Byarugaba Paddy	Town Agent	Muhanga Town Council, Kabale District
67	Kitoko Simon	Health Assistant	Muhanga Town Council, Kabale District

## **Appendix B: Urban Leaders' Declaration on Sanitation and Hygiene**

**Adopted by urban authority leaders at the 5<sup>th</sup> Annual Urban Leaders forum  
on November 9, 2016**

### **Preamble**

We, the Mayors and chairpersons of urban authorities in Uganda together with civil servants, academics, civil society, development partners and the private sector at the 5<sup>th</sup> Annual urban leaders forum convened by AMICAALL Uganda Chapter in Kampala, November 10<sup>th</sup> – 11<sup>th</sup> 2016:

*Recognizing* that while an estimated 84.6% people living in urban areas in Uganda gained improved sanitation in 2016, the level of progress has not kept pace with demographic change of 5.9% urban population growth; many urban authorities do not have adequate leadership, financial and human resources to implement existing policies, do not build, manage or maintain sanitation systems and services, or create the large-scale hygiene behavior change;

*Mindful* that an estimated 16% of people living in urban areas do not have access to improved sanitation and 10% of Ugandans still defecate in the open;

*Noting* that this lack of access to improved sanitation together with poor hygiene practices result in a huge burden of disease and that the associated economic, human, social, health and environmental costs are a major burden on urban authorities ;

*Reaffirming* the human right to safe drinking water and sanitation for all;

*Welcoming* the aspiration of the Uganda's Vision 2040 and Sustainable Development Goals which include an explicit target to

"By 2030, achieve access to adequate and equitable sanitation and hygiene for all and an end to open defecation, paying special attention to the needs of women and girls and those in vulnerable situations"

Committing to integrating these in urban policies and plans;

**Achieve universal access to adequate and sustainable sanitation and hygiene services and eliminate open defecation by 2020.**

To realize this vision our urban authorities commit to:

1. Focus on the poorest, most marginalized and unserved aimed at progressively eliminating inequalities in access and use and implement national and local strategies with an emphasis on equity and sustainability;
2. Mobilize support and resources for sanitation and hygiene to disproportionately prioritize sanitation and hygiene in development plans.
3. Ensure strong leadership and coordination at all levels to build and sustain governance for sanitation and hygiene
4. Ensure inclusive, safely-managed sanitation services and functional hand-washing facilities in public institutions and spaces
5. Progressively eliminate untreated waste, encouraging its productive use
6. Enable and engage the private sector in developing innovative sanitation and hygiene products and services especially for the marginalized and underserved;

We further call on:

1. *All people living in urban areas*, especially the youth, women and men to utilize and maintain sanitation and hygiene services with propriety and dignity;
2. *Urban authorities to prioritize* and facilitate adequate resourcing for sanitation and hygiene by mobilizing dedicated, substantive new sources of financing;
3. *Urban authorities to facilitate* the establishment and management of systems and processes for performance monitoring and accountability against the urban leader's declaration;
4. *Development partners to increase* their support to government led efforts for universal access to sanitation and hygiene and to match this financial support with responsible and accountable engagement.

And in recognition of this we make this declaration in Kampala, Uganda on the 9<sup>th</sup> November, 2016

Signed by .....

## Appendix C: Policy and Legal Framework of Sanitation in Uganda

Uganda has a strong policy and legal framework that supports sanitation. Sanitation is enshrined in Uganda's Constitution (1995) and is directly or indirectly impacted by various Acts, regulations, and policies governing the implementation of sanitation, which are shown in the table below.

### Laws, regulations and policies influencing the implementation of sanitation in Uganda

Law	Purpose or relevance to sanitation
1 The Constitution of the Republic of Uganda 1995, Cap. 4 (Article 39)	Every Ugandan has a right to a clean and healthy environment.
2 Public Health Act (2000), Cap. 281	The Public Health Act aims to consolidate the law regarding the preservation of public health. It sets out the framework for regulation of the pollution of the environment to detrimental limits which can be risky to the health of the population of Uganda. The Public Health Act is particularly relevant to the implementation of hygiene and sanitation activities, and particularly the enforcement of standards.
3 Sanitation- and waste-related bylaws	Each local government is supposed to make its own sanitation ordinances and bylaws, which have to be approved by the local council and checked by the solicitor general to ensure consistency with other laws.
4 Water Act (1997), Cap. 152	The Water Act provides for the use, protection, and management of water resources and supply; to provide for the constitution of water and sewerage authorities; and to facilitate the devolution of water supply and sewerage undertakings.
5 Sewerage Regulations (Statutory Instrument 5 of 1999)	This statute applies to sewerage areas and specifies requirements for emitting trade waste into sewerage works. It also deals with applications to construct or extend private sewer works.
6 Water (Waste Discharge) Regulations, 1998	These regulations set out the procedure for seeking permission to discharge effluent or waste onto land or into the aquatic environment. Industries have called for revision on the grounds that the regulations are too stringent.
7 Local Government Act (1997), Cap. 243	The Local Governments Act defines roles for different levels of government in provision and management of water and sanitation related activities. The Act specifies functions and services for central government, district councils, urban councils and those to be devolved by the district council to lower local government councils. The provision of water and maintenance of facilities is a role of District Local Councils in liaison with the lead ministry and the relevant line ministries.

8	National Environment Act (1998), Cap. 153	The Act provides roles and mandates for the management of the environment and natural resources. As a lead agency in the water sector, the MoWE/Directorate of Water Resources Management (DWRM) has a shared responsibility with the National Environmental Management Authority (NEMA) for: water quality standards; standards for discharge of effluent into water; limits on the uses of lakes and rivers; management of riverbanks and lake shores; restriction on the use of wetlands; and management of wetlands.
9	National Environment (Waste Management) Regulations (Statutory Instrument 153-2)	Environmental legislation is managed and enforced by NEMA. The law defines “waste” as any matter prescribed to be waste, and any radioactive matter, whether liquid, solid or gaseous that is discharged, emitted or deposited into the environment in such volume, composition or manner as to cause an alteration of the environment. Clause 6 of the law states that “a person intending to transport waste shall apply to the authority for a license.”
10	Land Act (1998), Cap. 227	The Land Act draws from the Constitution of the Republic of Uganda (1995) and vests all land in the citizens of Uganda to be owned in accordance with customary, freehold, <i>mailo</i> , and leasehold tenure systems. This implies that both government and private owners of land can set up facilities on the land which they occupy and own. Land tenure issues are critical to the development of large water and sanitation infrastructure. Any location of a water and sanitation project must respect the proprietary rights of the land-owner or occupier, as protected by law.
11	Public Finance and Accountability Act (2003)	The Public Finance and Accountability Act (2003) provides for the development of an economic and fiscal policy framework for Uganda; to regulate the financial and management of the government funds; to prescribe the responsibility of persons entrusted with financial management in the government; to provide for the audit of government state enterprises and other authorities of the state; and to provide for other connected matters. In line with this Act, implementers of WASH are required to follow sound financial management and accountability procedures.
12	Public Procurement and Disposal of Public Assets Act (2003)	This Act provided for the establishment of the Public Procurement and Disposal of Public Assets (PPDA) Authority. The Act defines the procuring and disposing entities, which comprise: an accounting officer, contracts committees, a procurement and disposal unit, a user department, and an evaluation committee.

		Procedures for resolving disagreements between the different entities are set out in the Act, which also sets out the framework in which the Public Procurement and Disposal of Public Assets (PPDPA) Authority operates.
13	The Kampala Capital City Act (2010)	The Act gives the KCCA the mandate to provide public health and safe sanitation in the communities and allows the KCCA to enforce ordinances and byelaws made by the Authority.
14	National Health Policy (1999)	Emphasizes prevention through primary health care including sanitation and hygiene.
15	Environmental Health Policy (2006)	Spells out the roles and responsibilities for sanitation, in line with the sanitation Memorandum of Understanding (MoU) signed in 2001 between the Ministry of Water and Environment, Ministry of Health, and Ministry of Education and Sports. The policy takes into account the adoption of sectorwide approaches in the development of the health and water sectors and the decentralization of governance and service delivery, with local governments responsible for setting their own development and spending priorities.
16	National Sanitation Policy (1997)	<p>The purpose of the Sanitation Policy is to guide and facilitate individuals, institutions, community leaders of all kinds and all levels, families and communities to contribute to achieve optimal, sustainable sanitation standards and thereby improving their quality of life and eradication of poverty.</p> <p>The objectives of the policy are;</p> <ul style="list-style-type: none"> <li>• To promote safe disposal of human excreta by any appropriate means.</li> <li>• To promote proper management of solid and liquid wastes.</li> <li>• To enhance the development and maintenance of safe water chain.</li> <li>• To promote IEC for behavior change concerning sanitation.</li> <li>• To promote the mobilization of resources for sanitation.</li> <li>• To provide a framework for development of appropriate laws/regulations and an institutional framework for sanitation promotion.</li> </ul>
17	National Gender Policy (1997)	Provides for equal participation in development activities including water supply and sanitation.
18	National Water Policy (1999)	Promotes an integrated approach to managing the country's water resources sustainably.
19	National Urban Policy Draft (2016)	Policy Statement 19 calls for the implementation of an effective and sustainable waste management system by formulating and implementing an Urban Sanitation Policy; as well as implementing an Urban Solid Waste Management Strategy, among other strategies.

20	National Sanitation Guidelines (2000)	<p>The National Sanitation Guidelines is one of the support manuals for the use of district and urban councils in planning and promoting community-managed sanitation and hygiene in Uganda. The guidelines were prepared by the Ministry of Health for use by implementers, promoters, and supporters of programs on sanitation and hygiene within the country. The objective of the guidelines is to provide a guide for local authorities and to promote a standardized approach for sanitation and hygiene promotion by the different institutions and projects involved in the sector.</p>
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## Appendix D: Key Role-Players in the Sector Currently

Household	Practices behaviors that support or compromise health and hygiene; Funds and develops sanitation facilities for their own use; and Uses and maintains household sanitation facilities.
Local government	Develops bylaws; Implements/operationalizes the programs of the MoH, MoWE and MoES (environmental health officers, VHTs, water officers, etc); Ensures good sanitation practice in municipalities, towns, and rural areas in line with the Public Health Act, Local Government Act, and other legislation; Carries out inspection of sanitation practices; and Implements action against transgressors of the law.
Office of the Prime Minister	Provides overall management and monitoring of the business of all government ministries.
MoFPED	Determines budget allocations to align with government priorities.
Ministry of Water and Environment	Develops policy on sanitation, as far as it relates to sewerage and waste treatment; Provides funding to local government to support the implementation of CLTS and Home Improvement Campaigns in rural areas; Plans, funds, and administers the construction of wastewater treatment works (WWTW) which are handed over to the NWSC on completion; Plans funds and administers construction of public toilets (which are handed over to local government on completion); Provides technical support through placement of staff in regional technical support units and WSDFs; and Collects reports and data on water and sanitation sector performance.
Ministry of Health	Develops policy on health, including preventative and environmental considerations; Provides funding to local government to support the implementation of CLTS and Home Improvement Campaigns in rural areas; Manages the current program of CLTS funded through the Uganda Sanitation Fund; Implements clinical primary health care programs (immunization and so on); and Collects reports and data on health sector performance.
Ministry of Education and Sports	Develops education specific policy to support learning; Ensures adequate infrastructure facilities in schools (has no funding for toilet maintenance and/or replacement); Funds the construction of toilets as part of the total package when schools are built; Sets standards for sanitation facilities in schools; and Provides funding to schools in support of Universal Primary and Secondary Education.

Kampala Capital City Authority	Develops bylaws; Provides limited cesspool emptying services; Ensures good sanitation practice in the city; Carries out inspection of sanitation practices; and Implements action against transgressors of the law.
National Water and Sewerage Corporation	Provides sewerage services to some residents in Kampala and 15 other towns; Constructs extensions to sewer networks; Constructs WWTW; Operates and maintains WWTW, receiving both sewerage and sludge from emptied septic tanks and pits; and Operates vacuum tankers in a few towns to provide septic tank and pit emptying services.
Nongovernmental organization	Carries out research projects to guide policy and evaluate project and program impacts; Advocates for better sanitation services and increased funding to the sector; Researches and investigates technical innovation; Implements various programs; Implements CLTS projects and programs; and Supports credit for sanitation facilities at home (SACCOs are part of this).
Development partner from country development programs (GIZ, Austrian Aid, and so on)	Provides funding and development assistance to: Support programs and project implementation by national and local government through funding, training and capacity development, and planning.
Private service provider and materials supplier (builders, masons, hardware suppliers)	Funds and develops sanitation infrastructure (usually on-site arrangements such as toilets, septic tanks, pit latrines).
Cesspool emptier	Provides septic tank and pit emptying and sludge transport to WWTW services on request by the client using vacuum tankers.
Emerging formal sector emptiers using semi-mechanized equipment, such as Gulpers	Provides pit emptying and sludge transport to WWTW services on request by the client using hand tools, Gulpers, drums, and pick-up trucks; Other services such as construction of toilets and environmental clean-up are sometimes also offered as part of the overall business package.
Informal manual emptier ('midnight emptiers')	Provides informal (and illegal) pit emptying services on request by the client using hand tools, buckets, and jerrycans. Sludge is seldom transported away and is usually disposed of locally in adjacent pits, road drains or nearby vacant land.
Private developer and housing estate committee	Funds and develops sanitation infrastructure within housing and commercial developments; and Operates and maintains their own sanitation infrastructures, to a greater or lesser degree.

## Appendix E: ODF Plus in Mbarara District—A Case Study

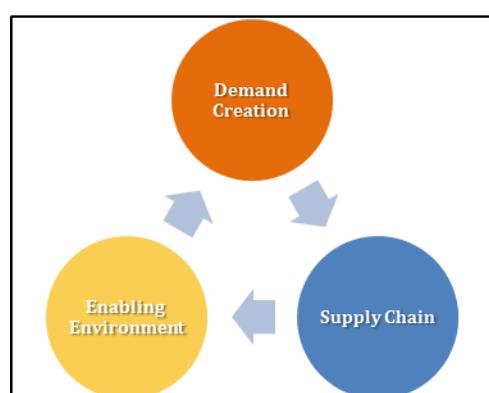
### Context

Mbarara district, with a population of just less than half a million people, has long been among the leading performers in terms of sanitation coverage. Reported coverage rates have grown steadily from 72 percent in 2002, to 92 percent in 2010, to 97 percent in 2014, and on to 98 percent in 2016. There were no short cuts. These statistics reflect consistent efforts over many years to promote good sanitation and raise awareness of its importance, boosted since 2011 with funds from the Uganda Sanitation Fund.

While these coverage figures may look impressive at first glance, they are not necessarily contributing to improvements in villagers' quality of life. While the well-to-do were using flush toilets, Ecosan and ventilated improved pit (VIP) latrines, more than 50 percent of the rural and urban poor were still using traditional unimproved latrines.



An attractive high quality latrine.



### Theory of change

The *Financing Strategy for Sanitation and Hygiene in Uganda (2005–2015)* recommended three core programs: a Demand Creation program; a Supply Chain program; and an Enabling Environment program. Mbarara district adopted a theory of change based on this strategy, creating demand for improved sanitation, strengthening the supply chain, and creating an enabling environment.

### Theory of action

As they rolled out their intervention, the District Health team evolved a 'theory of action'.

**Leadership advocacy:** It all starts with getting buy-in from high level leaders like the district chairperson, district councilors and local council 3/subcounty chairpersons. Advocacy with leadership figures involves using local health data to help them understand the disease burden that health centers are handling, and which better sanitation can help reduce. It also involves showing them a catalog of sanitation improvement options that household members can consider, that take account of their varying income levels.

Leadership Buy-in

Community Commitment

Multiple Approaches

*Community commitment:* Working with leaders and the network of environmental health staff and volunteers called Village Health Teams (VHTs), meetings are held

at village level to engage villagers, using relevant health data and possible options for achieving better sanitation.

The importance of the leaders' role at this stage cannot be overstated. Writers on the topic of leadership often state that: 'Everything rises and falls on leadership'. Bubaare's Subcounty chairperson says, "A leader must change the people's mindset, sell his vision, and be focused." Leaders have the ear of their people and can play a critical role in changing their mindsets toward improved sanitation. Spurred by the vision of improvement offered by their subcounty chair, the villagers sign a meeting resolution that commits them all to improve their sanitation.



The Subcounty Chairperson with the Assistant District Health Officer.

*Multiple interventions:* Five intervention approaches are used concurrently.

- The community is triggered using CLTS techniques and tools to help people see how the absence of latrines and presence of unimproved latrines affects their health and expenditure adversely.
- Alongside CLTS is a strong sanitation marketing component. Over the years, the VHTs in Mbarara have evolved into sanitation entrepreneurs, over and above their voluntary work to promote health. They have carpenters and builders among them who manufacture mobile Tippy Taps and cast SanPlats which they sell for UGX 15,000 and UGX 10,000, respectively. These VHT groups and other sanitation entrepreneurs have catalogs of sanitation improvement options that the villagers can pick from, with direct selling from house to house or in village meetings.
- Alongside the CLTS and sanitation marketing is a Home Improvement Campaign, where villagers seek to improve the entire homestead, not just the latrine. They construct a washable floor for the latrine, and construct kitchens with energy saving stoves and drying racks. Households are then also required to have a Tippy Tap constructed next to the latrine and at the kitchen for the various handwashing needs that arise. The best homes are rewarded with gifts. This has created a buzz with families outdoing themselves by decorating their mud and wattle homes and buildings.



Washable slabs and cover plates have helped reduce the burden of disease significantly across the district.

In tandem with these three approaches are regular home visits by environmental health staff and enforcement of the Public Health Act and district sanitation by-laws.

## **Implementation**

### *Demand creation*

Demand creation was driven by information on public health. The health team felt it was important that people should know what diseases they suffered from because of poor sanitation. They also encouraged suppliers of sanitation products to take the lead in selling their products. Additionally, they integrated interventions and approaches promoting improved sanitation through CLTS, Home Improvement Campaigns, village meetings, and direct marketing of sanitation technologies.



Several volunteers have developed a side-line in making mobile handwashing stands, SanPlats, and slabs.

Promotion of improved sanitation focused on attributes such as washable latrine floors, coverable squat holes, fly-free latrines, prevention of foul smells, and no pools of stagnant urine.

### *Supply chain*

Within Mbarara District, the team worked to ensure villagers could choose from a range of product options. They identified and supported suppliers of these products in every parish and ensured there were user-friendly payment options. People were able to pay an initial deposit to secure their purchase until a full payment was made. Additionally, the interventions were timed for when people were not busy with farming activities.

To further improve the supply chain, Sanmark shops were set up in various locations to facilitate access to products. Sanitation marketing was integrated into water projects and housing construction, and an aggressive campaign to achieve ‘100 percent concrete smooth floors’ was undertaken to connect suppliers and builders to potential customers.

### *Enabling environment*

**Policy framework:** The district referred to Sanitation Ordinances and By-laws to encourage villages to sign meeting resolutions that committed them to achieving improved sanitation. In a few instances they also invoked the law to enforce improvements.

**Advocacy:** The Assistant District Health Officer and other environment health workers engaged high level leadership at district and lower levels. They used disease surveillance data and a sanitation catalog both to make the case for sanitation and provide a solution for improved sanitation that the leaders could sell to their constituents

***Financing:*** The district focused on household-based sources of income. Their intervention was not dependent on external funds but rather on household incomes. Additionally, the district engaged local funding mechanisms such as community saving schemes and Savings and Credit Cooperative Schemes (SACCOs) to support households to acquire improved sanitation.

Alongside this, the district partnered with PostBank, to provide home improvement loan facilities for water tanks and toilets. In Mbarara, over 25 new latrines are funded each month using PostBank loans.



Attractive handwashing facilities with soap encourage consistent use.

The district administration also found ways to subsidize the cost of SanPlats by providing transport to villages from the casting yards.

***Monitoring and quality assurance:*** To improve the quality of sanitation products and monitoring, the district:

- Trains technical staff in different sanitation technologies.
- Engages technical staff in monitoring and quality assurance.
- Tracks results through regular data collection.

#### **Results achieved over the last five years**

The district trained 42 masons and, as a result, three casting yards for SanPlats and slabs were set up. Eight VHTs were trained, and they carry out promotions and supply SanPlats across the entire district. Three Sanitation entrepreneurs have emerged who have built 690 Sanplats, 70 slabs, and 34 VIP latrines. A '100 percent concrete smooth floor campaign' was conducted, and in 107 villages (out of the 476 villages that were verified as ODF), every home has a smooth concrete floor that is easy to wash and keep clean. In this time, handwashing with soap coverage has grown from 32 percent to 56 percent. With the eradication of open defecation, worm infestation and dysentery cases have been reduced by 62 percent and 51 percent, respectively. No child under five has died from diarrhea in the past two years.



A few villagers and their village health team's coordinator show the village's open defecation free certificate.

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