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WATER AND SANITATION FOR THE POOR AND BOTTOM 40% IN UGANDA: A REVIEW OF STRATEGY AND PRACTICE SINCE 2006

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Acronyms and Abbreviations

CBMS	Community-Based Maintenance System
CBO	Community-based organization
CPI	Consumer Price Index
DEA	Directorate of Environmental Affairs, MWE
DESO	District Education and Sports Office
DDHS	District Directorate of Health Services
DWD	Directorate of Water Development, MWE
DWO	District Water Office/Officer
DWRM	Directorate of Water Resources Management, MWE
DWSCG	District Water and Sanitation Conditional Grant
GIZ	German development assistance agency
GPOBA	Global Partnership for Output-Based Aid
GTZ	German development assistance agency, prior to reorganization as GIZ
IDAMC	Internally Delegated Area Management Contract (NWSC)
IFC	International Finance Corporation (part of the World Bank Group)
ILRI	International Livestock Research Institute
JMP	WHO-UNICEF Joint Monitoring Program for Water and Sanitation
KfW	Lending agency of German development cooperation
LC	Local council (the levels are designated by number, e.g., LC5 = District Council, Kampala City Council Authority)
M&E	Monitoring and evaluation
MDGs	UN Millennium Development Goals
MOES	Ministry of Education and Sports
MOFPED	Ministry of Finance, Planning, and Economic Development
MOH	Ministry of Health
MWE	Ministry of Water and the Environment
MWLE	Ministry of Water, Lands, and Environment (ministry prior to reorganization as MWE)
NDP	National Development Plan
NGO	Non-governmental organization
NWSC	National Water and Sewerage Corporation
OBA	Output-Based Aid
OECD	Organization for Economic Cooperation and Development
O&M	Operation and maintenance
PAF	Poverty Action Fund

PEAP	Poverty Eradication Action Plan
PPP	Purchasing Power Parity
PWP	Public water points
RGC	Rural growth center
RUWASS	Reform of Water Supply and Sanitation Project
RWH	Rainwater harvesting
RWSSD	Rural Water Supply and Sanitation Department, DWD, MWE
SDGs	UN Sustainable Development Goals
SIP	Sector Investment Plan (predecessor to SSIP)
SSIP	Strategic Sector Investment Plan
SWAp	Sector Wide Approach
SWGs	Sector Working Groups
TSU	Technical Support Unit, RWSSD, DWD, MWE
UBOS	Uganda Bureau of Statistics
UN	United Nations
UNHS	UBOS Uganda National Household Survey, various years
UOWS	Umbrella Organizations for Water and Sanitation
USD	United States Dollar
USh.	Ugandan Shilling
UWSSD	Urban Water Supply and Sewerage Department, DWD, MWE
WASH	Water, sanitation, and hygiene
WfP	Water for Production
WfPD	Water for Production Department, DWD, MWE
WHO	World Health Organization
WSDF	Water and Sanitation Development Facility. Also used to refer to WSDF branch offices under UWSSD, DWD, MWE
WSP	Water and Sanitation Program
WSSB	Water Supply and Sanitation Board

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Executive Summary

The purpose of this review is to assist the Directorate of Water Development (DWD), Ministry of Water and Environment (MWE) to prepare a revised Pro-Poor Strategy, building on the successes and learning from the mistakes of the past decade. A clear and measurable pro-poor strategy to guide DWD activities in better serving the poor and Bottom 40% will help to define the areas in which the World Bank and other development partners can best provide poverty-oriented assistance.

Poverty in Uganda

In this report, *the poor* (or *poor people*) refers to Ugandans living below the Ugandan poverty line (between USD 0.94 and 1.07 per day depending on the region and area). The *Bottom 40%* (or *economically disadvantaged*) refers to the poorer two wealth quintiles of the national population.

Uganda still has a relatively large rural population, compared to other low income economies. Of the 34.1 million people in Uganda, 77% live in rural areas. It is not surprising, therefore, that a majority of poor people, and the majority of people in every wealth quintile, live in rural areas. However, a disproportionate number of the poor and Bottom 40% in Uganda are rural residents.

Poor people comprise 19.7% of the Ugandan population. Of the 6.7 million poor people, 6.0 million (89%) live in rural areas, and 700,000 in urban areas. Most of the urban poor live in small towns (600,000). Similarly, 90% of economically disadvantaged people live in rural areas, and those in urban areas live mostly in small towns.

Improved Water and Sanitation Access

The MDG national targets for improved water and sanitation access in Uganda are 72% and 70% respectively. Estimates of Uganda's progress toward these targets vary, depending on the data source. The latest JMP estimates for Uganda are for 2012, and indicate that Uganda had already meet the MDGs for improved water access, but was far behind in reaching the sanitation access targets.

This report makes use of data from the 2012/13 Uganda National Household Survey (UNHS) to examine improved water and sanitation access rates for the poor and Bottom 40%. Note: The aggregate analysis in this report may not accurately portray very local conditions affecting the situation of the poor and Bottom 40%.

These data show that poor and economically disadvantaged people lack access to improved water and sanitation primarily because they live in rural areas, and not due to their income levels.

The data also show that piped schemes are used primarily by wealthier income groups, especially in large towns. Boreholes (handpumped supplies) are the principal type of water supply used by the poor and Bottom 40% in both rural and urban areas.

The 2006 Pro-Poor Strategy for the sector comprised a series of actions to be taken in areas within the DWD and National Water and Sewerage Corporation (NWSC) mandates. This review looked primarily at actions in that strategy in regard to funding, rural water supply, and urban water supply.[1]

[1] The lack of data on both public sanitation and water for production makes it impossible to review pro-poor actions in these two sub-sectors. Household sanitation is under the Ministry of Health (MOH) mandate, and not that of DWD.

Funding
The Poverty Eradication Action Plans placed priority on increasing the share of the sector budget going to rural water supply, given the large size of the rural population, the concentration of poor people there, and the importance that the poor themselves attach to improved water supplies. The 2006 Pro-Poor Strategy set an implicit target that over 50% of the sector budget should go to rural water services.

The share of rural water and sanitation has been between 33% and 45%, 2009/10-2012/13. Of particular concern is the declining value in real terms of central grants (DWSCGs) to District Water Offices. These grants are key not only to increasing rural coverage, but to maintaining the quality of rural water services. The real value of DWSCGs has dipped below the 2002/03 level.

Rural Water Supply
In essence, Uganda pursued a pro-poor approach to rural water supply, without explicitly labeling it as such, long before the 2006 Pro-Poor Strategy appeared. The overall guiding principle of the 1999 National Water Policy was "some for all rather than more for some."

The policy also introduced the principle of full cost recovery for piped scheme investments in large towns, and significant but more limited cost recovery in rural areas

The principal pro-poor rural water practices in the 2006 strategy are to(1) allow communities to exempt or reduce water fees for the poor; (2) target funding on the worst-served areas; and (3) promote self-supply and rainwater harvesting.

Cross-subsidies: Rural communities were encouraged to exempt the poor and other vulnerable groups from contributing to water supply costs. That has happened to a limited extent. The main trend, though, appears to be that rural users as a whole are not contributing sufficiently to operation and maintenance costs, particularly preventative maintenance.

Targeted funding to the worst-served areas: DWD allocates more funds to districts that have access rates below the national average. However, these funds are not tied to the sub-counties with the worst coverage rates, and local political decisions often lead to funds being spent in better-served sub-counties. In any case, allocating funds to the worst served districts is an imperfect method for reaching the poor. An analysis by DWD and the Uganda Bureau of Statistics (UBOS) on the relationship between poverty rates and access rates for rural sub-counties found no clear correlation. In 2009, DWD and UBOS developed a methodology to use jointly sub-country poverty statistics and access rates when planning investments, but this was never implemented.

Self-supply and Rainwater harvesting: Self-supply has been implemented on a negligible scale. Under the initial strategy for rainwater harvesting, the wealthy captured most of the benefits.

Urban Water Supply
Note that in urban water supply in Uganda, ***large towns*** refers to urban areas where NWSC manages the water supply and ***small towns*** refers to urban areas where a local water authority or urban council manages the supplies.

The principal urban pro-poor practices in the 2006 Pro-Poor Strategy are to: (1) subsidize tariffs; (2) reduce connection fees; (3) introduce and promote various types of public water points (PWPs); and (4) densify and expand piped scheme networks in low-income settlements.

Tariff Subsidy: Studies in Uganda have found that any type of subsidized tariff for piped schemes benefits primarily wealthier households (Tsimpo and Wodon 2014a). This is in line with previous

findings from a World Bank global study on tariffs. Tariff subsidies in Uganda benefit the wealthy mostly because many more of them use piped schemes as their principal source of drinking water.

Subsidized Connection Fees: The main beneficiaries of the NWSC Affordable Connections Policy were those households which had water piped inside their homes. Commercial and industrial connection holders were the second largest group of beneficiaries. The practice has not been used to any extent in small towns.

Promote new types of PWPs--Kampala: Less than 20% of the beneficiaries from the Affordable Connections Policy were served through PWPs. Of the new PWPs brought online due to the pro-poor policy, 53% of them were subsequently disconnected for non-payment. NWSC has piloted 300 prepayment meters for PWPs to deal with this problem. Although numerous challenges were uncovered during the pilot, it was sufficiently successful that NWSC, with funding from the Global Progam on Output-Based Aid, installed 1,131 prepaid PWPs by 2014.

Promote new types of PWPs—Small Towns: The number of PWPs is not a reliable indicator of reaching the poor and economically disadvantaged in small towns. Good engineering practice and DWD design guidelines dictate that the number of house connections be reduced, and the number of PWPs and yard connections increased, as a way to keep scheme costs affordable. However, serving the poor and Bottom 40% generally requires that a scheme supply more, not less, water. In any case, there are few data on the experience with various types of PWPs in small towns. A pilot experiment with prepaid meters concluded that these are not appropriate at present for small towns.

Expand and Densify Pipelines in low-income neighborhoods: Concessional funding has allowed NWSC to expand and densify the Kampala network, which is one reason that the number of PWPs increased (see *PWPs-Kampala* above). However, production capacity has constrained network expansion and the number of new connections. In small towns, scheme costs need to be kept affordable, and laying pipelines to serve the entire town would be prohibitively expensive. Therefore the schemes generally serve the more densely populated town centers. The poor and economically disadvantaged are not necessarily concentrated here. Also, the focus on providing piped schemes tends to reduce District Water Office (DWO) construction and maintenance of small town boreholes, which likely serve the poorer segments of the town population.

In summary, the benefits from urban pro-poor practices in Kampala have mostly been captured by consumers throughout the city who can afford domestic connections. In small towns, urban pro-poor practices have not been widely applied, nor does it make economic and engineering sense to do so in many cases, because piped schemes are often not a cost effective way to deliver improved water in low density areas.

Conclusions

Uganda has been remarkably effective in delivering services to the poor and economically disadvantaged. The fiscal and political context that facilitated this success has now changed, and the bias against rural water services seems likely to continue as a result. This will disproportionally harm poor and economically disadvantaged people, as they live overwhelmingly in rural areas.

Certain elements in this bias can be corrected, despite the constrained fiscal space, namely reducing tariff subsidies on piped schemes, and giving more priority to urban handpumped supplies (“boreholes” in Ugandan parlance).

In addition, DWD and its development partners should target additional assistance to the sub-counties where poverty and economic disadvantage are highest, and improved water access lowest.

Recommendations

One set of recommendations concern the process of developing a new pro-poor strategy, for suggested launch at the 2016 Joint Sector Review. The thrust of these recommendations is to ensure that frontline workers in water service delivery have ample opportunity to contribute their ideas to the new strategy; and that the strategy has measurable objectives and outcomes, and a monitoring system to hold DWD accountable for implementation.

A second set of recommendations concern the content of the new strategy: (1) Reduce piped scheme tariff subsidies; (2) Assist local Water Authorities and local private operators and individuals to integrate the management of handpumped supplies and piped schemes; and (3) Develop targeted programs to improve access and other aspects of improved water services to both the poor and the Bottom 40%.

PART I: BACKGROUND

1. Concern over Water and Sanitation Services to the Poor

Nearly a decade ago, the Directorate of Water Development (DWD) in the Ministry of Water and Environment (MWE) issued a pro-poor strategy to guide activities within the DWD mandate. This report reviews how and to what extent the practices outlined in that strategy have helped to provide safe water and improved sanitation to Uganda's poor and economically disadvantaged.

The 2006 DWD *Pro-Poor Strategy for the Water and Sanitation Sector* has never been reviewed in its entirety, despite plans to do so after two years. Two sets of events make this review now timely.

First, wealth creation has replaced poverty eradication as the overarching goal for Ugandan national development, as outlined in the government's national plans. Water and sanitation has therefore lost its standing as one of the five sectors prioritized for government funding in the Poverty Eradication Action Plans (PEAPs). The first National Development Plan to succeed the PEAPs reached its completion date in 2015. This year marks an opportune moment to review what this transition has meant for water and sanitation delivery to the poor and economically disadvantaged.

Second, 2015 also marks the completion date for the United Nations Millennium Development Goals (MDGs), which attracted substantial international funding to halving the number of people without access to improved water and sanitation, in Uganda and around the world. Again, that makes this year an obvious time to look at and behind the data on Uganda's progress toward the water and sanitation MDGs, in order to understand what has worked and what has not.[2]

This is all the more true as the international concern with basic water and sanitation access continues. In 2010, the United Nations passed a resolution on The Human Right to Water and Sanitation, and preparations are well advanced for Sustainable Development Goals to replace the MDGs.

The next two sub-sections describe this national and international context. The subsequent two sub-sections give an overview of the 2006 Pro-Poor Strategy, and explain the purpose and structure of this report.

1.1 Water and Sanitation as Part of Poverty Eradication in Uganda

Whitworth and Williamson (2010) have termed 1995-2002 the Poverty Eradication Era in Uganda. The country had by then made an impressive recovery from the war, civil conflict, and economic chaos brought on by the coup d'état in 1971. However, there was broad public concern about the distribution of economic growth and the widespread persistence of poverty. The adoption of the 1995 constitution re-introduced elections, and made government leaders and politicians more sensitive to public and political opinion. Poverty eradication consequently replaced growth as the explicit top government priority.

In order to give substance to the new priority, the government overhauled its approach to planning and budgeting, which evolved into the Sector Wide Approach (SWAp) still used today. Output-oriented

[2] Whether or not Uganda has reached the MDG targets depends on the data source. According to the official United Nations source, Uganda in 2012 had already achieved the water access target, but was hopelessly far from the sanitation target. Section 4.1 examines these data in detail.

budgeting was introduced as part of the overhaul. The Ugandan government did not simply proclaim an admirable goal, it invented model practices for how to harness public expenditure toward achieving that goal.[3]

These changes resulted in the 1997 Poverty Eradication Action Plan (PEAP). Two subsequent PEAPs were prepared, in 2000 and 2004.

The PEAPs identified services that should receive funding priority due to their impact on the poor. The 1997 PEAP singled out five priorities for service delivery, of which water and sanitation was one. In revising this first PEAP, the government solicited the views of the poor themselves, though introducing the Uganda Participatory Poverty Assessment process. It turned out that improved water supplies were a far greater priority for the poor than had been previously recognized (Mugambe 2010). The second PEAP further prioritized rural water supply in light of the participatory evidence (MOFPED 2004, pg. 168).

Significant donor funding fueled PEAP implementation. Uganda was the first country to receive debt relief under the Heavily Indebted Poor Countries (HIPC) Initiative, and Poverty Reduction Support Credits from the World Bank. The Poverty Action Fund (PAF) was established in 1998/99 to channel these funds to the priorities outlined in the PEAPs. In addition, some bilateral donors (notably the Nordic countries) chose to direct their general budget support to the government through PAF. PAF disbursed over USD 1 billion in six years, 2000/01- 2005/06 (Brownbridge 2010, pg. 281-291). Funding to the social sectors soared.

Whitworth and Williamson (2010, pg. 24-25) put the end of the poverty eradication era in 2002, when the MOFPED and Bank of Uganda became concerned that the aid-fueled expansion of pro-poor services was crowding out private sector growth and threatening export competitiveness. Expenditure on PEAP priority areas peaked, as a share of GDP, in 2002/03. In 2002, a new medium term strategy of fiscal consolidation was adopted. As part of this, the government decided that increased donor support to a sector, whether in the form of project aid or budget support, would not increase the ceiling on allocations to that sector. In other words, the government applied the brakes to rising donor assistance to social services, including water and sanitation.

A more prominent end to the poverty eradication era came in 2006. In the presidential election campaign that year, economic growth replaced poverty eradication as the political promise. The last PEAP ended the following year, and the government subsequently re-introduced National Development Plans to pursue the wealth creation priorities (Mugambe 2010, pg. 168-169).[4] Poverty eradication was not renounced by any means, but economic and productive sectors began to claim an increasing share of public resources. The water and sanitation sector would have a smaller piece of the public pie with which to provide services to a growing population.

An obvious question is how this changed political and fiscal reality has affected water and sanitation service delivery to the poor and economically disadvantaged.

1.2 Millennium Development Goals and other International Priorities

By the early 1970s, the majority of Western donors had made poverty alleviation the explicit objective for their assistance programs. Several economic theories of development contributed to this shift, including the basic needs strategy developed by the International Labour Organization. The basic needs approach

[3] Section 2.1 describes these planning and budgeting procedures, and how they were replicated in other countries as Poverty Reduction Strategy Papers, Programs, and Credits.
[4] The third and final PEAP covered 2004/5 – 2007/08. The subsequent National Plan covered 2010/11 – 2014/15.

differed from other economic theories in the emphasis placed on large government rural social service programs, such as water and sanitation.

One early and highly visible manifestation of donor commitment to public social service programs was the United Nations International Drinking Water Supply and Sanitation Decade, 1981-1990. The United Nations (UN) estimated that by 1988 donor agencies were spending USD 4.5 billion a year on improved drinking water supplies.

The economic rationale behind the basic needs strategy did not survive the economic crises of the 1980s. Donors perceived that governments simply could not afford to supply subsidized social services. However, new research indicated that public investment in education and health care seemed to have a cost-effective impact on productivity and incomes, and therefore contributed to lifting the poor out of poverty.

For some donors that meant that water and sanitation programs should continue to receive funding, given their impact on health, and particularly on maternal and infant mortality. Fiscal realities and implementation experience, though, meant that cost recovery from consumers should become part of water supply policy.[5] Nonetheless, the water and sanitation sector was no longer an explicit international focal point in the way that it had been during the UN Decade.

However, with the MDGs, the UN once again rallied the international community to fund a major expansion in access to improved water and sanitation facilities.

The MDGs were first published in 2001, and comprise eight goals, with quantifiable targets and measurable indicators for each goal, to be achieved by 2015.[6] The seventh MDG, Ensure Environmental Sustainability, includes the target,

> *Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.*

The indicators for this target are the

> *Proportion of population using an improved drinking water source*
>
> *Proportion of population using an improved sanitation facility*

Specific target values were set for each country for the percentages of its 2015 population which should have access to improved water and sanitation respectively.

The MDGs "received a level of sustained attention that is unprecedented for any UN developmental declaration" (Hulme and Scott 2010, pg. 5). Reaching the target percentages for improved water and

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[5] In 1992, the Ugandan Parliament adopted this thinking, and passed the Ugandan Plan of Action for Children which established goals for the survival, protection, and development of women and children. The plan committed the government to providing minimum basic social services to as many Ugandans as possible, including for clean water and sanitation. The goals for domestic water supply in the 1999 National Water Policy are based on this plan. The 1999 policy also incorporated cost recovery (MWLE 1999, pg. 8, 15).

[6] The MDGs originated in an effort to bring some coherence to the resolutions that had been passed in a disparate array of UN conferences during the 1990s. One of these conferences was the 1992 Rio Summit (UN Conference on Environment and Development) that had laid out new principles for water resources management and delivering water services. In 2001, the UN published *Road Map Towards the Implementation of the United Nations Millennium Declaration*, with an annex listing the MDGs in draft form (Hulme and Scott 2010, pg. 2-5).

sanitation turned out to be an effective spur to increasing international assistance to the sector, especially in countries such as Uganda where the government had so effectively demonstrated its commitment to these goals through the PEAPs and SWAps.

Work is well underway to develop a set of s Sustainable Development Goals (SDGs) to succeed the MDGS, which sunset in 2015. The draft SDGs set higher standards for what constitutes basic water and sanitation access, and add targets for delivering water directly to the house and for eliminating inequities in access.

In 2010 the United Nations General Assembly passed a resolution recognizing a human right to water and sanitation. The resolution calls on member states and international organizations to help developing countries provide safe, clean, accessible, and affordable drinking water and sanitation for all.

In short, the forthcoming SDGs and the Human Right to Water and Sanitation Resolution aim to coalesce continued political commitment to improving water supply and sanitation, and even greater concern about whether the poor and economically disadvantaged are benefiting from programs to provide these services.

1.3 2006 DWD Pro-Poor Strategy for the Water and Sanitation Sector

In March 2006, DWD produced a pro-poor strategy that fit snugly into the third PEAP.

The 2004 PEAP set the following priorities for the water and sanitation sector: (1) to reallocate funds within the sector to rural water supply, (2) to improve cost effectiveness, and (3) to review urban subsidy policies and tariffs, so that users and the private sector would fully fund and finance services in the long term.

In the same year, DWD led a review of the role of the water and sanitation sector in eradicating poverty. The findings were more detailed than in the PEAP, but along the same lines. There was the recognition that urban areas had received a disproportionate amount of the funding, that commercially viable tariffs for urban supplies would best serve the interests of the poor, and that even in rural areas, the non-poor had to contribute more to costs.

Based on the 2004 review, DWD produced in 2006 a pro-poor strategy covering the areas of the sector within the mandates of DWD and the National Water and Sewerage Corporation (NWSC). Annex 1 reproduces the strategy document in full.

Below are several general observations about the Pro-Poor Strategy. Part III of this report will examine more closely the various actions and practices outlined in the strategy.

1.3.1 A Document to Guide DWD and NWSC

The 2006 Pro-Poor Strategy was not a document meant to cover the entire water and sanitation sector. Rather, the strategy was explicitly focused solely on "areas of the water and sanitation sector within the mandate of the Directorate of Water Development and the National Water and Sewerage Corporation."[7] Responsibility for implementing the strategy was therefore given to DWD, NWSC, and the stakeholders which work with these two organizations.

[7] See the second page of Annex 1 for this quotation. Section 2 explains the distinction in Uganda between the MWE and the water and sanitation sector, and the responsibilities of the DWD and NWSC.

This aspect of the strategy explains, first, why sanitation and hygiene promotion receive so little attention in the strategy. These activities fall largely under the Ministry of Health (MOH) and Ministry of Education and Sports (MOES).[8]

Second, it explains why the off-farm use of water for productive purposes ("water for production") and water resource management activities are included in the strategy, along with drinking water supply. The 1981-90 UN Water Decade and the MDGs have created the tendency among donors to equate improved water access only with improved drinking water supplies. In Uganda, DWD's responsibilities are broader than that, and include water for production. Water resources management was under DWD until the ministry was reorganized in 2008. MWE now has a separate Directorate for Water Resources Management.

Incidentally, the focus of the Pro-Poor Strategy on the DWD/NWSC responsibilities also explains why this review has been carried out under the supervision of the DWD, and covers only actions and practices still within the DWD and NWSC mandates.

1.3.2 A Catalogue of Pro-Poor Policies and Practices Explained Elsewhere

The strategy is about ten pages long, and comprises 36 strategic actions. The actions cover cross-cutting issues such as budget allocation and monitoring, as well as actions specific to the DWD sub-sectors.[9] Each action is summarized with a short phrase, accompanied by a few sentences of explanation.

The document is not intended therefore to introduce, explain, and justify policies and practices. Rather, the strategy serves to highlight the pro-poor aspects of policies and practices articulated elsewhere. If the strategy document were produced with today's information technology, each action would no doubt contain numerous hyper-links to documents where the action is discussed fully.

In this respect, the pro-poor strategy serves as a catalogue or reference document to bring to light the pro-poor aspects of both long-standing and recent policies and practices that will benefit the poor in the areas of responsibility for DWD and NWSC. The pro-poor facets are summarized in in the form of clear-cut and specific actions. Thus, the Pro-Poor Strategy is analogous to what the MDGs did for a decade of UN conference resolutions, that is, pull the practical implications together in a list of actions.

This type of Pro-Poor Strategy would have been particularly useful in the era of PEAPs, when the government budget was allocated to those sectors and activities that could show a direct impact on the poor. As explained above, DWD began this exercise in 2004, just when the third PEAP was published.

1.3.3 Actions without Measurable Indicators, Quantitative Targets, or a Monitoring Plan

Although the actions in the strategy are specific, they are not stated in a way that is measurable, nor are there targets or milestones against which to evaluate progress. There is also no plan for monitoring and reporting on the strategy's implementation and achievements.

The intention was that these various facets of monitoring would be developed as part of the strategy's implementation. One action in the Pro-Poor Strategy called for improving the sector performance

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[8] The institutional division of responsibilities for sanitation is explained in Section 2.2.

[9] In 2006 these sub-sectors were rural water and sanitation, urban water and sanitation, water for production, and water resource management. As explained earlier, the last sub-sector is no longer under DWD.

framework, and another for including pro-poor indicators in the framework and carrying out in-depth studies as needed.[10]

Limited steps were taken to monitor and report on the urban pro-poor actions within the strategy. The 2008 Sector Review agreed on a technical undertaking that, among other things, would finalize a monitoring framework for the implementation of the pro-poor strategy in urban areas. The 2009 Sector Performance Report summarized progress as follows: a consultant review of the pro-poor strategies in urban areas; improvements to performance and management contracts; start-up of a pro-poor pilot in small towns; and establishment of a regulatory unit within DWD (MWE 2009, pg. 122-123).[11] The 2010 Sector Performance Report was more comprehensive. It listed the urban pro-poor actions, and gave a summary of progress and issues to-date for each urban action in small and large towns (MWE 2010, Annex 9.12, pgs. 217-218).

Nothing similar was done for the other sub-sectors covered by the Pro-Poor Strategy. Even the monitoring and review done for the urban sub-sector did not result in new indicators for the sector performance framework.

After 2010, the Pro-Poor Strategy largely slipped from view. By then, PEAPs had disappeared and the National Development Plan emphasized wealth creation. Pro-poor policies and actions in the water and sanitation sector were subsequently mentioned most frequently in regard to NWSC, because the corporation had enacted pro-poor policies prior to the 2006 strategy, and established a unit to implement and monitor them.

1.4 Purpose and Structure of this Report

The purpose of this review is to assist the DWD to revise the Pro-Poor Strategy, building on the successes and learning from the mistakes of the previous decade.

The following four parameters were set for this review.

First, the review only considers policies and practices within the present mandates of DWD and NWSC. Sanitation and hygiene practices that are within the MOH and MOES mandates are not reviewed. Similarly, water resources management practices are not examined, as those are now handled by the Directorate of Water Resources Management, and not DWD.

Second, the review consists of a desk study, not field research. The information therefore comes from documents and a few interviews in the Kampala area. In addition, the Ugandan Bureau of Statistics (UBOS) kindly agreed to provide an analysis of water and sanitation access, using data from a recent household survey.

Third, the available documentation has imposed its own constraints. Information on piped schemes, particularly in large towns, is relatively solid. This is especially true due to recent studies by WSP and the World Bank (WSP 2013, Tsimpo and Wodon 2014a, 2014b). Other areas, such as water for

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[10] Briefly, the performance framework comprises measurable indicators, with annual and long-term targets that are supposed to be achieved as a result of public funding to the sector. These frameworks are part of SWAps and output-oriented budgeting. Sector reviews, technical undertakings, and performance reports, mentioned in the next paragraph, are also part of the Water and Sanitation SWAp. Section 2.1 explains these aspects of sector planning in Uganda.

[11] Section 2.3 explains performance and management contracts between DWD, water authorities, and the private sector.

production and sewerage, are discussed only briefly or not at all, because gathering the necessary information through interviews and a disparate array of unpublished documents was beyond the resources of this assignment.

Fourth, the focus is primarily on expanded access rather than other aspects of water and sanitation services. Section 4 explains the reasons behind this parameter. Briefly, it simply reflects that good data and a reasonable consensus around the definition of access are available for this aspect of service delivery, and lacking for other aspects such as water quality, reliability, convenience, etc.

The structure of the report is as follows:

PART I: BACKGROUND

The present section has explained the reasons for reviewing the 2006 Pro-Poor Strategy and how this report accomplishes that.

Section 2: Water and Sanitation Sector in Uganda provides information on the institutional organization of the water and sanitation sector in Uganda, primarily for readers less familiar with SWAps, decentralization, and public funding channels in Uganda.

PART II: SITUATION OF THE POOR AND BOTTOM 40%

Section 3: Poverty in Uganda defines poverty and the economically disadvantaged (Bottom 40%) as used in this report, and provides basic information about the number and location of poor and economically disadvantaged people in Uganda.

Section 4: Access to Water and Sanitation in Uganda examines Uganda's performance on one aspect of water and sanitation delivery, namely providing access to improved facilities. The section begins by describing the excellent progress that Uganda has made in this respect, and then presents Uganda National Household Survey (UNHS) data describing access by the poor and economically disadvantaged.

PART III: REVIEW OF PRO-POOR STRATEGY AND PRACTICES

Section 5: Funding examines the extent to which public funding to the sector has followed the practice for sub-sector allocations as stated in the Pro-Poor Strategy.

Section 6: Rural Domestic Water Supply examines four pro-poor practices for rural domestic water supply given in the Pro-Poor Strategy: exemption of the poor from water payments; targeted funding to the worst-served areas; self-supply; and rainwater harvesting.

Section 7: Urban Domestic Water Supply reviews for large and small town water supplies four pro-poor practices highlighted in the Pro-Poor Strategy: tariff subsidies; affordable connection fees; increased numbers and types of public water points; and expanded and densified pipelines in low-income neighborhoods. In Uganda, "large towns" are defined as urban areas where NWSC manages the piped scheme networks. "Small towns" are those urban areas whose water supplies are managed by local water authorities, supported by the DWD.

Section 8: Water for Production and Public Sanitation examines the planned pro-poor practices in these sub-sectors. The review is limited due to the lack of documentation. Note that most sanitation activities are outside the mandates of DWD and NWSC.

PART IV: TOWARD A NEW PRO-POOR STRATEGY

Section 9: Conclusions and **Section 10: Recommendations** summarize the implications of the report's findings for producing a new DWD Pro-Poor Strategy.

2. Water and Sanitation Sector in Uganda

This section describes the institutional organization of the water and sanitation sector in Uganda, primarily for readers less familiar with Uganda.[12] The sub-sections will discuss in turn the following:

1. ***Sector-Wide Approach:*** Sectors have a central and formal role in Ugandan government planning, budgeting, and performance monitoring. Sectors create a complex web of institutional links among a diverse set of ministries, local government departments, and other stakeholder organizations.
2. ***Institutional Responsibility for Sanitation:*** Government responsibility for progress toward the sanitation MDG, and for the Golden Indicators on sanitation and hygiene, lies with MOH and MOES, and the local government departments which these ministries support.
3. ***Roles of local government, communities, and the private sector:*** Decentralization in the 1990s profoundly changed institutional responsibilities for service delivery in Uganda. Local governments -- not MWE, MOH, or MOES – now have the direct responsibility to deliver most water and sanitation services. Water supply maintenance has been largely delegated to communities (and households in the case of most sanitation facilities) in rural areas, and local water authorities in small towns. The private sector provides services and supplies.
4. ***Responsibilities of DWD and NWSC:*** The DWD supports local government water and public works departments, and local Water Authorities, in delivering water and public sanitation services. DWD also continues to implement certain large water supply projects, mostly in urban areas. NWSC has been delegated the responsibility for water and sewerage services in large towns. As a result, public funding for water and sanitation services flows through numerous channels.

Together, these features create a distinctive institutional framework for the Ugandan water and sanitation sector. Understanding this framework is prerequisite to developing a revised pro-poor strategy that will work in the Ugandan context.[13]

2.1 Sector-Wide Approach (SWAp)

Understanding the institutional organization of the water and sanitation sector begins with an appreciation of the key role that sectors play in Ugandan government planning and budgeting.

The Ugandan government began to develop a sector-based approach to planning, budgeting, and monitoring in the 1990s.[14] The results were impressive enough that the World Bank promoted the Ugandan model in other countries as a means to tackle poverty while improving public expenditure management.[15]

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[12] In 2008, the government merged the water and sanitation sector with environment and natural resources to form the Water and Environment Sector, with water and sanitation as a sub-sector. However, this report will continue the common and widespread practice of referring to water and sanitation as a sector, and to any segment of that sector as a sub-sector.

[13] The annual sector performance reports provide a much more complete overview of the institutional framework for the sector. See for example MWE 2013 (pg. 10-15, 41, 66-68).

[14] The description of sectors and Sector Working Groups is based on Magona (2010, pg. 211-220).

[15] The World Bank required countries that received HIPC (Heavily Indebted Poor Countries) funds to form broadly consultative Sector Working Groups, use these groups to develop Poverty Reduction Strategy Papers, and implement Poverty Reduction Strategy Programs to which donors would contribute funding. These were all features developed by the Ugandan government (Whitworth and Williamson 2010, p. 15, 32, passim; Mugambe 2010, pg. 165).

Sectors first assumed a formal place in Ugandan government budgets with the 1997 Medium Term Expenditure Framework, a three year rolling plan which was organized by sectors rather than line ministries. Among other things, sector planning and budgeting were supposed to make clear how the government budget for activities in the sector would contribute to achieving PEAP priorities. Sectors, in other words, created a means to check that that individual ministries and local governments would produce measurable outcomes contributing to the achievement of the national priority to eradicate poverty..

Sectors in this context were deliberately cross-cutting. They were defined based on a government function, not the domain of a single line ministry. The whole concept was to avoid duplication in activities, and encourage coherence and transparency, by grouping together across government units those activities meant to fulfill the same function.

MOFPED further formalized the role and collaborative nature of sectors by creating Sector Working Groups (SWGs).[16] The SWGs are chaired by the lead line ministry. The members of these groups come from a range of relevant ministries, local government departments, donors, NGOs, and the private sector. SWGs are charged with preparing a budget paper to guide the medium term expenditure framework, setting sector policies, reviewing past performance, and defining the outcomes and outputs that the sector will deliver in return for its budget.

Along with these many changes, the MOFPED introduced output-oriented budgeting in 1998, part of a general push to get the public sector to show results.[17] The SWGs were asked to identify measurable performance targets that reflected the policies and plans for the sector, including central government priorities.

Currently, fifteen sectors have sets of quantitative performance indicators and annual targets, and budgets calculated to meet the targets. At the end of the financial year, each sector reports its achievements against these targets, based on data gathered by local governments, line ministries, and agencies. The system works because the majority of local government financing comes from central government grants, and the MOFPED will not release this money until satisfactory progress reports have been submitted to the sector ministry

The procedures for performance review vary from sector to sector. For water and sanitation, key annual events are the publication of the Sector Performance Report and the Joint Sector Review meeting to discuss the report, around October, and the Joint Technical Undertakings Review meeting around April, during which studies requested by the sector review meeting are presented.

The first Joint Sector Review for water and sanitation was held in 2001. Sector performance measurement was raised as an issue in the 2003 review, and later in the same year, MWE and the SWG, with support of a consultant team, began work on a measurement framework (Ssozi and Danert 2012, pg. 9, 11). As a result, a set of "golden indicators" were established for water and sanitation, revised and expanded in subsequent years. Annual achievements against these indicators are published in the Sector Performance Report each year. Annex 2 presents the Golden Indicators and their 2015 targets.

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[16] Collaborative working groups had existed informally in some sectors since the early 1990s, which is how the MOFPED got the idea for SWGs. One of the first such groups was the Inter-Ministerial Committee for Rural Water Supply.

[17] On SWAps and output-oriented budgeting, see Brownbridge et al (2010, pg. 178), in addition to Magona (2010, pg. 212).

Donor participation gave real weight to this approach,. Donors began to move more funding through the government budget, notably the PAF, rather than individual projects directly financed by donors, to support the sector plans.[18] The annual performance review for a sector became the trigger for releasing both government and donor funding to the sector. A sector which developed a good plan, and showed persuasively how it would contribute to eradicating poverty, would get more funding.

This was the heart of SWAp, to replace donor-funded projects with donor support to the government budget, which was then allocated to development programs in the sector. As one observer put it,

> *The SWAP concept involves a quantum change in the way the sector operates, and in the relationship between government and its development partners. There are two key elements to SWAP: the replacement of current project-based approaches with comprehensive sector-wide programmes; and, a move to co-ordinated funding of water and sanitation provision through government budgets* (Robinson 2002, pg. 3-4).

Not all sectors proved equally adept at developing SWAps. The Water and Sanitation Sector was among the best, due to strong technical leadership (Magona 2010, pg. 223-224).

Overall, SWAps have been weakened by the 2003 MOFPED decision that donor sector support would no longer increase the overall budget ceiling for a sector. Without additional funding as an incentive, government units had less incentive to plan together.

2.2 Institutional Responsibilities for Sanitation

While the Water and Sanitation Sector has generally been a model for a well-functioning SWAp, the cross-cutting nature of the sector created some ambiguity as to which institution was responsible for what sanitation activities.

To resolve this, MWE, MOH, and MOES signed a memorandum of understanding (MOU) on sanitation and hygiene promotion in 2001, which laid out the division of responsibilities as follows:

- **MWE** (MWLE at the time): sewerage services and public facilities in towns and rural growth centers
- **MOH**: household hygiene and sanitation
- **MOES**: school latrine construction and hygiene education

In line with decentralization, explained in the next sub-section, the direct implementation responsibilities lie with the corresponding local government departments supported respectively by the ministries.

Thus, the sanitation MDG, and two out of four of the Golden Indicators for sanitation and hygiene, are the responsibility of the MOH and the District Directorates for Health Services. Significant progress toward meeting the target depends on their policies, programs, and staff.

The two remaining sanitation and hygiene Golden Indicators pertain to the latrine coverage and handwashing facilities in schools. The MOES and District Education and Sports Offices are responsible for these facilities along with the rest of the school physical plants

[18] The Poverty Action Fund (PAF) is discussed in Section 1.1.

The MWE, including NWSC, District Water Offices (DWOs), and local Water Authorities are left with a comparatively small role in sanitation: sewerage services; public sanitation facilities in rural growth centres and small towns; and promotion of appropriate on-site sanitation technologies, including EcoSan toilets (MWE 2009, pg. v). In addition, sludge management facilities have become a recent area of concern. Also not mentioned in the 2001 MOU, DWOs include sanitation and hygiene in the training provided to community water committees responsible for the Community Based Maintenance System for rural supplies (explained in the next sub-section).

While the MOU defined a limited role for MWE in sanitation, the importance attached to sanitation overall has risen, due to the impact that improved sanitation could have on health outcomes, particularly maternal and infant mortality. A 2004 Infant and Maternal Mortality Task Force Report and the third PEAP emphasized sanitation for this reason.

With this renewed attention, sanitation came to be treated as an inter-sectoral issue.

> *Government will therefore aim to use the existing administrative structures at district level, supported by the health, water, gender and education sectors, to mount precisely focused and integrated hygiene and sanitation campaigns. Such campaigns, focusing down at the household level, may also productively be linked with other public health interventions such as improved nutrition and precautionary actions against malaria* (MOFPED 2004, pg. 150).[19]

An inter-sectoral Sanitation Working Group was established in December 2003, with the MOH Environmental Health Division acting as secretariat. The 2004 PEAP listed preventative health, including sanitation and hygiene, as a priority for the Health Sector. Sanitation assumed a large role in the work of District Health Inspectors who lead local government environmental health services (MOFPED 2014, pg. 150, 166).

2.3 Roles of Local Government, Communities, and the Private Sector

During the 1990s, the Ugandan government undertook a decentralization reform, which transferred authority and responsibility for a significant number of government functions, including water and sanitation services, to locally elected councils.

2.3.1 Structure of Ugandan Local Government

Table 1 shows the various levels in the local council hierarchies for rural and urban local government.

[19] Note that in this quotation from the 2004 PEAP, MOFPED refers to the "water sector," underscoring that sanitation is viewed as an inter-sectoral issue, and not a sub-sector of the water sector.

Table 1: Rural and Urban Governmental Units and their Corresponding Local Councils

Local Council Level	Rural Government	Urban Government		
LC5	District	City		
LC4	County		Municipality	
LC3	Sub-County	Division	Division	Town
LC2	Parish	Parish	Parish	Parish
LC1	Village	Ward	Ward	Ward

Sources: Local Government Act 1997 (As amended) CAP 243. Kisembo 2006. Personal communication with Martin.Onyach-Olaa, World Bank.

Only district and sub-county councils in rural areas, and municipal and town councils in urban areas, are executive local governments with directly elected councils, budgets, staff, and formal responsibility for service delivery.[20] Local councils at other levels are administrative and consultative bodies. As of June 30, 2013, there were 111 district councils and 187 urban councils (total of town, municipal, and Kampala city councils).

Throughout this report, the local council system has been the basis for defining "rural" and "urban" areas. Rural areas are those which fall under the authority of district and sub-county councils. Urban areas are governed by the Kampala City Capital Authority, or municipal or town councils.

The increasing population size and urban character of some villages present challenges to this neat division between rural and urban in the local council system. Villages with populations over 1,000 may be designated as rural growth centres (RGCs). Their district councils may appoint committees of district staff, called Town Boards, to plan and provide oversight for a RGC. Town Boards, however, are administrative units, not part of the local council system. Eventually, if the RGC grows big enough, it may be gazetted as a town, and move from the rural to urban local government system.

Rural growth centres are considered rural areas in this report, because RGCs remain within the rural government council system.

District, municipal, and town councils have their own local government departments to provide those services which have been devolved to the councils. In principal, the councils can raise revenue to pay for these services, but in practice the possible sources of revenue have been sharply curtailed.

To compensate for the restrictions on local revenue collection, MOFPED provides equalization, unconditional, and conditional grants to the local councils. Conditional grants are the major source of funding for water and sanitation services provided by local government, although the unconditional grants help pay for the local government staff in the water offices.[21] The sector ministries issue guidelines that

[20] Kampala is something of an exception in the way it operates at various levels, especially after parliament replaced the Kampala City Council with the Kampala Capital City Authority. So far, Kampala is the only city in Uganda.
[21] Equalization grants are to improve an agreed upon-set of services in the least-developed districts. Unconditional grants are to meet the minimum cost of providing decentralized services, and may be used by the councils in line

must be followed in using conditional grants. Donors have provided a large share of conditional grant resources, notably through PAF.

2.3.2 Responsibilities of Local Government in Water and Sanitation

Table 3 presents the division of responsibilities between line ministries and the local government departments in water and sanitation. Annex 3 illustrates the relationships among the structures of the ministries and local government, which will be further explained in this and the following sub-sections. The big change brought on by decentralization is that local government has become responsible for water and sanitation service delivery.

Table 2: Responsibilities of Line Ministries Versus Local Government Departments in the Water and Sanitation Sector under Ugandan Decentralization

Line Ministries	Local Government
• Monitoring and Assessment • Planning and Regulation • Advice and Facilitation • Laws and Policies • Quality Assurance and Guidance • Capacity Development • Financial Assistance	• Coordination of management and development activities • Implementation of infrastructure projects and programs • Operations and maintenance • Community mobilization and stakeholder participation • Communication and awareness raising

Note: See also Annex 3.
Source: MWE 2009, pg. 8.

Table 4 lists the local council departments responsible for water and sanitation, and the conditional grants that fund these services. District Health Inspectors, who play such a prominent role in sanitation services at the local level, are within the District Directorate of Health Services (DDHS).

with their own priorities. Conditional grants are to be spent in areas agreed upon by the central government and local councils (Kisembo 2006, pg. 5-8, 37-38).

Table 3: Local Council Departments and Principal Conditional Grants Funding for Water and Sanitation

Departments	Conditional Grants for Water, Sanitation, and Hygiene
District Local Government	
District Water Office (DWO)	District Water and Sanitation Conditional grant (DWSCG) District Sanitation Grant[1]
District Directorate of Health Services (DDHS)	Primary Health Care Conditional Grant Uganda Sanitation Fund[1]
District Education and Sports Office (DESO)	School Facility Conditional Grant
Urban Local Government	
Town/Municipal Public Works Office[2]	Operation and Maintenance (O&M) Grant[3]

[1] Fifteen districts initially received the Uganda Sanitation Fund, which is funded by the Water Supply and Sanitation Collaborative Council (WSSCC). The remaining districts receive a District Sanitation Grant from the central government. Poverty was one of the criteria used, in addition to low sanitation coverage, to select the 30 districts now covered under the Uganda Sanitation Fund Project.

[2] The DWO is nominally in-charge of both rural and urban water supplies that are not under NWSC. In towns and municipalities with gazetted water authorities, a Town/Municipal Public Works Department, or both, the DWO generally leaves this responsibility with those bodies.

[3] The government continues to provide an O&M grant to subsidize connections and to compensate for the higher costs of complex water treatment facilities and power in in certain schemes. However, this grant has been maintained at the same amount for the past decade so as to limit subsidies to existing schemes, and allocate more funds to new construction. Meanwhile, the number of schemes has increased. Consequently, the amount received by any individual scheme has grown quite small.

2.3.3 Responsibilities of Communities and the Private Sector

The 1999 National Water Policy ascribes ownership of rural water supplies (including piped schemes) to the users, whereas urban supplies belong to the central government. The roles of the local communities and private sector therefore differ with respect to rural versus urban water infrastructure (MWLE 1999, pg. 20-21).

The operation and maintenance system for rural supplies is called the Community-Based Management System (CBMS). Under CBMS, the user-owners are responsible for operation and maintenance. They elect a Water Source Committee and select two caretakers for this purpose.[22] The committees collect funds from the communities to pay for repair services and spare parts purchased from the private sector (MWLE 1999, pg. 19-20). MWE updated CBMS in 2011 with a revised national framework in order to

[22] If it is a piped scheme, particularly in a RGC, a Water Supply and Sanitation Board may be formed instead of a water committee.

address problems with a large number of rural supplies that were not fully functioning, and poor environmental sanitation that threatened water quality (MWE 2011).

Central government owns urban supplies with the provision that management be delegated to the relevant authorities, and ownership gradually transferred to user associations or local councils in accordance with performance contracts (MWLE 1999, pg. 21). The 1995 Water Statute provided for the creation of water and sewerage authorities, to which the government could devolve responsibilities.

What this means is that outside the NWSC areas, MWE can gazette a water supply area, and appoint a water authority to handle the various water supply, sewerage, and resource protection responsibilities set out in a performance contract between the authority and MWE. As of June 30, 2013, DWD had signed 104 performance contracts out of the 156 urban areas under its control. (One small town has a water scheme owned and operated by a sugar factory.) DWD retains regulatory responsibility over the water authorities and provides other support (see next sub-section).

The Water Authority then typically establishes a Water Supply and Sanitation Board (WSSB). WSSBs may choose to manage their water supplies directly, or to engage the private sector through management contracts. These contracts may be held by firms (called "private operators" in Ugandan parlance) or private individuals.[23] According to DWD, as of June 30, 2013, 58 schemes had private operators, 21 schemes had individual operators, and 24 schemes were managed directly by the water authorities (MWE 2013, pg. 69).

Another set of local, non-governmental actors is the Umbrella Organizations for Water Supply and Sanitation (UOWS) that have been formed to provide support to piped schemes in small towns and rural growth centres. The UOWS are non-profit organizations, each providing operation and maintenance support to member WSSBs in a different part of the country. By June 2013, there were five UOWS with a total of 307 members, with a sixth UOWS in the process of formation.

2.4 Roles of DWD and NWSC

In general, the role of line ministries under decentralization is to support the relevant local government departments through setting policies and strategies, preparing the budget, advising on technical issues, monitoring and reporting, providing training and human resource development, etc., as explained in Table 3 above.

DWD and NWSC do not fit neatly into this role, because both DWD and NWSC continue to play a significant role in the implementation of infrastructure projects, particularly for urban supplies.

This role is easily explained for NWSC. It is a semi-autonomous corporation under the MWE. The central government created NWSC to manage water and sewerage services in large urban areas. In other words, this responsibility has been taken from local authorities and given to NWSC, with DWD responsible for regulating the corporation. Urban areas with water supplies managed by NWSC are called "large towns," while the remaining urban areas are termed "small towns."

In each large town, the NWSC head office oversees performance through an Internally Delegated Area Management Contract (IDAMC). The areas are financially independent, each with their own manager. Both the IDAMC and staff contracts have performance clauses, with targets such as increase sales,

[23] Hirn 2013 describes the private operator model and experience in Uganda in considerable detail. Also, Section 7.1.1 provides some additional detail on small town water supply management.

billing, and revenue collection; reduce nonrevenue water; increase the number of customers, increase productivity and cut costs; and increase and ensure customer satisfaction. (WSP 2013, pgs. 9-11).

The roles of DWD in direct implementation are less easily explained, as they vary by department. DWD is one of three directorates in MWE.[24] DWD itself comprises three departments, respectively for water for production, urban water supply and sewerage, and rural water supply and sanitation.

Water for Production Department (WfPD)

In Uganda, "Water for Production" refers to the development and utilization of water resources for productive use in crop irrigation, livestock, aquaculture, rural industries and other commercial uses. This responsibility is divided between the agriculture ministry and MWE. The former is responsible for "on-farm" activities, such as irrigation networks systems and water use management in crop production. MWE/WfPD is responsible for "off-farm" activities such as the bulk transmission of water to irrigation systems, and water for livestock and fish ponds.

The activities which WfPD undertakes in respect to livestock are the construction and rehabilitation of earth dams and valley tanks in the cattle corridor, a swath of districts through which pastoralists migrate their livestock. WfPD also owns earth-moving equipment which it rents out to individual farmers at a subsidized rate in order for them to construct valley tanks. Finally, the department has designed over 85 multiuse water projects and is currently seeking funding for these. If these projects go forward, WfPD would have a significant role in rural domestic water supply in certain poorly served areas, as just one of these projects has a design population of 35,000.[25]

WfPD handles directly the implementation of large dams and bulk water transfer systems. DWOs construct valley tanks under 10,000 cubic meter capacity (except in Karamoja where the upper size is 20,000 cubic meters). DWOs may use the DWSCGs for this, but the design must then include a means for safe domestic drinking water provision. Farmers who hire the department's equipment to build valley tanks provide significant private investment.

Urban Water Supply and Sewerage Department (UWSSD)

UWSSD acts on behalf of MWE in delegating the management of small town and RGC water supplies to local Water Authorities, and supporting WSSBs in various ways. The previous sub-section briefly described how delegation works for urban water supplies.

In addition, UWSSD still controls nearly all piped scheme construction in small towns and RGCs. Funding for most small town piped networks goes through four Water and Sanitation Development Facilities (WSDFs) under UWSSD. The department has created four WSDF Branch Offices, which operate like "mini-UWSSDs" in different parts of the country to handle procurement, engineering design, financing, etc. for these schemes. The UWSSD also implements directly some stand-alone piped scheme investment programs. Due to significant donor funding for WSDFs, UWSSD plays a relatively large role in direct implementation.

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[24] The other two are the Directorate for Water Resources Management, and the Directorate for Environmental Affairs.

[25] A typical tank or earth dam does not constitute an improved drinking water source for households, but the multipurpose schemes would provide safe domestic water.

Rural Water Supply and Sanitation Department (RWSSD)
Unlike UWSSD, RWSSD controls a fairly small portion of the funding to its sub-sector. Instead, funding goes mostly to the DWOs as conditional grants. Thus, RWSSD does not play the large role in implementation of new supplies that UWSSD does through the WSDFs.

For this reason, the major role of RWSSD is to support the DWOs.. Toward this end, the department has established eight regional Technical Support Units (TSUs) in different parts of the country.

RWSSD directly manages construction of large rural piped scheme projects, or ones that cross several districts, and two programs for borehole and piped supplies for internally displaced persons. However, the funding for these programs is relatively small compared to the district water and sanitation conditional grants.

Table 5 illustrates the relative size of funding through districts versus UWSSD and RWSSD for one year. Note the tremendous flow of funding through WSDFs for small town and RGC piped scheme construction. Twenty such schemes were commissioned in 2013/14 alone.

Table 4: Budget 2012/13 for Rural and Small Town Water Supply

Institution	**Funding**	**Budget** *(UGS billions)*
Local Government		
District Water Office	DWSCG	60.333
Town Public Works	Urban O&M Grant	1.503
Local Government Sub-total		**61.84**
MWE/DWD		
RWSSD	Internally Displaced Persons	11.500
	Internally Displaced Persons	0.666
	Support to RWS	10.930
	RWSD Sub-total	***23.096***

Institution	**Funding**	**Budget** *(UGS billions)*
UWSSD	WSDF-North (Government)	1.463
	WSDF-North (Donor)	7.585
	WSDF-East (Government)	1.760
	WSDF-East (Donor)	7.254
	WSDF-Central (Government)	4.123
	WSDF-Central (Donor)	16.970
	WSDF-SW (Government)	1.000
	WSDF-SW (Donor)	9.499
	UWSSD Sub-Total	***49.654***
	DWD Subtotal	**72.75**

Notes: The above figures represent an approximate estimate of central programs for rural and small town water and sanitation construction activities, excluding the policy, monitoring, and capacity-building support provided to local government. However, the MWE budget votes do not allow this to be done with any great precision. For example, Vote 0163 (Support to RWS) mixes funding for large piped schemes and TSU support to DWOs.
Source: MWE 2013, pg. 41-43, 66-60, 129-130, Annex 2.

PART II: SITUATION OF THE POOR AND BOTTOM 40%

3. Poverty in Uganda

This section defines poverty and how it is measured in Uganda, and gives figures on the number of poor and economically disadvantaged people in different parts of the country.

Agreeing on the definition and location of poverty is critical to a successful pro-poor strategy. A 2009 review found that DWD was not targeting its urban projects on the poor because DWD staff assumed that virtually anyone living in a small town was poor (Denzinger 2009, pg. 48). Similarly, many stakeholders in Uganda assume that almost everyone living in rural areas or the informal settlements of large towns is poor.

The data presented in this section show just how wrong those assumptions are.

3.1 Definition and Measurement of Poverty in Uganda

This report uses two definitions of poverty: "the poor" and "the Bottom 40%."

Briefly, *the poor* (or *poor people*) refers to Ugandans living below the poverty lines defined by the Ugandan Bureau of Statistics (UBOS). The *Bottom 40%* (or *the economically disadvantaged*) refers to Ugandans who comprise the poorer 40% of the national population, arrayed based on level of monthly consumption expenditures.[26]

The statistics in this report on poor people and the Bottom 40% are from the 2012/13 Uganda National Household Survey (UNHS). UBOS has conducted a national household sample survey of about 7,000 households every two years since 1999, with the latest survey conducted in 2012/13. Information from UNHS provides the basis for UBOS estimates of household and individual monthly consumption expenditures.

The absolute poverty line for Uganda was established in 2001 based on the basket of food and nonfood items necessary to meet basic needs (Appleton 2001). In fact, there are eight poverty lines established, separate ones for the rural and urban areas in each of the four regions (Kakande 2010, pg. 234-235).

Estimates from UNHS data are subject to sampling error, as is any estimate of a population parameter based on sample data. However, the UNHS sample size is large enough to provide very reliable and valid estimates at aggregated levels such as the nation or region. This section presents estimates mostly at this high level of aggregation, and so we have great confidence that these statistics give the true picture of poverty in Uganda.[27]

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[26] The DWD Steering Committee on the Pro-Poor Strategy directed the authors to define poverty based on the Uganda poverty lines. The participants in the September 2014 National Stakeholder Workshop on the Pro-Poor Strategy concurred with this decision. Strictly speaking, the Bottom 40% is not a definition of poverty, but of the economically disadvantaged. The authors have added information on the Bottom 40% to the report for reasons outlined in Box 1.

[27] Statisticians may wish to consult UBOS 2013, Appendix 1 for precise information on the sampling error in the 2012/13 UNHS statistics. The next section of the report will present statistics at a more disaggregated level, and report 95% confidence intervals as a means to provide more reliable estimates of the various population parameters. Survey data are also susceptible to non-sampling error during data collection, recording, and analysis. The long and broad experience of UBOS in survey research serves to minimize UNHS non-sampling error.

Box 1: Two Ways of Defining Poverty

This report uses two concepts for defining poverty.

1. The Poor, *also* **Poor People:**

Both terms refer to people living below the poverty lines established by the Uganda Bureau of Statistics (UBOS). In 2013, Uganda had about 6.7 million poor people, or 19.7% of a national population of 34.1 million.

UBOS has established poverty lines for the rural and urban areas in each region, based on the estimated cost per month in that area to provide food and nonfood basic needs the latter covering such items as transport, rent, education, and healthcare.

The poverty lines range between USh.32,106 and USh.28,165 per month for an adult, in constant 2005/06 prices, depending on the region and rural versus urban areas. Annex 4 presents detailed information on Uganda's poverty lines.

2. The Bottom 40%, *also* **Economically Disadvantaged:**

Both terms refer in this report to the poorer 40% of the national population, arrayed based on level of household consumption expenditures.

The Bottom 40% comprises 13.6 million persons in 2013, or the roughly 20% of the Ugandans who are poor, plus the 20% of people who live just above the Uganda poverty lines.

The expenditure line separating the Bottom 40% from the Top 60 % is USh.41,187 per month for an adult in constant 2005/06 prices.

There are three compelling reasons to include the Bottom 40% in discussing poverty in Uganda.

- Some analysts argue that the UBOS poverty lines are set below the actual minimum expenditures necessary to meet basic needs.
- Significant numbers of households (particularly in rural areas) move back and forth across the poverty line. Thus, a household which is non-poor today may well be poor again in the future (Ssewanyana and Kasire 2012, pg. 14, 16).
- The World Bank Group defines extreme poverty as living on less than USD 1.25 per day, which is significantly higher than the Uganda poverty lines (all under a dollar per day).

3.2 The Ugandan Population in 2012/13[28]

Most Ugandans live in rural areas: 26.4 million people representing 77% of the national population.

Uganda has an unusually large share of its population in rural areas by current international standards. In 2013, the comparable statistic was 63% for low and middle income countries in Sub-Saharan Africa, and 70% for low income countries globally. The percentage share of the rural population in Uganda would be even higher except that the government recently reclassified numerous rural settlements as urban areas, when 32 new districts were created.

The remaining 23% of the population comprises the 7.7 million people living in legally gazetted urban areas, that is, the city of Kampala, municipalities, and towns.[29] Almost two-thirds of the urban population lives in small towns. Kampala accounts for close to half the population living in the thirty large towns.[30]

3.3 The Poor in Uganda

In 2013, almost 6.7 million people, or 19.7% of the Ugandan population, lived below the Ugandan poverty lines.

This represents a significant achievement for Uganda in bringing down the incidence of poverty in the country. In 1992, 56% of the Ugandan population lived in poverty (Tsimpo and Wodon, 2014, Table 2.1). The previous UNHS (2009/10) found 8.4 million people, or 24.5% of the population, in poverty.

Poverty is largely concentrated in rural areas. Of the 6.7 million poor people, 6.0 million live in rural areas. Since so many Ugandans live in rural areas, it makes intuitive sense that the majority of people at every income level live in rural areas. However, poverty is also disproportionately concentrated in rural areas, as Figure 1 shows. While 77% of Ugandans live in rural areas, 89% of poor Ugandans live there. The urban poor live mostly in small towns, that is, 600,000 out of the slightly less than 700,000 urban poor.

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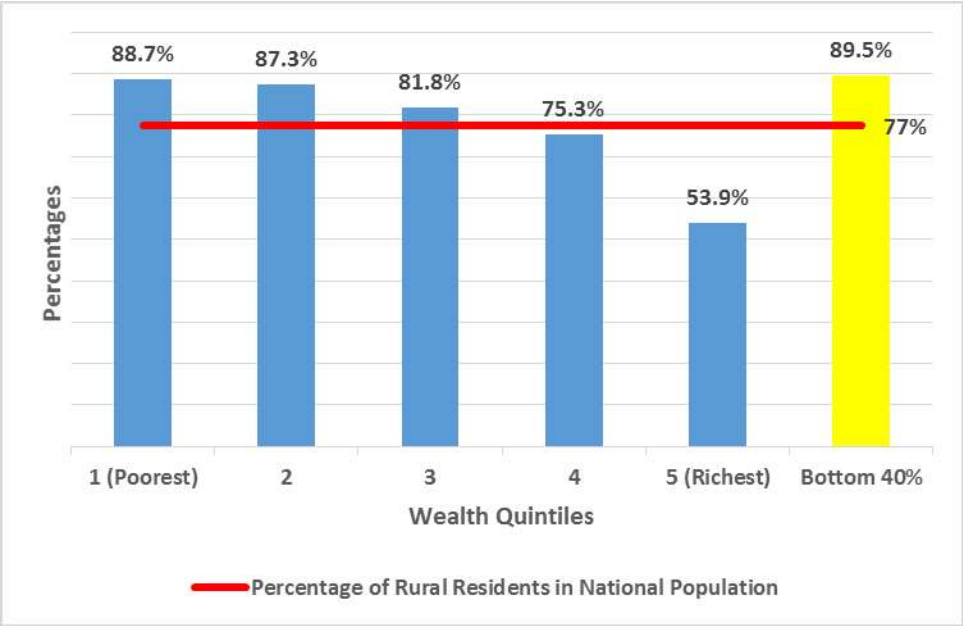
[28] This section pulls key statistics from Annex 7, which presents tables providing a more complete overview of the geographical distribution of the poor and Bottom 40% across Uganda.

[29] See Section 2.3 for a more detailed explanation of Ugandan rural and urban local government system, which is the basis for the definition of "rural" and "urban" in this report.

[30] *Large towns* comprise the urban areas where NWSC manages the water supply. *Small towns* are urban areas where DWD and local water authorities manage the water supplies. See Annex 5 for a list of small and large towns as defined in this report.

Figure 1: Percentage of Rural Residents in each Wealth Quintile, Uganda, 2012/13



Notes: Each quintile corresponds to 20% of the population, arrayed based on estimated income from poorest to richest. Each bar represents the percentage of persons in that quintile living in rural areas (e.g., 54% of people in the richest quintile live in rural areas). Quintile 1 corresponds approximately to Ugandans living in poverty. The last bar combines quintiles 1 and 2 to indicate the rural residents in the Bottom 40%. The red line indicates the percentage of rural residents in the national population.

Source: Graphic produced by Fredrick Tumusiime based on calculations by Clarence Tsimpo Nkengne from 2012/13 UNHS data.

The overwhelming majority (84%) of poor people live in Eastern and Northern Regions. Poverty is high in northern Uganda primarily due to the huge income impact from prolonged armed conflict there. Poverty is low in the central region, because people living in Kampala tend not to be poor. This degree of regional inequality is unusual in East Africa. Only Kenya has greater disparities among its regions (Fox et al 2008, pg. 6).

Poverty in Northern and Eastern regions is concentrated in rural areas. About three-quarters (5.1 million) of Uganda's poor people are located in the rural areas of these two regions. The rural poverty rates in those areas are the highest in the country: 26% in rural Eastern Region; and 47% in rural Northern Region, compared with less than 10% in the rural areas of the other two regions.

Similarly, the vast majority of urban poor people live in Eastern and Northern Regions (600,000 people or over 85% of the urban poor). Urban poverty rates are not as severe as rural poverty rates in these two regions, but much higher than urban poverty rates in Central and Western Regions.

Box 2: Uganda's Poor At a Glance

National Poverty: 19.7% of the national population is poor

- 6.7 million poor people live in Uganda
- 6.0 million poor people live in rural areas
- 5.6 million poor people live in Northern and Eastern Regions

Rural Poverty: 89% of poor people live in rural areas

- 6.0 million poor people live in rural areas
- 5.1 million poor people live in the rural areas of Eastern and Northern Regions
- 22.8% of rural people are poor

Urban Poverty: 11% of poor people live in urban areas

- 0.7 million poor people live in urban areas
- 0.6 million poor people live in small towns
- 0.6 million poor people live in the urban areas of Eastern and Northern Regions
- 9.3% of urban people are poor

Source: See Annex 7

These numbers tell only the beginning of the story about where poor Ugandans live. Two additional types of statistics, not available at the time of this report, are needed in order to get the full narrative of poverty and residence in Uganda.

First, statistics on poverty at the sub-county level are necessary, because poverty can vary significantly within the same region and even the same district.[31] For example, in the Northern Region in 2005, four sub-counties had poverty rates between 30% and 40%, while two others had poverty rates over 92% (UBOS et al 2007, pg. 12). The other regions demonstrated even more variability in poverty rates among sub-counties in 2005. This means, for example, that some sub-counties in Central and Western Regions may have poverty profiles that resemble specific sub-counties in Northern and Eastern Regions.

Unfortunately, sample size prevents disaggregating statistics from the UNHS to these levels. UBOS can get around this limitation by using small area estimation, a method for combining national census and UNHS data (UBOS *et al* 2007). Updated poverty statistics at the district and sub-county will become available in late 2015, when UBOS completes its analysis of the 2014 national census.

Second, additional types of district and sub-county poverty statistics would tell a more complete story about poverty. For example, the headcounts (statistics on the numbers of poor people) and poverty rates which have been reported above indicate nothing about whether poor people in an area live way below the poverty line or just a little below it. UBOS *et al* 2007 (pgs. 11-19) provides an excellent illustration of how the perception of poverty changes depending on which poverty measure is used.

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[31] Districts are divided into sub-counties, the lowest level of elected local government in Uganda. Sub-counties are divided into parishes for administrative purposes. See Section 2.3 for additional explanation of Uganda's administrative and local government hierarchy.

One type of additional poverty statistic, not presented in this report, is particularly useful for planning targeted water and sanitation investments. This is the poverty gap measure, which provides information on the depth of poverty in a given area. It measures the degree of poverty desperation. In other words, this statistic quantifies how far below the poverty line the poor people in an area are (UBOS *et al* 2007, pg. 18).

3.4 The Bottom 40% in Uganda

The Bottom 40% in Uganda corresponds to 13.6 million persons. Their location within Uganda follows the same patterns as for poor people, who indeed comprise about half of the Bottom 40%.

The Bottom 40% lives mostly in rural areas. Out of the 13.6 million people in the Bottom 40%, rural residents account for 12.2 million (almost 90%). As discussed above, the majority of every wealth quintile lives in rural areas. However, the Bottom 40% lives disproportionately in rural areas, as Figure 1 shows.

The urban residents within the Bottom 40% live mostly in small towns. Out of the 1.4 million urban residents in the Bottom 40%, 1.2 million live in small towns, or about 24% of the total population of small towns. Thus, while most of the urban Bottom 40% live in small towns, most small town residents belong to the Top 60%. The overwhelming majority of large town residents are in the Top 60%.

Box 3: Uganda's Bottom 40% At a Glance

National: Poorest Two Wealth Quintiles

13.6 million people comprise the Bottom 40% in Uganda

9.9 million people in the Bottom 40% live in Northern and Eastern Regions

Rural Areas: 89.5% of people in the Bottom 40% live in rural areas

12.2 million people in the Bottom 40% live in rural areas

46% of rural people belong to the Bottom 40%

8.9 million people in the Bottom 40% live in the rural areas of Eastern and Northern Regions

Urban Poverty: 10.3% of people in the Bottom 40% live in urban areas

1.4 million people in the Bottom 40% live in urban areas

18% of urban people belong to the Bottom 40%

1.2 million people in the Bottom 40% live in small towns

1.1 million people in the Bottom 40% live in the urban areas of Eastern and Northern Regions.

Source: See Annex 7

4. Access to Water and Sanitation in Uganda

This section examines Uganda's performance in providing the poor and Bottom 40% with a single aspect of service delivery: providing access to improved water supply and sanitation facilities. Other aspects of service delivery, such as cost, water quality, convenience, and reliability, will not be reviewed.

The reasons for this focus on access are twofold.

First, both the MDGs and Uganda's national objectives set targets for increased access to safe water and household sanitation. This was done due to the well-documented benefits for health and productivity from improved access.[32]

Second, clear-cut definitions for improved water and sanitation access have been agreed upon, both within Uganda and internationally, and data to measure progress in providing access have been collected. This section can therefore draw upon data from MWE, WHO-UNICEF Joint Monitoring Program for Water and Sanitation (JMP), and UNHS to describe access in Uganda as a whole, in different locations, and for the poor and economically disadvantaged.[33]

The first sub-section looks at progress in providing access to the population as a whole, and the subsequent sub-sections at serving the poor and Bottom 40% specifically.

4.1 Progress Toward MDGs and National Objectives

The Uganda national targets for the MDGS are are 72% coverage with improved water and 70% coverage with improved household sanitation.

The Ugandan government set even more ambitious national objectives, of 80% coverage for both safe water and improved sanitation.[34] Similarly, the government sets higher specific targets for rural and urban coverage than do the MDGs (see Table 6).

Estimates of Uganda's progress toward meeting the MDGs vary, depending on the data source. JMP compiles estimates for most countries in the world. The latest available JMP estimates for Uganda are for 2012, and indicate that Uganda had already meet the MDGs for improved water access, but were far behind in reaching the sanitation access targets (see Table 6).

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[32] See Tsimpo and Wodon 2014b, Chapter 2, for a review of this literature.

[33] It is possible to use UNHS data to explore some additional aspects of water service delivery. Tsimpo and Wodon 2014a, for example, have analyzed the affordability of various types of connections to piped water schemes.

[34] The Ugandan constitution and the 1999 National Water Policy state that the national objective is to provide sustainable access to safe water and hygienic sanitation facilities to all Ugandan citizens. In recognition that this objective cannot be attained immediately, various targets have been set over the years. The current targets for water and sanitation access were set in the 2010 National Development Plan (NDP) (NPA 2010, Table 4.15, pg. 72). MWE publishes complete information on progress toward these and other targets in an annual Sector Performance Report (for example MWE 2014).

Table 5: 2015 MDG Targets and Achievements for Ugandan Water and Sanitation Access

Circles highlight MDG Targets Compared to Achievement

Sub-Sector	MDG Targets	Progress				
		MWE/MOH Estimates		JMP Estimates (2012)		
Water		**2012**	**2014**			
National	**72%**	Not available		**75**		
Rural	*70*	*64*	*64*	*71*		
Urban	*89*	*69*	*73*	*95*		
Sanitation				**Improved**	**Shared**	**Shared+ Improved**
National	**70**	Not available		**34**	**23**	**57**
Rural	*70*	*69.6*	*74*	*34*	*17*	*51*
Urban	*68*	*81*	*84*	*33*	*50*	*83*

Notes: The sanitation figures for shared access are shown, as the JMP decision to consider shared facilities of any standard as unimproved sanitation facilities has been controversial. MWE prepares the estimates for water access, and MOH does the same for sanitation access. These estimates are presented in the annual sector performance report, published by MWE.

Sources: JMP 2014. MWE 2014.

Uganda ministry estimates tell the opposite story about progress toward the MDGs. MWE estimates of rural and urban water access in 2014 were below the MDG targets, while MOH indicated that the MDG sanitation targets had been met (see Table 6).

The discrepancy in regard to improved water access may stem largely from a difference in definition. JMP defines "improved water access" as the number of people using any type of water supply facility that JMP has designated as improved. MWE defines this term as the design population of constructed water infrastructure. In other words, the MWE access rate is the total design population of all improved supplies in an area, divided by the area population. To calculate the design population, MWE uses its standards for the population served by each type of improved water supply technology, e.g., 300 persons per handpump, 150 persons per public piped scheme tap. (MWE 2013, pg. 49-50).

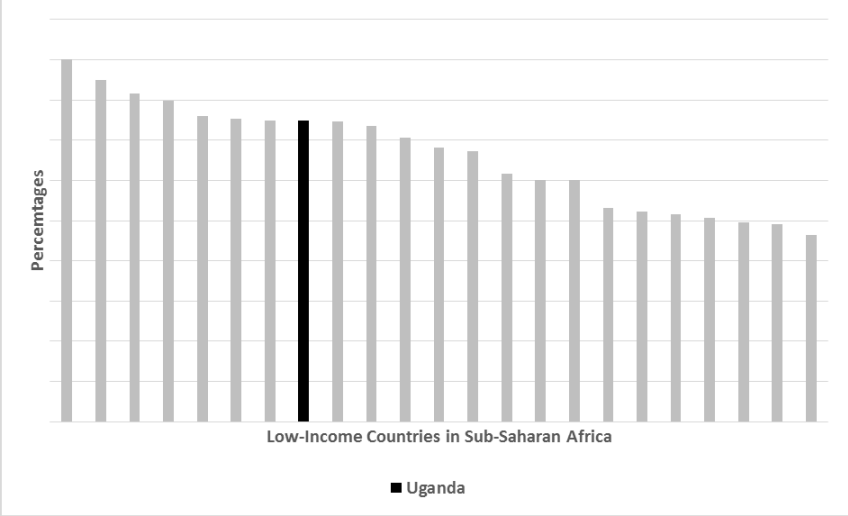
The discrepancy in regard to improved sanitation coverage seems to come from the way in which data are collected and defined. JMP estimates are based on household responses to questions administered in a sample survey or census. The MOH data reflect the reported observations of district health staff and village volunteers. Kleemeier and Nattabi (2013, pg. 8-9) describe the considerable challenges faced by MOH in collecting valid and reliable data in this way, including the discrepancies across districts in how improved facilities are defined.

By any measure, Uganda has done quite well in meeting its MDG targets compared to similar economies in Sub-Saharan Africa. Out of the twenty-three low-income economies in Sub-Saharan Africa, Uganda and Guinea tie for seventh place in regard to the population share with access to improved water. This

puts Uganda well ahead of its neighbors: Kenya (14th place), Tanzania (17th place), Ethiopia (19th place) and Chad (20th place). See Figure 2 and Annex 8 for more information on these comparisons.

Figure 2: Improved Water Access: Percentages of National Populations with Access for Low-Income Countries in Sub-Saharan Africa

Vertical axis is percentage of the national population with access to improved water supplies

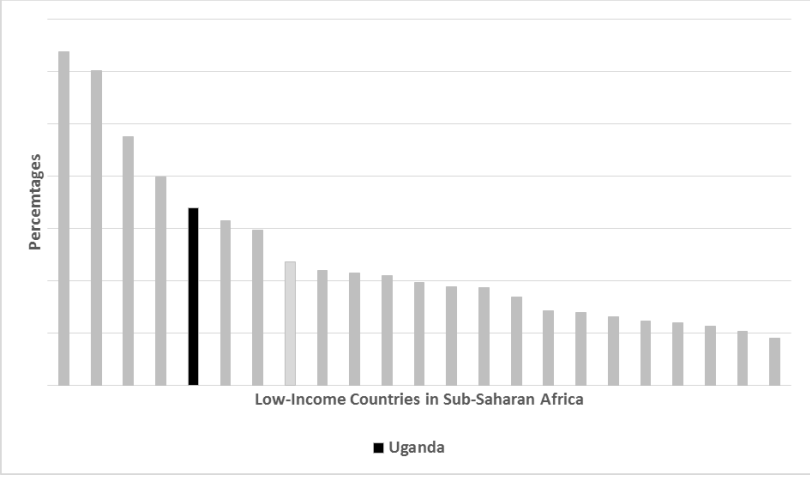


Source: See Annex 8.

Uganda does even better in international comparisons of improved sanitation coverage, as Figure 3 shows. Uganda ranks fifth in this respect, out of the same twenty-three countries.

Figure 3: Improved Sanitation Access: Percentages of National Populations with Access for Low-Income Countries in Sub-Saharan Africa

Vertical axis is percentage of the national population with access to improved sanitation facilities



Source: See Annex 8.

4.2 Using 2012/13 UNHS to Analyze Access

The remaining sub-sections examine water and sanitation access in Uganda in more detail, using data from the 2012/13 UNHS. Improved water access and improved sanitation access are defined in line with the JMP definitions for basic access. Annexes 9 and 11 show how UNHS data have been recoded to create access variables for the analysis.

The advantage in using UNHS is that it permits examining access for the poor and Bottom 40%. To maintain consistency, UNHS is also used to examine access for residents as a whole in rural and urban areas, large and small towns, and regions, even though MWE and MOH data would work for this purpose.[35]

Using UNHS has two implications.

First, UNHS likely gives a more optimistic picture of improved water access, and a more pessimistic view of improved sanitation access, compared to an analysis based on MWE and MOH data. As the previous sub-section explained, the different data sets tell opposite stories about progress toward the MDGs.

Second, UNHS provides sample data, which introduces the problem of sampling error when comparing access rates for different groups of people at a disaggregated level (see *Box 4: Sampling Error and Confidence Intervals*). To compensate for sampling error, this confidence intervals are given in the annexes for all statistics. When confidence interval estimates are very large, it signals that the sample size was too small and the single point estimates should be dismissed as well.[36]

Box 4: Sampling Error and Confidence Intervals

Imagine a sample of 100 people selected at random from an auditorium of 1,000 people. You would not expect the average age of those 100 people to be exactly the same as the average age of all 1,000 people in the auditorium. You are only taking a sample because it is less work than collecting data on all thousand people. The sample average is a cost-effective way to estimate the population (all 1,000 people) average, but the two averages are unlikely to be identical.

By the same token, we do not expect that any statistics calculated from data on the 7,000 households in the UNHS sample to be identical to the statistics that would be obtained, if one had data on all 7 million Ugandan households.

This difference is called sampling error, the discrepancy between results calculated from data on a sample versus the results if one had data from the entire population.

The sampling error in UNHS is minimal for statistics calculated at the national or regional levels, especially for a single variable (e.g., percentage of poor people in Uganda). For that reason, the UNHS statistics were reported in the last section without attempting to correct in any way for

[35] MWE and MOH actually provide more detailed estimates on access by location. The annual sector performance reports publish access statistics for every district, and at the district level the data may be available down to the sub-county level. However, there is no way to analyze these data by income level. UNHS, by contrast, has data from each sampled household on its monthly consumption (proxy for income), principal source of drinking water, and type of toilet used by the household.

[36] For example, UNHS data indicate that 9-64% of poor households in large towns use piped schemes as their principal source of drinking water. This wildly huge confidence interval shows that UNHS contains too few poor households using piped schemes in large towns to estimate this percentage. Therefore, even the point estimate (30%) should not be taken seriously.

sampling error. (Die-hard statisticians were directed to UBOS 2013, Appendix 1, for detailed information on sampling error in 2012/13 UNHS.)

However, sample error cannot be ignored when examining relationships among several variables at more disaggregated levels (e.g., the percentage of households using an improved water source in the rural areas of Central Region). This section examines precisely these types of relationships.

To get around the sampling error problem, this section and the accompanying annexes provide the confidence intervals for UNHS statistics on access. A confidence interval is a range of numbers (like 2-5% or 50-55%) rather than a single number. The true population figures are highly likely to fall somewhere within that range. All confidence intervals in this report are calculated at the 95% level.

For example, according to UNHS data, 50% of rural households in Central Region use an improved water source. The confidence interval for this statistic is 43%-56%. In other words, we are very sure that the actual percentage of all rural households in Central Region using an improved water supply is somewhere between 43% and 56%. Single point estimates, like 50%, are handy. Confidence intervals, like 43-56%, are more reliable.

Of course, confidence intervals only adjust for sampling error, not other types of errors that can affect survey research.

4.3 Improved Water Access

Uganda has met the MDGs for improved water access in 2012, according to JMP.[37] These estimates only describe access for the country as a whole, and for urban and rural areas as aggregated totals.

Annexes 10-12 provide a more disaggregated view of improved water access, by examining UNHS data broken down by residence, poverty, and wealth quintile. The broad trends revealed by those data are summarized below. Note that these are responses to the UNHS survey question, "What is the principal source of drinking water for your household?" The percentages reported below and in the annexes do not capture that households may use additional sources for drinking water, and that they may use the indicated sources only for drinking and not for other domestic uses.

Nationally, 73% of households use improved water supplies: 68% in rural areas, and 86% in urban areas.[38]

Use of improved supplies varies by region, with this use highest in Eastern Region (86%) and lowest in Western and Central Regions (64% and 65%). Central Region has a huge gap between improved water use in rural versus urban areas (50% versus 84%), suggesting that the low rural access has dragged down the overall regional rate of improved water use. The use of improved water sources in the rural areas of Central Region is the worst in the country, followed closely by the rural areas of Western Region.

Piped scheme water use is extremely limited in Uganda, and predominantly an urban phenomenon. Nationally, 19% of households use piped water. However, that percentage falls to 9% in rural areas and rises to 48% in urban areas. In large towns, 72% of households use piped schemes, but in small towns

[37] As Section 4.1 explained, MWE access estimates tell the opposite story.

[38] The annexes present the point estimates with their confidence intervals. Point estimates alone are used in the text, unless large confidence intervals indicate that the point estimates are highly unreliable. In this case, for example, 64-71% of rural households and 83-89% of urban households use improved supplies, indicating at minimum a 12% difference (83% minus 71%) in the rate at which rural versus urban households use improved water supplies.

only 33%. In rural areas, piped scheme use is highest in Western Region, where 20% of households use piped water for drinking. Piped scheme use is much lower in rural areas elsewhere: 2% (Northern Region), 5% (Central Region), 7% (Eastern Region).

In urban areas, piped schemes are used predominately by the higher income groups. For example, 51% of the urban non-poor use piped schemes compared to 15% of the urban poor. These percentages on use are almost identical for the Top 60% versus the Bottom 40% in urban areas. Sample size prevents analyzing how income affects piped scheme use in the urban areas of the regions. In Northern Region, statistics show that a gap in use definitely separates the non-poor/Top 60% from the poor/Bottom 40%, the sample is still too small to estimate reliably the size of the gap.

Conversely, boreholes remain the principal technology for delivering improved water in Uganda.[39] Nationally, 35% of households get their water from a borehole, 40% of rural households and 22% of urban households. Only in large towns are boreholes fading as the principal type of improved water supply, in that only 6% of households use them as their drinking water source. In small towns, identical percentages (33%) of households get their water from boreholes versus piped schemes.

Boreholes remain by far the predominant drinking water source in Eastern and Northern Regions, both because boreholes are the principal water sources in rural areas, and continued to be used to a significant degree in urban areas, especially in Northern Region.

Given this predominance, it is hardly surprising that boreholes are the principal type of water supply used by the poor and Bottom 40%, both in rural and urban areas. This is part of the great success story in Uganda, that the majority of households in poverty and the Bottom 40% get their drinking water from a borehole rather than an unimproved supply.

Further analysis by large and small towns, regions, and rural and urban areas within the various regions, still indicates boreholes as the principal technology used by the poor and Bottom 40% to get their drinking water.

Addendum on Convenience

The focus in this report is on access, for reasons explained in Section 1.4. However, UNHS does lend itself to analyzing one additional aspect of service delivery, convenience. In the tables below, convenience is defined as the amount of time it takes a household to collect water, that is, go back and forth to the water sources, and any time required to wait at the source.

The results show that non-poor and Top 60% have more convenient water sources overall, and in both rural and urban areas. However, the differences in convenience are not dramatic except in urban areas. Much larger percentages of the non-poor and Top 60% collect their water in under 30 minutes, and smaller percentages require more than 60 minutes, compared to the poor and Bottom 40%. This is undoubtedly true, even though the estimates of collection time by the latter groups lack precision due to the reoccurring problem of sample size.

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[39] "Borehole" is a Ugandan term referring to handpumped supplies, whether the handpump is fixed to a machine-drilled borehole, a manually drilled borehole, a deep well, or a shallow well.

Table 6: Collection Time From Improved Water Supplies: Percentage of Households By Rural-Urban Residence and Poverty Status

Collection Time	National		Rural		Urban	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Under 30 minutes	**49**	**37**	**37**	**35**	**72**	**51**
95% Confidence Intervals	*47-52*	*32-42*	*34-41*	*30-40*	*67-76*	*38-64*
30-60 minutes	**24**	**26**	**30**	**27**	**14**	**21**
95% Confidence Intervals	*22-26*	*23-30*	*27-32*	*23-31*	*11-17*	*13-34*
Over 60 minutes	**27**	**37**	**33**	**38**	**14**	**28**
95% Confidence Intervals	*24-29*	*32-42*	*30-36*	*33-43*	*12-18*	*18-39*

Note: Collection Time is the total time to and from improved supply, and waiting time at supply. See Annex 9 for definition of improved supplies.
Source: Calculations by Clarence Tsimpo Nkengne from 2012/13 UNHS data.

Table 7: Collection Time From Improved Water Supplies: Percentage of Households By Rural-Urban Residence and Top/Bottom Wealth Quintiles

Collection Time	National		Rural		Urban	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Under 30 minutes	**54**	**34**	**40**	**33**	**74**	**45**
95% Confidence Intervals	*51-57*	*31-38*	*37-44*	*29-37*	*69-78*	*37-53*
30-60 minutes	**22**	**29**	**28**	**30**	**13**	**21**
95% Confidence Intervals	*20-24*	*26-32*	*26-31*	*27-33*	*10-17*	*15-30*
Over 60 minutes	**24**	**37**	**32**	**37**	**12**	**33**
95% Confidence Intervals	*21-26*	*34-40*	*28-35*	*33-41*	*10-15*	*26-42*

Note: Collection Time is the total time to and from improved supply, and waiting time at supply. See Annex 9 for definition of improved supplies.
Source: Calculations by Clarence Tsimpo Nkengne from 2012/13 UNHS data.

4.4 Improved Sanitation Access

Uganda has not met the MDGs for improved sanitation access. [40] The results in Annex 14 no doubt reflect in part that the analysis used the high standard incorporated in the original JMP definition of "improved sanitation."

[40] As Section 4.1 explained, MOH access estimates tell the opposite story.

Such low use of improved sanitation by all income levels makes it generally impossible to use UNHS data to analyze differences in use by various income groups. Only the data for Central Region show large and statistically significant greater use of improved sanitation by the non-poor and Top 60%. In Western Region, the Top 60% also use improved sanitation more, but the difference in use compared to the Bottom 40% is not so large as in Central Region. Also, the figures for improved sanitation use by the poor versus non-poor in Western Region are anomalous, further underscoring how limited statistical results are when the sample contains very few cases that can be analyzed.

PART III: REVIEW OF THE PRO-POOR STRATEGY AND PRACTICES

The sections in Part III review the implementation of the pro-poor actions in the 2006 *Pro-Poor Strategy for the Water and Sanitation Sector*. Section 1.4 explained the purposes and parameters guiding this review, and Section 1.3 provided an overview of 2006 strategy document.

5. Funding

Uganda succeeded in dramatically reducing poverty rates over the past two decades by allocating greater amounts and shares of government and donor resources to sectors and activities with a high impact on poverty, including water and sanitation services.[41]

Yet, the allocation of resources among the sub-sectors within the water and sanitation sector has remained a source of concern, particularly the share going to rural water supply.[42]

The second PEAP raised the priority of rural water supply when participatory assessments made clear that poor people placed much higher value on improved water supplies than central planners had acknowledged in the first PEAP.

The third PEAP re-iterated this concern, noting,

> "*the delivery of water to the rural population remains a major challenge*. *During the second PEAP, public spending on rural water supply increased, but costs also increased. Safe water coverage had mildly improved from a rural coverage of 49.8% in 2000 to 54.9% in 2002 while urban coverage rose from 54% in 2000 to an estimated 60%-65% in 2003.* " (MOFPED, pg. 28)

The 2004 PEAP concluded, "*In order to achieve Government's targets in this area, there is need to reallocate expenditures within the sector towards rural water supply*" (MOFPED 2004, pg. 170).[43]

The 2004 PEAP explains that public resources should fund rural water supply programs, though more effort was needed to ensure that rural consumers contributed to the costs of operation and maintenance.

The PEAP goes on to state that urban water supply should be funded through tariffs, with cross-subsidies to the urban poor, and financed largely by the private sector. Setting commercially viable tariffs would attract the necessary private financing. In small towns, and to a lesser extent in large towns, the government and donors could finance investments, if private financing was not insufficient (MOFPED 2004, pg. 171-172, 182-184). The PEAP is ambiguous as to whether this public financing would be repaid. It is clear, however, that urban water supplies were intended to become financially viable enterprises, which cater to the needs of the poor and economically disadvantaged through cross-subsidies.

The 2006 Pro-Poor Strategy is based on this understanding and these principles for the sector. The Introduction to the strategy acknowledges that urban areas should not receive subsidies in the long run,

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[41] See Section 1.2 for more discussion of government and donor funding to the Poverty Eradication Action Plans (PEAPs).

[42] The level of resources going to sanitation also emerged as a concern, but this has been addressed by making sanitation an inter-sectoral issue. As a result, MWE has funded the District Sanitation Grants (see Section 2.3).

[43] The third PEAP set the sector priorities as "*provision of water and sanitation services to the rural population and the urban poor"* (MOFPED 2004, pg. 178, see also pg. 183).

and that financially viable and well-run water enterprises are in the long-term interests of the poor. It is also recognized that sector allocation has not followed the PEAP, and urban areas have received a disproportionate amount of funding (see the first two pages in Annex 1).

Therefore, it is not surprisingly that the first action in the Pro-Poor Strategy states,

> ***Allocate sub-sector budget equitably:***
>
> *A more equitable sub-sector allocation in budgeting will allow subsidies to better reach the poor. The allocation will be guided by the Sector Investment Model (SIM). Currently the rural sub-sector receives less than 50% of the total budget for delivering services to more than 85% of the population*

This section examines budget practice in light of this first pro-poor action. To do so, the next sub-section describes the investment plan for the sector, and the following sub-sections look at actual allocations in terms of approved budgets, released funds, and expenditures.

5.1 Sector Strategic Investment Plan (SSIP)

Some background on water sector investment planning helps to explain SSIP.

Between 1998 and 2005, the government with the support of its development partners began a reform of the water sector. This effort resulted in separate strategies and investment plans for the four main sub-sectors: rural domestic water and sanitation, urban water and sewerage, water for production, and water resource management. It then became necessary to harmonize these various investment plans.

The first consolidated sector investment plan was produced in 2005 with a time horizon out to 2015. This plan guided sector investments until 2009, when SSIP was produced with a time horizon to 2035. The 2005 plan and SSIP indicated similar investment levels until 2012, after which SSIP planned much higher funding levels. The difference stemmed from SSIP taking into account NWSC plans for small town piped schemes, and increasingly higher unit investment costs in rural water supply (MWE 2009, pg. v-vii, 142-3, 149).

Annex 15 gives the SSIP estimates for needed public funding, in Ugandan shillings and in sub-sector percentage shares.

In general, sector investment plans in Uganda have often demanded more funds than are projected for the sectors in the MOFPED medium term expenditure framework (Magona 2010, pg. 223). It goes beyond the parameters of this review to assess whether the SSIP was realistic in this respect.

However, there is no reason to question SSIP estimates of the funding needed to achieve the following 2015 coverage targets for improved rural and urban water supply access: 77% for rural areas; 80% for large towns; and 65% for small towns. In fact, the national urban coverage target is 100%, but the planners could not come up with a realistic plan for achieving that.

SSIP urban water access targets nonetheless remained ambitious and expensive. To achieve these, SSIP did not increase in the short term the share of rural water supply in the sector budget, as called for in the Pro-Poor Strategy and 2004 PEAP. Instead, the SSIP projected that rural water's share of public funding should drop to 35% by 2013, and only reach 55% sometime in 2021-25. The share of rural water in public funding should ultimately average about 53%, 2009-2035, according to SSIP estimates.

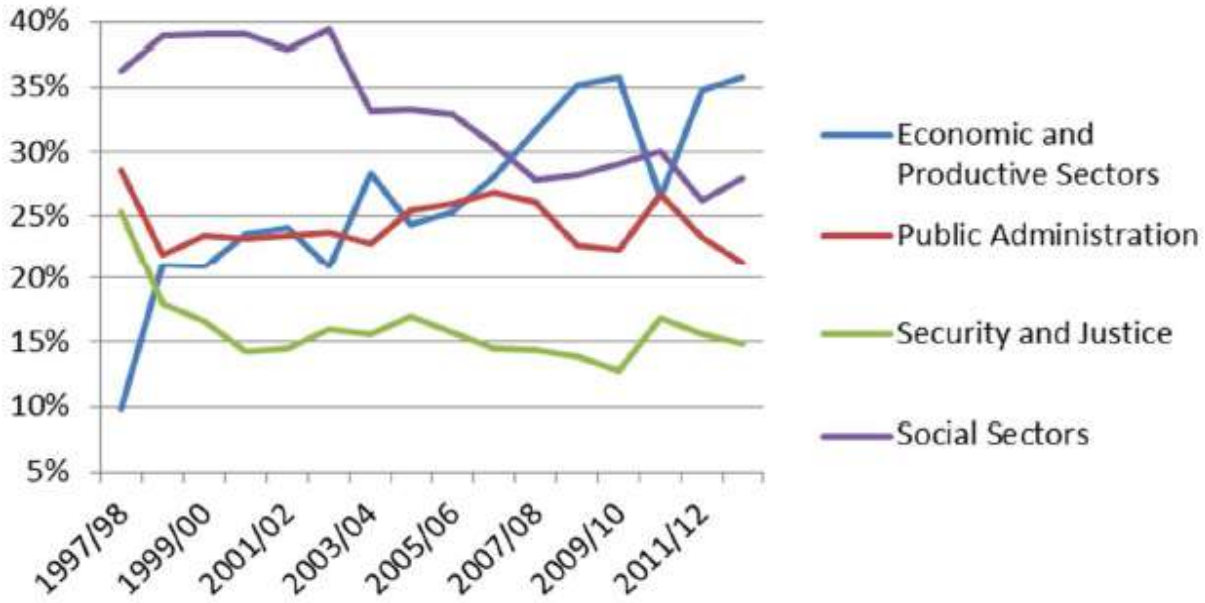
Meanwhile, the share of urban water and sewerage, water for production, and water resources management should increase at the expense of rural water until about 2020. The share going to urban

water could eventually decrease, but only if the assumption proved true that large town (NWSC) water schemes became fully self-financing.

5.2 Allocations to the Water and Sanitation Sector

Section 1.1 explained how the high priority attached to poverty eradication and basic social services during the PEAPs was eventually replaced by a government priority on economic growth. Figure 4 shows how these changing priorities have affected the percentage share of the national budget going to the social sectors. These sectors, including water and sanitation, commanded between 35% and 40% of the budget up to 2002/03, the peak of PAF spending. That declined to under 30% by 2011/12. Meanwhile, the budget share of the economic and productive sectors has risen from 10% to over 35%.

Figure 4: Share of Ugandan National Budget by Categories of Sectors, 1997/8 – 2011/12

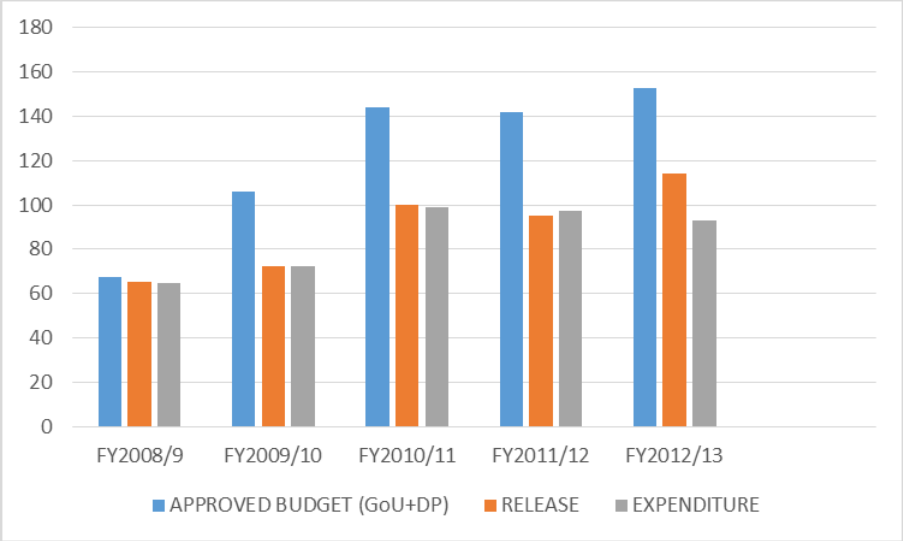


Source: Williamson *et al*, 2014, Chart 10, pg. 24.

Figure 5 illustrates the recent trends in the water and environment sector approved budget, released funds, and expenditures in constant 2003 prices. Annex 16 gives the figures for approved budgets, releases, and expenditures in nominal, constant, and percentage share terms. In constant 2003 prices, the budget has gone from USh.68 to USh.158 billion. As a share of the national budget, approved budget allocations have fluctuated, with a median share of 2.8%. Released funds have been lower.

Figure 5: Water and Environment Sector Budget, Released Funds, and Expenditures, 2008/09 – 2012/13, Constant 2003 Prices

USh. Billions (vertical axis).



Note: Figures include both government and donor funds.
Source: See Annex 16.

Funding may not rival the PEAP period, but there has not been a dramatic and recent downward trend in allocations to the sector.

5.3 Allocations to the Sub-Sectors

The share of rural water and sanitation has been between 34% and 51% of on-budget funding 2009/10-2012/13. The share of rural water and sanitation falls slightly to between 33% and 45% for that same period, if off-budget funding for NWSC concessional grants and loans is added.[44]

Table 8: Percentage Shares of Released Funds for Water Supply and Sanitation Sub-Sectors, 2009/10 to 2012/13

NA = Not Available

Sub-Sectors	2009/10	2010/11	2011/12	2012/13
Percentage Shares considering On-Budget funding only				
Rural Water and Sanitation	46	51	51	34
Urban Water and Sanitation	29	21	24	48
Water for Production	15	15	15	11
Water Resources Management	9	13	10	7

[44] "On-budget" funds refer to donor and government funds that are incorporated in the government's budgeting system. "Off-budget" funds refer mainly to donor funds that continue to disburse outside government systems, through direct disbursement to NGOs, NWSC, or projects. MWE has figures for off-budget funds for NWSC and NGOs. However, the NGO figures are not complete and are not broken down by sub-sector, and therefore cannot be included in the budget breakdowns in this section.

Sub-Sectors	2009/10	2010/11	2011/12	2012/13
Percentage Shares considering On-Budget Funding and Off-Budget NWSC Concessional Grants and Loans				
Rural Water and Sanitation	NA	45	45	33
Urban Water and Sanitation	NA	30	32	49
Water for Production	NA	13	9	7
Water Resources Management	NA	12	9	7

Source: Calculations by Elizabeth Kleemeier from database maintained by MWE. MWE 2013 (Annex 3.1) is a printed version of this database for one year.

Figures from the 2014 Sector Performance Report show the rural sub-sector continues to receive a significantly smaller share (38%) of sector funding.

Table 9: Released Funds by Rural and Urban Sub-sectors, 2013/2014

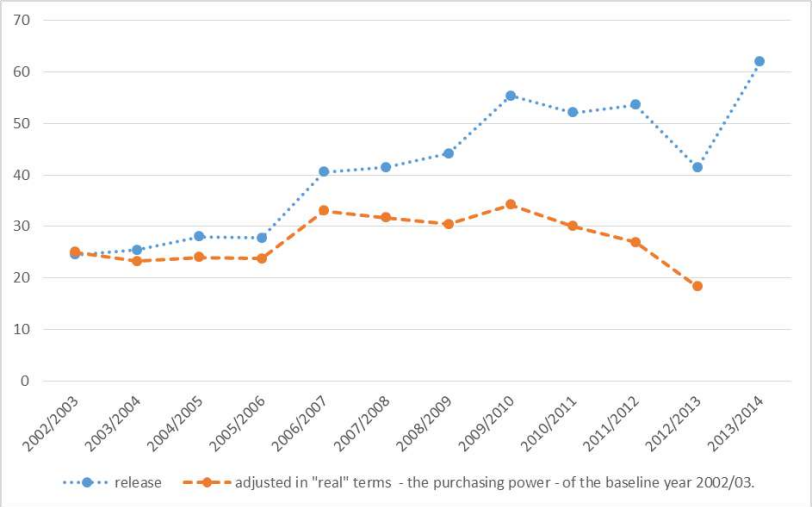
Sub-sector	Total	On-Budget		Off-Budget
		Government	Donor	
USh. billions				
NWSC	113.36	24.61	52.87	35.88
Small Towns	91.15	13.71	77.44	
Urban sub-total	***204.51***	***38.32***	***130.31***	
Rural	100.00	88.20	11.80	
WfP	19.67	19.34	0.33	
Rural sub-total	***119.67***	***107.54***	***12.13***	
NGO				37.80
Grand Total	**324.18**	**145.86**	**142.44**	**73.68**
Percentage Distribution				
Urban sub-total	63%	26%	92%	49%
Rural sub-total	38%	74%	8%	
NGO				51%
Grand Total	100%	100%	100%	100%

Notes: Sub-sector percentages may not total to 100% due to rounding. NGO off-budget funding is not available by sub-sector. NWSC off-budget funding is from internal revenue. Internal revenue from small town piped schemes is not available.
Source: MWE 2014.

DiWOs, which shoulder the main responsibility for rural water supply services, have seen their funding drop in real terms. The Pro-Poor Strategy (Action #9) called for increased levels of District Water and Sanitation Conditional Grants (DWSCGs). Although there has been some increase in nominal terms, in real terms the grants are below 2002/03 levels. Figure 5 illustrates the trends.

Figure 6: Released District Water and Sanitation Conditional Grants, in nominal and constant 2003 prices, 2002/03 – 2013/14

USh. Billions (vertical axis)



Source: Mulders 2015. Original source: MWE, Water and Environment Sector Performance Reports

DWSCGs represent a small and declining share of the overall water and sanitation budget. Released DWSCGs averaged 27% of the water and sanitation released funds, 2004/04 – 2013/14. That mean percentage masks a significant decline for the share of DWSCGs in the water and sanitation sector budget between 2011/12 and 2013/14, from 28% to 20% to 16%.

The decline in DWSCGs has been accompanied by the need to use more of these funds to establish DWOs in the newly created districts. Williamson *et al* (2014, pg. vii) see it as a strength of the water sector that conditional grants are used to sustain and build the capacity of the local government department responsible for providing the services, and indeed such funding is necessary.[45] However, it means that the allocation of funds to expanding rural water access has been even steeper than the bottom line in Figure 5 suggests.

Missing from this analysis are figures to show to what extent these trends in favor of the urban sector are donor-financed. NWSC benefits from significant concessional grants and loans: USh. 217 billion for the three years 2010/11-2012/13.[46] It is also possible to separate out the sizeable donor contributions the WSDFs, which dwarf domestic contributions (See Section 2.4, Table 5). However, donor budget support that underpins DWSCGs and TSUs is not so easily identified. Furthermore, there seems to have been a

[45] At present, DWSCGs include funds for (1) operation, monitoring, and maintenance of water point sources and simple piped schemes, (2) wages for contract staff, (3) construction supervision and monitoring, (4) administrative costs including consumables such as paper and printer cartilages, (4) start-up funds for all new districts for purchase of motor vehicles, printers and office setup costs, and (5) funds to existing districts that require new office equipment and transport (Tumwesigye, pg. 16-17).

[46] Calculations by Elizabeth Kleemeier from MWE database. MWE 2013, Annex 3.1, is a printed version of this database for one year.

shift back to project aid, which is always more difficult to track. A closer examination of MOFPED budget figures over the past ten years should be able to give a better picture of how door funding has split between the rural and urban sub-sectors, but that level of analysis is beyond the resources of the present review.

Sub-sector allocations are far below the needs estimated in the SSIP, as Table 10 shows. As mentioned in Section 5.1, these shortfalls may indicate that the SSIP was fiscally unrealistic in light of available resources. However, the investment plan seems a credible estimate of the fiscal resources necessary to achieve the access goals for the sector.

Table 10: SSIP and Released Funds Compared: Public Funding for Rural and Urban Water Supply and Sanitation, 2009/10 – 2012/13

Ugandan Shillings billions (nominal)

Sub-Sectors	**2009/10**	**2010/11**	**2011/12**	**2012/13**
Rural Water Supply and Sanitation				
SSIP Rural Water	89	119	144	172
Released Funds, On-Budget	71	72	72	52
Released Funds as Percent of SSIP	*80%*	*61%*	*50%*	*30%*
Urban Water Supply and Sanitation				
SSIP Urban Water and Sewerage	85	80	118	128
Released Funds, On-Budget	45	30	34	73
Released Funds, Off-Budget for NWSC concessional grants and loans	Na	18	17	4
Released Funds, On and Off Budget as Percent of SSIP	*Na*	*60%*	*43%*	*60%*
Off-Budget, NWSC Internal Revenue	Na	24	19	5
NGO Off-Budget, Released Funds	**19**	**18**	**42**	**32**

Source: Calculations by Elizabeth Kleemeier from a database maintained by MWE. MWE 2013 (Annex 3.1) is a printed version of this database for one year.

5.4 Impact

Decreased funding to rural water supply has resulted in falling access to improved water supplies in the rural areas, where the poor and Bottom 40% are concentrated.

UNHS data show that improved water use dropped from 74% in 2009/10 to 72% in 2012/13, due to falling use in both rural areas and urban areas outside of Kampala. MWE access figures show that urban coverage increased fairly steadily from 61% in 2007/08 to 73% in 2013/14. By contrast, rural coverage fell from 65%, 2008/09-2010/11, to 64%, 2011/12 – 2013/14.

6. Rural Domestic Water Supply

In essence, Uganda pursued a pro-poor approach to rural water supply, without explicitly labeling it as such, long before the 2006 Pro-Poor Strategy appeared.

This approach had taken root in the late 1980s and 1990s. Section 1.2 explained how economic thinking and donor assistance strategies for the water and sanitation sector had evolved as a result of experiences during the UN Water Decade. Uganda was in the forefront of testing the new strategies, particularly through the Danish-assisted Rural Water and Sanitation Program (Ruwasa) in south-eastern Uganda, and the UNICEF-assisted Southwest Integrated Program (SWIP). These programs, covering most of the southern half of the country, experimented with measures that would subsequently be incorporated into the 1999 National Water Policy.

The overall guiding principle of the 1999 policy was "some for all rather than more for some." In other words, equity and serving first those in most need was to be the primary consideration. The policy called for developing needs-based criteria to determine the selection of locations for service expansion, and appropriately balancing investments between rural and urban areas. In addition, specific strategies in the 1999 policy seemed to enable Uganda to reach the rural poor and economically disadvantaged, particularly the use of low-cost and appropriate technology, and community participation in all phases of the project cycle.

The policy also introduced cost recovery measures for both rural and urban areas. More was expected in large towns, where in principal users should pay the full costs of investment, operations, and maintenance of piped schemes through tariffs. In rural areas, cost recovery goals were significant but more limited. They took the form of upfront contributions to construction costs, and community responsibility for operation and maintenance through the Community Based Maintenance System (CBMS).

In many respects, the 2006 Pro-Poor Strategy simply referenced or built upon practices already put in place by the 1999 National Water Policy, and by DWD starting even earlier. Two actions, however, concern more recent initiatives, self-supply and rainwater harvesting. The following sub-sections review first long-standing practices cited in the strategy, and then two relatively recent initiatives.[47]

6.1 Cross-subsidies through Participation

Action #8 in the Pro-Poor Strategy calls for empowering communities through participation to ensure cross-subsidy in cost recovery, arguing,

> "*Communities themselves are in the best position to define who is poor and the most appropriate way to assist them (e.g., support in-kind and cross subsidy for capital and O&M contributions). If the communities are empowered by being involved in key decisions and trained to undertake the main responsibilities, the facilities will be better managed and will be more effective in serving the poor."*

Unfortunately, participation may lower than hoped, despite participatory procedures put in place by DWD. DWD commissioned a survey which looked at community participation throughout the project cycle. Table 10 presents results from this survey of 160 water supplies. The survey documented unexpectedly low levels of participation, particularly in respect to the choice of technology. That may

[47] See Annex 1, actions #8-13. Water quality monitoring has not been reviewed, as this now falls under the DWRM rather than DWD.

mean that community members wished for a more expensive level of service, but instead received a less costly one, for example a borehole instead of a piped scheme, or a protected source instead of a borehole.

Table 11: Percentage of Schemes Using Participatory versus Non-Participatory Approaches in Rural Water Scheme Planning and Investment

Row #	Planning and Investment Actions	Use Participatory Approach	Use Non-Participatory Approach	Explanation of Coding
1	Initiate request for scheme	56%	41%	Participatory=community members or leaders Non-participatory=govt., NGO, or other persons
2	Households contributed to construction	60%	40%	Participatory=yes Non-participatory=no
3	Community participated in construction supervision	64%	31%	Participatory=yes Non-participatory=no
4	Community participated in choice of technology	36%	64%	Participatory=yes Non-participatory=no
5	Community made final decision on choice of technology	20%	80%	Participatory=yes Non-participatory=no
6	Households pay for O&M	54%	46%	Participatory=yes Non-participatory=no

Notes: Some percentages do not add to 100% due to rounding, missing data/don't know, or both. N= 160 schemes in 32 sub-counties in 16 districts.
Source: Asingwire 2011, pg. 33-34.

The survey provides some evidence of the "cross-subsidy" called for in Action #8, although not to the extent intended. Interviews with water committee members did reveal that certain vulnerable groups were exempted from operation and maintenance contributions, as indicated in Table 11, but poverty was generally not a reason for exemption, unless it was combined with elderliness or disabilities. Only fifteen percent of respondents said that poor people were subsidized by virtue of being poor.

Table 12: Village Water Committee Responses Regarding Payment Exemptions to Vulnerable Groups

Group Reportedly Exempt from Contribution	Percentage of Responses Citing Group
Elderly	79
Persons with Disability	53
Very Poor	15

Group Reportedly Exempt from Contribution	Percentage of Responses Citing Group
Widows and Child-headed Households	12

Source: Asingwire 2011, pg. 36.

However, any evidence about cross-subsidies is less meaningful, given that CBMS seems underfunded, i.e., most people are not contributing enough to operation and maintenance. The study documented that users in general are not making regular contributions to operation and maintenance. Bey *et al* (2014) also looked at this question in 16 sub-counties in eight districts in northern and western Uganda. This study found that whether or not people contributed to O&M varied tremendously across districts. Note that self-reported contributions with no independent verification will tend to overestimate the actual practice of paying for water. Furthermore, the study did not provide data on how much was collected, and to what extent these funds covered the cost of maintenance and repair. T

The DWD study attributed the causes of low contributions both to people's reluctance to contribute unless the supply has actually broken down, and how poorly Water User Committees perform in collecting and managing funds (Asingwire 2011, pg. 22). The Bey *et al* study reached similar conclusions.

6.2 Targeted Funding to the Worst-Served Areas

Action #9 in the Pro-Poor Strategy states, "*W&S capital subsidies will be targeted to the unserved and underserved (improving distance to source) through the district allocation formula.*"[48]

This action has been implemented through a revised formula for district grant (DWSCG) allocation, which directs proportionately more funds to districts with a greater number of sub-counties below the national average for rural improved water supply.

Beyond a reminder of the national objectives for equity in water supply, the guidelines do not direct that the worst served sub-counties be served first. The formula determines how much the district will receive as its total DWSCG, but not how much will go to particular sub-counties. The sectorial guidelines direct that 65% of funds overall should go to sub-counties, and that 70% of these funds should be spent on rural water supplies.[49]

Therefore, local politicians can and do override the technical and equity recommendations of DWOs in order to allocate more funds to better-served district.

A golden indicator (#7 on equity) reports national progress in equalizing access rates among sub-counties: the lower the score, the better the equity. In 2012/13, the national average on the equity indicator was 153, rising to 161 in 2013/14. Table12 gives the breakdown of the recent figures.

[48] Action #10 states that the distance to source should be improved, and is therefore closely related to Action #9. The standard for minimum improved water service in rural areas has been changed from 1.5 to 1.0 kilometers.
[49] Section 2.3 explained that most funding for rural water supply comes from DWSCGs, and that DWD issues guidelines for how this money may be used.

Table 13: Distribution of Districts by Equity Indicator Values, 2013/2014

Values on Equity Indicator	Number of Districts	Cumulative Number of Districts
Under 51	28	28
51 to 100	40	68
101 to 150	17	85
151 to 1,027	26	111

Source: Data compiled by Fredrick Tumusiime from MWE database.

MWE suggests that the main reason for this rising inequity has been the creation of 145 new sub-counties with very few improved supplies relative to population (MWE 2014).

Fund allocation based on access rates does not target the poor, given that most unserved people in rural areas are not poor. In fact, DWD and UBOS analyzed 2005 data on the relationship between poverty rates and access rates in rural sub-counties, and found no clear correlation (DWD et al 2009, pg. 18, 44).

Even targeting funds to the poorest districts does not necessarily reach the poorest households and people, for two reasons. First, districts that are not particularly poor may have pockets of poverty. These poor people would be missed in allocations that go only to the poorest districts. Second, when a poor district receives funds, it does not automatically follow that the poorest areas will be funded. As mentioned above, political considerations may take precedent. Indeed there may be relatively well-off pockets within a poor district and their politicians may be able to grab the funds.

In 2009, DWD and UBOS collaborated in developing a planning methodology to address drawbacks to allocating funds only on access rates (DWD et al 2009). The 2009 report does not advocate focusing only on poverty in allocating funds. Rather, the argument is that poverty should be used as a criterion along with cost, efficiency, and equity. The report goes on to make a number of more specific recommendations as to how to make this happen (DWD et al 2009, pg. 44-45).

This methodology was never implemented, but served to illustrate the following two points:

- *Only a part of any district is affected by both widespread poverty and very poor access rates:* Usually only one or two sub-counties per district would appear on any of the lists. The worst-hit district was Kisoro, with four out of fourteen sub-counties having among the highest rates of poverty density.

  This was true looking at the 2005 data, and should be all the more true today, when poverty has lessened and coverage has improved.

- *The choice of poverty statistic leads to very different allocation decisions.* DWD and UBOS defined poverty based on UBOS poverty lines, just as has been done in this report. Three different statistics were then used to calculate poverty: poverty headcount (number of poor); poverty rate (poor people as a percentage of the sub-county total population); and poverty density (number of poor people per square kilometer in the sub-county). Another poverty statistic that could have

been used was poverty gap, which measures the depth of poverty (how many people live how far below the poverty line).

The 26 sub-counties with the lowest access rates were ranked from poorest to less poor in three different ways, based on the different poverty statistics. Only 3 sub-counties appeared on all three top-ten lists, and then in different ranks. Altogether 18 sub-counties appeared on one or more lists.

6.3 Self-supply

Action #11 in the Pro-Poor Strategy calls for encouraging self-supply in the rural water sub-sector. Self-supply refers to water supply improvements that households or groups of households can finance and implement themselves, without public investment funds. Self-supply is therefore based on low-cost technology, for example manually drilled boreholes fitted with rope pumps.[50] Note that rainwater harvesting may be a form of self-supply, considered separately in the next sub-section.

Strategic Action #11 in the Pro-Poor Strategy called for encouraging self-supply through market solutions. The strategy stated that it could have a pro-poor impact by reducing the number of users at public water supplies (less waiting time) and reducing the distance to water points (assuming that poor households could use the privately financed self-supplies).

Self-supply has not yet been implemented at a large scale. In 2012, DWD reported only 35 self-supply schemes. Furthermore, a number of issues still have to be worked out, such as (1) water quality and (2) maintenance when self-supplies are used as community water points (Carter et al 2009, MWE 12).

From a pro-poor perspective, the main issue is whether in practice the poor or Bottom 40% will benefit, or in any way be harmed, from the DWD self-supply initiative.

Noted above are several ways in which the poor or Bottom 40% could benefit, for example, by getting water from neighbors with self-supplies, or reduced waiting time at public supplies. The question is whether any such benefits are likely to materialize in practice. If not, then diverting DWSCGs to this initiative could hurt the poor by lessening the funding available for water supplies from which the poor or Bottom 40% would benefit. The poor would also be harmed if the initiative were implemented in such a way that the poor received less desirable infrastructure (say, rope pumps instead of U3 handpumps), or seasonal supplies (shallow wells and boreholes, when deep boreholes are needed to ensure year-round supply).

It is not possible with available information to assess the impact of the DWD self-supply initiative on the poor and Bottom 40%. Action #11 called for a study to assess the potential of self-supply to benefit the poor, but this has not been done. Available reports do not describe the beneficiaries in any detail, and certainly not their incomes and socio-economic status. Anecdotal references are almost always to rural people, but it is not known how many are poor or in the Bottom 40%. Some beneficiaries were clearly in the Top 60%, for example, putting in relatively expensive self-supplies in the Kampala suburbs.

6.4 Rainwater Harvesting

Strategic Action # 12 in the Pro-Poor Strategy called for promoting rainwater harvesting (RWH) for the same reasons as other types of self-supply: RWH could potentially reduce the distance to water points (assuming that the poor could collect water there) and the waiting time at public water infrastructure could be reduced for poor households.

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[50] "Self-supply" as used here does not include wealthy households which can afford high-cost investments to improve their water supply; the term is reserved here for low-cost technologies.

MWE initially attempted to promote RWH through subsidies, as recommended in the Pro-Poor Strategy. (In this respect, it was not self-supply as defined in the preceding sub-section.) Districts were permitted to use DWSCGs to cover 60% of the cost of individual RWH facilities. The experience was that less well-to-do households could not raise their 40% cost contribution, and so the more wealthy households captured the subsidy. For this reason, the subsidies to household RWH were stopped in 2014.

6.5 Impact

The UNHS data reviewed in Section 4.3 indicated a remarkable achievement by Uganda in delivering services to the rural poor and Bottom 40%. In rural areas, these groups use improved water supplies for drinking water to virtually the same extent as the non-poor and Top 60%.

A note of caution about these findings must be repeated.

First, rural water access is no longer keeping pace with population growth, due to the budget constraints discussed in Section 5. In 2008/09, improved rural water coverage peaked at 65% and stayed there until 2011/12, when it dropped to 64%. At last report (2013/14), coverage remains at that level. Since the poor and Bottom 40% live disproportionately in rural areas, in all likelihood they will be disproportionately affected by this declining rate of access to improved rural water supplies.

Second, UNHS data does not permit looking at access by the poor and economically disadvantaged on a very local level, such as sub-counties or parishes, due to sample size constraints. The situation in specific localities may be very different from the national picture.

Third, information on other aspects of water supply besides access, such as quality and level of service, could reveal discrimination. As explained in Section 4, this review has focused on access to improved water supplies, rather than other aspects of water services, due to the national objectives and MDGs, and because available data mostly measures access. Yet quality of services remains an equally important aspect, especially in light of the problems with service quality that emerged following the rapid expansion in social services during the first two PEAPs (see Section 1.1, Magona 2010, pg. 220-221).

Williamson *et al* (2014) find that declining quality in water services was notably less pronounced than in the education and health sectors, because MWLE/MWE and its development partners took early steps to improve the capacity of DWOs to deliver services. The two principal actions in this respect were using conditional grants (DWSCGs) and establishing eight TSUs to build and maintain DWO capacity.

Nonetheless, service quality in rural areas is of great concern, particularly the extent to which the constructed infrastructure actually functions, i.e., produces water for the consumers. The declining real value of DWSGs, documented in Section 5.3, adds to this concern.

MWE added a Golden Indicator on functionality. For rural domestic supplies, the indicator was the percentage of supplies functioning (producing water) at the time of a spot check by the DWO. The value on this indicator has risen from 82% in 2007/08 to 85% in 2013/14, slightly above the target value.

Other studies have taken a more nuanced view of functioning, distinguishing between those which are fully functioning and those which are defective in some aspect or aspects. These studies have also been conducted by independent observers, and not DWO staff who are indirectly responsible for keeping rural water supplies functioning. The results in these studies have not been so positive.

The Asingwire study, as reported in Section 6.1, found 82%of the supplies functioning, but only 54% fully operational. Wodon and Tsimpo (2014b) also documented problems with water supplies not functioning.

Bey *et al* (2014) examined four criteria of water service quality for rural supplies in 16 sub-counties in eight districts in northern and western Uganda. The study found only 7% of water supplies met all four criteria.[51] The water supplies were notably poor on the criterion regarding how reliably the supplies provided water. The percentage of households whose improved water supply was repaired within two weeks after breakdown ranged from 26% to 82% per district, with a median of 35%. That implies that most water points remain out of operation for two or more weeks once the supplies break down. Also, in some areas, the seasonal non-functioning of water points was a greater problem than breakdowns. These are the aspects of reliability that the Golden Indicator on functionality cannot capture well, based as those data are on spot checks at one point in time.

None of these studies look into whether the poor and economically disadvantaged are more affected by poor quality of services than other members of their communities.

A further analysis of UNHS data could reveal whether the poor have a lower quality of service in the sense of living farther away or using more time to collect water , but not on the reliability of the supplies. (The UNHS questionnaire does not include questions on this.) A detailed understanding of the quality of water services received by the poor and Bottom 40% would require additional field studies, as the sample size in national surveys will not permit a close look at local conditions, or a range of service quality aspects.

[51] The four criteria were perceived water quality, water consumption, accessibility (within 1 kilometer), and reliability. The water consumption criterion was especially demanding: it is difficult to consume 20 liters per capita per day when collecting water from rural point sources. In that respect, it is not surprising that most rural sources did not meet all four criteria.

7. Urban Domestic Water Supply

7.1 Background

The principal pro-poor practices that have been proposed for urban areas in Uganda are to: (1) subsidize tariffs; (2) reduce connection fees; (3) introduce and promote various types of public water points (PWPs), including shared yard connections and authorized water vending; and (4) invest in additional pipelines and PWPs in low-income settlements.

The methods to implement the above practices include the establishment of pro-poor units, social mapping of low-income areas, and various social marketing techniques and activities to promote piped water consumption.

For convenience (and in line with common usage in Uganda), "urban pro-poor practices" in this section will refer to the above practices and methods, and not to measures specifically targeting the 11% of urban households who live below the Uganda poverty lines.

The experiences with these four practices will be reviewed in subsequent sub-sections. The remainder of this sub-section provides additional background on large and small towns, and the history of pro-poor practices in each.

7.1.1 Definition of Large Towns and Small Towns

Large towns as defined by MWE are those urban areas where NWSC manages the water systems. Small towns are those urban areas outside the NWSC mandate, and their water supplies are generally managed by a local water authority appointed by MWE.

NWSC manages the water networks in Kampala, and 29 towns and municipalities, as of June 30, 2013. By this date, there were 157 small towns, 105 of which had piped schemes.

Note that the number of "large towns" increases regularly, as DWD and NWSC agree to transfer responsibility to NWSC for heretofore small town networks. For example, the World Bank-assisted Water Management Development Project will cover four NWSC-managed municipalities and 14 towns currently considered small towns. However, most of these small towns will then be transferred to NWSC, becoming "large towns." DWD plans to expand NWSC management to 80 urban areas by 2018 (MWE 2013, pg. 68).

Small towns are also increasing in number, due to rural growth centers being gazetted as towns when their population sizes warrants it.

Annex 5 lists the large and small towns in Uganda, as used in this report.

7.1.2 Pro-Poor Practices in Large Towns

NWSC has had the most extensive experience with urban pro-poor practices, largely in Kampala.

- In the late 1990s, NWSC began developing an investment project specifically focused on the urban poor in Kampala. WSP provided technical assistance to this effort in order to survey the situation in informal settlements and identify management options (AquaConsult, undated).
- The Kampala Urban Pro-Poor Project was implemented 2002-2007 with financing from German development cooperation (KfW), at a cost of USD 3.3 million. Three additional pro-poor projects in Kampala were implemented from 2008, with estimated funding of USD 7.9 million, included USD 2.5 million for a GPOBA output-based aid project.

- Numerous other Kampala water projects over the same period have included components for extending pipelines and increasing public water points and kiosks in informal settlements (WSP 2013, pg. 41).
- In 2006, NWSC established the Urban Pro-Poor Branch to promote, plan, coordinate, and manage activities to provide services to the unserved and poorer settlements in Kampala.

7.1.3 Pro-Poor Practices in Small Towns

The primary source of investment in small town water supply has been the four WSDFs, which finance piped scheme construction in small towns and rural growth centers (see Section 2.4) for an explanation of WSDFs).

The WSDFs have no directives concerning pro-poor practices. The selection and monitoring procedures in the WSDF operations manual do not include poverty considerations. The DWD design manual for piped schemes, used by WSDFs, states that affordability must guide technical design. However, affordable designs are not necessarily pro-poor. For example, a scheme supply area may be limited to the densely populated town center in order to limit costs, and in the process fail to serve poor people living in peri-urban areas. Similarly, the design may increase the number of public water points at the expense of yard connections and house connections in order to meet demand with a smaller and less expensive scheme. In this case, public taps are a means to limit consumer water consumption, not target service delivery to the poor (Hydrophil 2013, pg. 104-106).

Following construction, the private operators and individual operators who run the schemes have little scope for introducing pro-poor practices, as these require investment funds, subsidies, or changes in tariff policies. Furthermore, the performance indicators for private operators, as laid out in the standard management contract developed by DWD, do not monitor pro-poor practices.[52]

Design-Build-Operate contracts, rather than simple management contracts, have been the vehicle in other countries to make operators responsible for introducing pro-poor measures in piped schemes, notably when the pro-poor measures are enforced through an output-based aid arrangement.[53] DWD collaborated with GPOBA and IFC on an output-based aid project for a design-build-operate contract for Busembatia town water scheme, part of a larger GPOBA-IFC project to increase piped water access in selected small towns and RGCs.. However, significant challenges were faced in this pilot effort, as summarized in the 2010 Sector Performance Report (MWE 2010, pg. 116-118), and this approach has not been further tested or expanded.[54]

DWD (UWSSD) has formed the UOWS to provide support to piped schemes in small towns and rural growth centers on an on-going basis. WSDFs require schemes to join their regional UOWS. The support provided by UOWS includes water quality testing, training, reporting, legal advice, bulk procurement, etc. Pro-poor practices are not an explicit part of this support, but the UOWS have assisted in subsidizing

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[52] The Second Schedule, Table 2.1, in the management contract template presents the performance indicators. The operator must report information on the physical number of each type of connection (house, yard, PWP/kiosk) but not the number of active connections for each type, or the arrears by connection type. It was this latter type of reporting information that gave NWSC insight into the management problems facing PWPs and kiosks (see WSP 2013).

[53] An output-based aid contract can stipulate that the contractor-operator will only be reimbursed for the investment costs once pro-poor performance indicators have been achieved and sustained (e.g., specific number of active connections in low-income areas three months after construction completion).

[54] This GPOBA pilot for small towns should not be confused with the GPOBA project under NWSC that subsidizes yard taps and PWPs in Kampala.

connections to a limited extent, as discussed in Section 7.3 below. However the UOWS face major challenges in their financing, due in large part to a large number of scheme members not paying their membership fees. (MWE 2013, pg. 72-74).

A pro-poor pilot program in five Northern region towns (Adjumani, Arua, Koboko, Lira, and Yumba) has been the most explicit effort to-date to test pro-poor practices in small towns. This pilot effort has been implemented under the Reform of the Urban Water and Sanitation Sector Project (RUWASS). Pilot program features include pro-poor mapping, pipeline extension and additional pro-poor connections in informal settlements, and tests of prepaid public water points and authorized vending. Limited information is available on the results from this pilot.

7.2 Tariff Subsidies[55]

Tariff subsidies are embedded in tariff structures that set some or all tariff rates below operating costs. Examples of subsidized tariffs include:

- NWSC sets lower tariff rates for PWPs and shared yard connections than for other types of domestic connections and institutional, government, industrial, and commercial connections.
- NWSC charges the same tariff in all large towns, thereby providing a subsidy to those consumers in towns that have above average operating costs.
- In 2012/13, 25 out of 80 small town schemes did not cover their operating costs implying that all tariffs were implicitly subsidized in those towns (Tsimpo and Wodon 2014a).
- Another form of tariff subsidy (not used in Uganda) is an increasing block tariff, in which the rate per cubic meter depends on how much water the connection holder consumes. For example, a household that consumes 10 m^3 per month would pay at a higher rate than a household consuming under 6 m^3 in a month.

Recent World Bank research in Uganda indicates that any type of implicit or potential tariff subsidy benefits primarily the more wealthy households. Tsimpo and Wodon (2014a) found that wealthiest 30% of the population would capture 66.2% of the benefits from any of the simulated subsidies in their models for Ugandan tariffs, including increasing block tariffs. The Bottom 40% of the population would receive just 12.5% of the benefits, and the poor would receive 0.0%.

Tariffs subsidies benefit the wealthy because so few people have access to piped schemes, and because the consumption of piped water remains low even when people do have access.[56] Tsimpo and Wodon suggest that connection subsidies would be more effective than tariff subsidies in delivering piped scheme benefits to the less wealthy. These findings with respect to both tariff and connections subsidies are in line with an earlier World Bank global study on utility subsidies and the poor (Komives et al 2005).

Further confirmation of the conclusions reached by Tsimpo and Wodon comes from an analysis of the impact from NWSC pro-poor policies (WSP 2013). An analysis of NWSC 2010 data for all large towns showed that house and yard connection users received most of the subsidy, as Table 13 shows. (See Annex 18 for a description of the various types of domestic connections.)

[55] See Annex 21 for Ugandan tariffs.
[56] Tsimpo and Wodon define "access" as at least some of the households in the neighborhood use piped water.

Table 14: Allocation of Subsidies by Connection Type, Large Towns (NWSC Service Areas), 2010

Connection Type	Average Tariff	Total Subsidy (USh)		
		Total	Per connection	Per capita
PWPs	1,214	3,058,131,641	394,699	2,631
Yard and house	1,981	14,166,016,880	68,319	10,295
Institutional/government	3,241	(6,299,741,581)	(1,112,243)	
Industrial/commercial	3,508	(10,924,406,940)	(403,293)	

Notes: "PWPs" excludes shared yard connections and includes kiosks. "Yard and house" includes shared yard connections, which are virtual PWPs. "Average tariff" is calculated by dividing the total revenue for each category of connection by the volume billed. Thus, the average includes various service charges. The above figures may overestimate the per capita subsidy to yard and house connections. The per capital subsidy is calculated on the assumption of 150 persons per PWP and 6.6 persons per yard and house connection.
Source: WSP 2013, pg. 54, based on data from NWSC Annual Report, 2009/10.

Unfortunately, the above table combines semi-public shared yard connections with strictly private yard and house connections. It would of course be interesting to see the average tariff and subsidy delivered through shared yard taps, since these are virtual PWPs. However, shared yard taps represent such a small percentage of domestic connections, and the subsidy going to domestic connections is so large, that this additional analysis would not change the basic conclusion.[57]

Tariff subsidies for domestic connections flow overwhelming to private house and yard connection holders rather than PWP users for two reasons: most domestic users get their water through these connections rather than PWPs; and per capital consumption at yard and house connections is higher than at PWPs.

If we assume that domestic connection holders are generally better off economically, Table 13 confirms with actual data what Tsimpo and Wodon concluded with various simulated tariffs: well-to-do households benefit the most from tariff subsidies.

An additional problem facing tariff subsidies is how to deliver them to the PWP and shared yard connection users, given that the connection holder or person-in-charge may resell the water at market rates. Prepaid PWPs have been the response in Kampala, and the concept of authorized water vendors has been developed but not tested in small towns (discussed below).

7.3 Affordable Connection Fees

Lowering the fees for a domestic connection, and introducing installment plans for paying the fees, have been extremely popular and effective measures for increasing domestic consumption for water utilities in other African countries. The World Bank recommends this as a good practice, based on global research and the work of Tsimpo and Wodon in Uganda (Komives et al 2005, Tsimpo and Wodon 2014a).

[57] There were about 7,000 shared yard taps in 2010, based on the NWSC assumption of a 50:50 split between private and shared yard taps. There were 207,350 yard and house connections in total in 2010 (WSP 2013, pg. 34-35, 53).

7.3.1 Connection Fees in Large Towns

In 2004, NWSC issued an Affordable Connections policy to reduce the connection costs (fee plus other costs) to all consumers. The objectives were to increase the number of connections (particularly among the urban poor), reduce the level of nonrevenue water, and ensure the quality of materials used in connection service lines.

Under this policy, the cost to the consumer for a standard household connection or yard connection was cut from USh.125,000 (USD 75) to USh.59,000 (USD 35), and NWSC would construct and pay the costs for the service line from the water main to the consumer's meter within 50 meters of the main. This last provision saved consumers something on the order of USD 200-300, an even more significant source of savings than the reduced connection fee. For those customers located more than 50 meters from the main, the customer would pay half the costs of installing the service line. Maintenance and repair of the service lines to the consumers' meters also became NWSC's responsibility. Reconnection fees were reduced to USh.75,000 (USD45). To fund this policy, NWSC imposed a 10.7% surcharge on the tariffs to all consumers, domestic and otherwise, with the intention to ring-fence these monies in a fund devoted to new connections (WSP 2013, pg. 22-32).

The policy outperformed expectations in Kampala. New connections increased at an annual average of 14,500 after 2004, compared to the 7,000 annual average before 2004. The demand for new connections was actually even higher than this, but NWSC imposed annually a ceiling of 10,000 to15,000 new connections, given limits on network water production and transmission capacity and the additional work created for operations (billing, revenue collection, pipeline maintenance and repair, connection installation). The growth in water supply coverage, as estimated by NWSC, has gone from 62% in 2002/03 to 74% by 2010 (WSP 2013, pg. 31-32).

Most (77%) of the new connections in Kampala were domestic, that is, yard and house, and most of these new residential connections were for house connections. Thus, the main beneficiaries of the Affordable Connections Policy were those households which had water piped inside their homes. The second largest group of beneficiaries was commercial and industrial connection holders, which represented 18% of new connections 2004-2010 (WSP 2013, pg. 33-35).

The policy significantly raised revenue for NWSC, due to (1) the increase in new customers, (2) the additional tariff surcharge, and (3) yearly tariff increases in line with sector price indices and inflation. Operational costs also more than doubled 2004-2010, but revenue consistently represented around 130% of operating costs, excellent performance by international benchmarks for this ratio (WSP 2013, pg. 42).

Published information on the Affordable Connections Policy in large towns outside Kampala is not available. The experience with the increase in various types of connections likely differs from Kampala, depending on the socio-economic profile of the individual town. The above figures on costs and revenue are for NWSC as a whole, and do not indicate revenue versus operating costs for individual large towns. The policy may well be financially viable due to cross-subsidies among the towns under NWSC management.

7.3.2 Connection Fees in Small Towns

WSDFs commonly offer subsidized connections for a short period during the construction phase as a promotion. Offered on a first come/first served basis, 50-100 connections are made available for around USh.50,000 compared to an actual cost of approximately USh.300,000. The demand for subsidized connections far outstrips the available financing.

After construction, UOWS may provide meters and materials to provide additional subsidized connections. Limited funding necessarily constrains the extent of this. According to the DWD database on small town and rural growth center schemes, 27 schemes offered a subsidy on new connections at some point after commissioning. The subsidies were only available for a few months in total for each participating scheme.

The allocation formula for the Urban Operation and Maintenance Conditional Grant includes a calculation for a connection fee subsidy.[58] Further investigation is required to calculate the total value of this part of the O&M grant and how it is used in practice. The size of the O&M grant to individual schemes has apparently shrunk over time, as the number of schemes has increased much more rapidly than the total value of the grant. This may explain why the authors did not find more evidence of connection subsidies in small towns.

7.4 Public Water Points (PWPs) and Shared Yard Connections

A third pro-poor practice has been to introduce lower cost alternatives to house connections for domestic connections. The alternatives differ in their physical design and location, their expected use and management, and sometimes their tariffs (see Annex 18 for a description of the various types of connections). This sub-section presents the experience with these alternatives. Tariffs were already discussed in Sub-section 7.1.

7.4.1 PWPs and Yard Taps in Large Towns

WSP (2013) provides figures on the number of new yard connections and PWPs provided in the 117 designated poor areas of Kampala 1998-2011: 14,668 yard connections and 1,530 PWPs. It is not reported the number of the yard connections that were shared yard connections as opposed to domestic yard connections (a service level between house connections and PWPs). NWSC considers that there are about half of each (WSP 2013, pgs. 27, 33).

The Affordable Connections Policy increased the number of yard connections and PWPs along with private connections. Out of the total number of beneficiaries provided piped scheme water through this policy, 2004-2010, 99,146 people (21%) were served through active yard connections and PWPs in low-income settlements (WSP 2013, pg. 37). In other words, the Affordable Connections Policy expanded greatly the number of new consumers throughout the city, a little under a quarter (21%) of whom were provided water through yard connections and PWPs in low-income areas. Since NWSC estimates that half of the yard connections are for private use only, something under 20% of the new consumers receive water through PWPs of one sort or another.

The main problem facing service through yard connections and PWPs has been disconnection for non-payment. In 2010, the percentages of inactive new connections (2004-2010) were 21% of yard connections and 53% of PWPs.

NWSC has been able to reduce the number and proportion of inactive connections through better planning for PWPs and the activities of the Pro-Poor Unit (e.g., socioeconomic surveys, consumer education). However, it is difficult to see the impact of these activities in reducing inactive connections because long-inactive connections are eventually written off and removed from the books (WSP 2013, pg. 34-37).

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[58] An annex to the MWE Water and Sanitation Sector Sectorial Specific Schedules/Guidelines contains an annex with this information.

Other impediments to increasing the number of PWPs in Kampala's poor settlements have been the limited number of pipelines in these areas, and the unavailability of suitable land, in large part due to the land tenure system (*mailo*).

To meet the challenges facing PWPs and shared yard connections, particularly nonpayment, NWSC piloted 300 prepaid PWPs in Kampala. The advantages to the consumer are in principle 24/7 water availability at the point and no middleman mark-up in price, and to NWSC of virtually eliminating nonpayment problems. The challenges are the much higher costs of installation (about USD1,350 compared to USD380 for a PWP and USD170 for a yard connection), repairs and maintenance to the meters and vendor machines that charge the tokens, and the continuing problem of locating available land. On whole, the pilot experience was sufficiently positive to implement under the GPOBA project an a total of 1131 prepaid PWPs compared to 6,000 yard connections and 200 PWPs with traditional meters (WSP 2013, pg. 37-38).

7.4.2 PWPs and Yard Connections in Small Towns

In principle, small town schemes have the various types of PWPs, although prepaid PWPs have only been tried on a pilot basis.

According to the 2011 Sector Performance Report, small towns are highly effective in extending services through non-house connections. The last reported statistics for small towns as a whole are found in (MWE 2011, Annex 9.2, pgs. 258-262)

Of total small town connections (No. 39,135) as of June 30, 2011

Yard connections represented 87.5% (No. 34,229)

House connections represented 10% (No. 3,900)

Kiosks represented 2.6% (No. 1,006) of total connections

The latest published data on recently constructed small town schemes, in 2010 and 2011, indicate a much different trend, with house connections predominating (MWE 2010, Annex 9, pg. 204; MWE 2011, Annex 9.1, pgs. 256-57):

Of total small town connections (No. 3,701) constructed 2010/2011:

House connections represented 88% (No. 3,258)

Kiosks represented 8.3% (No. 307)

Yard connections represented 3.8% (No. 136)

The following paragraphs summarize available information on the experience with the various types of PWPs.

Traditional PWPs and Kiosks

WSDFs generally locate a PWP in each ward or parish, with special consideration given to dense settlements, and based on the number of applications received.[59] Funding limits the number that can be constructed.

[59] Presentation by WSDF-Central at National Stakeholder Workshop, September 25, 2014.

Note that the number of PWPs alone is not a reliable indicator of service delivery to the poor, especially in small towns. As mentioned in Sub-section 7.1, PWPs are used as one means to hold down scheme investment and O&M costs by limiting water consumption. Pro-poor practices typically expand rather than limit water consumption.[60] Whether scheme designs with a relatively high proportion of PWPs deliver water to more poor people (however defined) would need to be determined through empirical study.

Two types of management for PWPs were reported. One type is when the PWP essentially operates as a small independent business, with an individual reselling the water at a mark-up meant to ensure a profit. The other type is when the private operator hires an attendant to sell the water, apparently also at a mark-up. There was no report of a third management type, under which a community or neighborhood group manages the PWP, and sells water at a price only to cover costs.

Information from interviews suggests that PWPs located near the house of someone who will sell the water for a profit function better than either kiosks, or PWPs located in genuinely public areas. The kiosk structure is expensive to build, and selling water on a full-time basis is generally not profitable. PWPs in public areas are subject to vandalism and require the attendant to work on a fixed schedule. Building the less expensive PWP structure close to a house where household members can sell water on a part-time basis (according to demand) gives better value for money. In essence, this is moving away from the PWP concept toward shared yard connections, discussed below.

Comprehensive data are not available on the numbers of the PWPs versus kiosks in small towns. MWE reported in 2010 that PWPs represented 1.8% of small town connections and 3.2% of large town connections (MWE 2010, pg. 117). The subsequent year kiosks were reported to be 2.6% of small town connections (see above). Thus, it seems as though these terms are used interchangeably, regardless of the physical structure or management model.

No information is available on bill collection from PWPs. NWSC experience indicates nonpayment and high arrears are the most significant drawbacks to PWPs and kiosks.

Prepaid PWPs

Prepaid PWPs under small town conditions were installed in February 2011 in Koboko Town, located in the far northwest of Uganda on the border with the Democratic Republic of Congo (RUWASS 2014).

The RUWASS review concluded that the prepayment technology was not appropriate for small towns, at least in the fashion tested in the pilot. A single private operator in a remote location could not manage the spare parts procurement, sales, information technology, and so forth required to operate and maintain the prepayment technology. Also, intermittent supply from the scheme made it impossible for the prepaid PWPs to supply water 24/7, a key advantage to this technology.

The review concluded that, if this technology is to work in small towns, it must be implemented such that private operators can benefit from economies of scale. This coincides with another recent analysis by WSP of eight cases from seven African countries that use pre-paid meters. One of the conclusions of this report clearly points out that pre-paid meters become viable to the service provider when certain volumes are being provided, as best illustrated by institutional or industrial customers as well as some high-density PWPs (Heymans et al, 2014).

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[60] The GIZ review of urban pro-poor practices in small towns reached a similar conclusion, namely that town water supply capacity must be increased in order to supply more water to the urban poor.

Shared Yard Connections and Authorized Water Vending

One urban action in the 2006 Pro-Poor Strategy involved establishing authorized water vending. The concept is to permit and encourage domestic connection holders to resell water to their neighbors at the same tariff established for PWPs. These authorized vendors would be allowed to keep a percentage of the tariff as a profit.

NWSC has implemented a similar concept through shared yard taps. The utility uses meter readings to identify yard connections that are operating as virtual PWPs, verifies this situation through field visits, and then applies a lower tariff. This approach avoids the problem of having households apply for connections with the special tariff and then using the water mostly for themselves.

Small town schemes offer yard connections, and the general assumption is that water reselling takes place at nearly all of these taps to some extent. However, neither the shared yard tap approach of NWSC nor the authorized vending concept has been tested or implemented. RUWASS has developed a concept paper that could be the basis for a pilot.

The challenge is how to prevent the resellers from marking up the price to as much as the market will bear, and capturing the subsidy for themselves. The market pressures on prices can be huge in small town schemes, whose production may be far lower than demand.

7.5 Expanded and Densified Networks in Low-Income Settlements

NWSC, particularly in Kampala, has constructed a considerable number of new pipelines in low-income settlements. As explained in Sub-section 7.1, concessional funding has gone into both projects targeted at expanding the network in low-income Kampala settlements and in expanding production capacity to supply the system. Still, the amount of water available in the system has constrained network expansion and new connections. Overall, per capita consumption has fallen by half between 2002 and 2010 (WSP 2013, pg. 44).

Small town schemes have different challenges, according to information gathered in interviews. WSDFs conduct socio-economic studies as part of scheme feasibility studies. These may or may not identify specific low-income settlements. Unlike in Kampala, the low income households may not be concentrated in separate settlements, but instead may live interspersed with higher income households.

In any case, piped schemes in small towns are designed to serve the densely populated areas, often the town centers, in order to keep the investment and O&M costs at an affordable level. A densely populated rural area adjacent to the small town boundary is more likely to be served before a less densely populated area within the small town's administrative boundaries. These practices are in line with the DWD piped scheme design guidelines, good engineering practice, and the Pro-Poor Strategy actions calling for urban O&M subsidies to be phased out and for extending pipelines to rural areas adjacent to urban areas.

In other words, the pro-poor practice of extending pipelines to serve low-income households does not make economic or engineering sense, if those households live in less densely populated and scattered parts of small towns.

Furthermore, piped schemes serving certain parts of small towns in principle can lead to worse water services in other parts. Towns with piped schemes have been gazetted, and the responsibility for water services turned over to a local water authority (typically a Water Supply and Sewerage Board). At this point, the district council is no longer directly responsible for water services there, and the District Water Office ceases to construct or maintain the boreholes, or use the District Conditional Water and Sanitation Grant (DCWSG) within the town limits. Meanwhile, WSDFs concentrate their funds on piped schemes

serving a portion of the town's population, and with no responsibility to improve water services through other means for those people outside the piped scheme supply area. The water authority has to take over financial and technical responsibility for improved sources outside the supply area yet within the town. Information is not available on whether in practice local water authorities have been able to maintain or increase town water services both inside and outside the piped scheme supply areas.

7.6 Impact on Households Which Could Not Afford Private Connections

The urban pro-poor practices were designed at the turn of the century (prior to the 2006 Pro-Poor Strategy) mainly with the goal of expanding piped scheme coverage to households which could not otherwise afford a domestic connection. They were not policies specifically designed to expand improved water access among the urban households living below the poverty line or in the Bottom 40%.

The effectiveness of the practices in this regard has been mixed.

In Kampala, the 2013 WSP report summarizes the achievements with respect to this objective as follows:

- Most (77%) of the new connections in Kampala were domestic, that is, yard and house, and most of these new residential connections were for house connections. Thus, the main beneficiaries of the Affordable Connections Policy were those households which had water piped inside their homes. The second largest group of beneficiaries was commercial and industrial connection holders (see Sub-section 7.3.1).
- In 1998-2011, 16,198 additional NWSC yard connections and PWPs in the poor settlements of Kampala can be attributed to the Affordable Connections Policy. These water points served 99,146 people, and representing 21% of the total additional population served as a result of the policy.
- Of the 16,198 new connections in low-income settlements, 2,500 yard taps and 660 PWPs (19.5%) were due to the urban pro-poor practices initiated from 2004.

The 2013 WSP report considers this to be a relatively low number of additional connections in low-income settlements, and attributes this to eight factors, including bill nonpayment for PWPs and yard taps, high connection costs relative to income, insufficient system capacity overall and the limited distribution system in poor settlements, and NWSC incentive to connect first high consumption customers who are likely to pay their bills (WSP 2013, pgs. 31, 41-42).

Pro-poor measures have not been used for the most part in small towns. Most connections are yard or in-house, and made at full cost by the consumers. A small percentage of the connections are for PWPs/kiosks.

7.7 Impact on the Poor and Bottom 40%

The analysis in Section 3 of this report showed that any type of urban pro-poor practice at best would make a marginal contribution to improving service delivery to the poor and Bottom 40%, since relatively few people in these income groups live in urban areas.

The analysis presented in Section 4 and the accompanying Annex 9 showed that, overall, urban piped schemes deliver services primarily to the non-poor. In urban areas, 15% of poor people get their drinking water from piped schemes versus 51% of the non-poor. If one considers only small towns, where the vast majority of the urban poor live, the gap in piped scheme use between the poor and non-poor is not so stark. In any case, "boreholes" (handpumped water supplies) remain by far the principal drinking water source for the urban poor, as the UNHS statistics in Annexes 11-12 show..

The experiences reviewed in this section help us to understand why urban piped water is used primarily by the non-poor, namely,

- Tsimpo and Wodon (2014a) showed that tariff subsidies will not benefit the poor, and that the Bottom 40% would receive just 12.5% of the benefits under any type of subsidized tariff.
- WSP (2013) showed that combined effect of the Affordable Connections Policy in Kampala has mostly gone to domestic connection holders across the city.
- Pro-poor practices have not been applied for the most part in small towns.

8. Water for Production and Public Sanitation

These two sub-sectors are presented together only because there is so little information about either of them.

This lack of information is particularly troubling in the Water for Production sub-sector. There is less scope for the wealthy to capture the benefits from, say, a public toilet in market places. However, there is a huge potential for wealthy farmers and cattle owners to capture the benefits from publicly subsidized investments in water for cattle and farming.

This section serves primarily to bookmark the need for DWD to gather more data on the services delivered to the poor and economically disadvantaged through water for production and public sanitation infrastructures.

8.1 Water for Production

Water for Production in Uganda is actually an inter-sectoral issue, in which the agricultural ministry handles most irrigation systems "on-farm" and MWE the so-called "off-farm" water, including bulk transmission to irrigation projects, and water for livestock provided through earth dams and valley tanks. In addition, the Water for Production Department has developed designs for multipurpose dams and tanks that would provide water for, among other things, drinking and domestic use.

The 2004 PEAP recognized the impact that water for livestock could have on the livelihoods of the poor, since districts dominated by pastoralists (the Cattle Corridor) are among the poorest in the country. In principle, therefore, public investment was appropriate.

However, siting and maintenance of dams and tanks had proved problematic, with 65% of them not functioning. The PEAP therefore recommended that these types of projects be funded mostly through untied local government grants, to ensure maximum participation. Local councils would decide if this water infrastructure was sufficiently high priority to allocate funds, and where the projects would be located. The PEAP noted that DWD had planned USD $24 million in investment in water for production, 2003-06 (MOFPED 2004, pg. 63, 98, 184).

There has been significant investment in tanks and dams. The Water for Production Department (WfPD) constructed 656 tanks and dams 2000-2014, about a third of which are managed under CDMS and the rest by private individuals. There has been some construction by District Councils using DWSCGs, but this has dropped since WFPD purchased earth-moving equipment which it rents out to farmers or uses at subsidized rates (MWER 2014, pg. 82-87).

No information is available on the extent to which poor and economically disadvantaged people benefit from these investments. Yet, as the Pro-Poor Strategy recognized, this is a sub-sector where the significant potential exists for wealthier households to capture the benefits of public spending. Action #14 called for managing subsidies so that they are targeted at the poor rather than all farmers, especially since many cattle owners are relatively rich.

8.2 Public Sanitation

8.2.1 Rural Public Sanitation

Under the 2001 Memorandum of Understanding, District Water Offices are responsible for public sanitation facilities in towns and rural growth centers. DWSCGs, the central government conditional grants to the DWOs, represent the principal funding for these activities.

The DWSCG guidelines state, "Districts are advised to budget for up to 3% of the DWSCG for the planning and provision of sanitation and hygiene facilities in Rural Growth Centres (R.G.Cs) and public places." Elsewhere the guidelines direct that that 65% of the funds allocated to a district should go to the sub-counties, and of this amount, up to 3% can be spent on sanitation. In addition, the districts can spend 8% of the DWSCG on community education and mobilization ("software") activities, including hygiene education.

Despite these guidelines, the funding to public sanitation facilities has been very low. For example, in FY2009/10 less than 2% of the DWSCG was spent on sanitation, of which only half was spent on the construction of public and institutional facilities.

Essentially no information is available on the number, condition, and use of these facilities.

The DDHSs are mandated to spend up to 5% of the Primary Health Care funds on sanitation. These funds would likely go to household sanitation, as this is the MOH/DDHS responsibility.

8.2.2 Urban Public Sanitation

NWSC in collaboration with NGOs and the Kampala city government has pilot tested public latrines in dense low-income settlements, as a means to deal with the space constraints in building household latrines. WSDFs have constructed Ecosan latrines as demonstrations.

MWE commissioned a study of water and sanitation in health, education, and security (police, military, prisons) facilities. For sanitation, the recommendations were that the MOH, MOES, and the Ministry of Internal Affairs should take the primary responsibility for providing sanitation facilities. DWD should provide guidance and regulation. Considerable funding would be required over a five year period to develop and maintain the sanitation facilities: USD 77 million for education institutions, USD 12 million for security institutions, and USD 5 million for health institutions (MMC and MCE undated).

PART IV: TOWARD A 2016 PRO-POOR STRATEGY

9. Conclusions

DWD and its development partners have worked together successfully for decades in dramatically expanding access to improved water supplies. The approach used has been remarkably effective in delivering services to the poor and economically disadvantaged.

The fiscal and political context that facilitated this success has now changed. The bias against delivering and sustaining water services to rural residents has increased. This will disproportionally harm poor and economically disadvantaged people, as they live overwhelmingly in rural areas.

Certain elements in this bias can be corrected, despite the constrained fiscal space. Tariff subsidies on piped schemes are the prime example of such an element. These subsidies discriminate against rural residents, and even against the urban poor and economically disadvantaged. In fact, piped scheme tariff subsidies discriminate against everyone except for the wealthiest income groups., as Tsimpo and Wodon (2014a) have so convincingly demonstrated. Continuing tariff subsidies also run counter to the national water policy, which calls for full cost recovery for large town water supplies.

A second element is to give more priority to urban handpumped supplies ("boreholes" in Ugandan parlance). The narrow focus on urban piped schemes has indeed raised the access of the urban poor and Bottom 40% to this type of supply above that enjoyed by rural residents (see Tables 32 and 36). However, boreholes remain by far the principal water supply used by the urban poor and Bottom 40%. Given the modest effectiveness of pro-poor practices to expand piped scheme coverage in large towns, and the ineffectiveness of these practices in small towns, more funding and management support to urban boreholes should be forthcoming.

Nonetheless, the fiscal reality seems to dictate that the bias against improved rural water supplies will continue, although it goes far beyond the parameters of this desk study to analyze the macroeconomic situation as it affects water and sanitation budgets.

Therefore, DWD and its development partners should take special steps to protect water services to the poorest and most economically disadvantaged, by channeling additional assistance to the sub-counties where poverty and economic disadvantage are highest, and improved water access lowest.

10. Recommendations

The recommendations are divided between those concerning the process of developing a new pro-poor strategy, and ideas for the content of the strategy.

10.1 Strategy Development Process

A main purpose in the following proposals for a participatory process is to ensure frontline workers in water service delivery (staff in WSDFs, TSUs, DWOs, and NGOs) have ample opportunity to contribute their ideas to the new strategy. The recommended process will result in many additional ideas for the strategy's content.

1. Establish milestones for developing the new strategy that are tied to the main sector planning procedures.

The SWAp established procedures that have been very effective in promoting collaboration among stakeholders around agreed actions. These procedures include the preparation of annual Joint Sector Reviews and Joint Technical Undertakings, various sector-wide working groups, etc. (see Section 2.1 for further description). A new pro-poor strategy is less likely to slip from view – the fate of the 2006 strategy, as explained in Section 1.3 – if the new strategy is fully integrated into SWAp procedures.

DWD should clearly link the deadlines for completing and launching the new pro-poor strategy to the planning cycle. This timeline might include the following milestones:

- **2015 Joint Sector Review:** Proposal to develop new Pro-Poor Strategy submitted and accepted; Joint Technical Undertaking to develop strategy through participatory process planned
- **2016 Joint Technical Undertakings Review:** Draft strategy presented and approved
- **2016 Joint Sector Review:** Final strategy presented and approved

Of course, the milestones must be embedded in a more detailed plan to develop the strategy through a participatory process.

2. Secure technical and financial assistance for the strategy development process.

DWD successfully developed a pro-poor planning procedure in 2009, with technical and financial assistance form numerous development partners.[61] This process will require similar support.

3. Prepare a program and materials for regional workshops on the proposed strategy.

Workshops in each of the eight TSU regions will open up the process of strategy development to those who must eventually make the strategy work. The workshops are a mechanism both to incorporate their ideas into the strategy, and to educate these staff about the definitions and location of the poor and Bottom 40% in Uganda. The strategy will not succeed if its implementers equate the poor and Bottom 40% with everyone living in rural areas, small towns, and low-income settlements in large towns.

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[61] Technical assistance came from the International Livestock Research Institute (ILRI) and the World Resources Institute. Funding came from Swedish, Dutch, Irish, Danish, and U.S. development cooperation, and The Rockefeller Foundation and ILRI.

4. Include measurable objectives and outcomes, and a plan for regular progress reporting, in the strategy.

The 2006 strategy never made clear what it was supposed to accomplish and by when. Stating that indicators should be developed later, as part of implementing the strategy, did not work. The lesson learned is make long-term objectives and intermediate outcomes part of the strategy, with corresponding indicators and target values.

Measurable indicators and targets have little practical consequence if there is no system for regular reporting them in a way that holds DWD accountable. There are various ways in which this could be accomplished. For example, there could be a biennial poverty report, a section in the annual Sector Performance Report, additional Golden Indicators, a series of technical undertakings planned in advance, or some combination of these and other methods. The key requirement is that the reporting system should be part of the strategy document, and not left for later development.

10.2 Strategy Content

The ideas in this sub-section below are mainly intended to kick-start the discussion of the strategy among DWD and DWO staff, their partners, and beneficiaries, as outlined in the previous sub-section.

5. Reduce piped scheme tariff subsidies.

Subsidized tariffs are anti-poor. Full cost recovery for urban supplies is a long-standing sector principle, included in the National Water Policy.

Reducing urban tariff studies therefore would be an appropriate goal for the new pro-poor strategy, with indicators, along with specific annual and end targets. The best way to ensure regular monitoring of this important principle would be to develop a Golden Indicator for it.

6. Assist local Water Authorities, WSSBs, and local private operators and individuals to integrate the management of handpumped supplies and piped schemes.

Handpumped supplies are the main technology serving the urban poor and economically disadvantaged. As explained in Section 7.5, WSDF investments may underinvest in handpumped supplies in favor of network solutions, and undermine handpump management and maintenance. Small town water supplies will serve the poor and Bottom 40% better if both technologies are used.

Global experience offers ample evidence that handpumped supplies will undermine water sales from piped schemes, if there are not uniform tariffs and a single management structure. Technical support, performance contracts, and management contracts should reflect this.

7. Develop targeted programs to improve access and other aspects of improved water services to both the poor and the Bottom 40%.

Targeted programs aim to deliver improved water services specifically to the poor and Bottom 40%. Of course, targeted programs are rarely perfect, especially when they involve constructing and maintaining water infrastructure rather than, say, conditional cash transfers. But, targeted water programs can be much more effective in reaching the neediest income groups, compared to approaches based on serving all rural people with improved water supplies, or all urban residents with piped water schemes.

Uganda's poor are desperately poor, and certainly deserve special efforts to provide them with improved water services. This is especially justified, given that the poor themselves have said that improved water supply is their priority.

However, many of the people above the Uganda poverty lines nonetheless live in extreme poverty by international standards. Furthermore, in an era where poverty eradication has lost its political persuasiveness, programs and strategies to help *forty percent of the Uganda population* may garner more political support and public backing than programs solely focused on the poor.

In programs designed to improve access by the Bottom 40%, it is still possible to include selection criteria that give greater weight to serving the poorest first.

The following recommendations list steps in the process of developing targeted water programs to serve specifically the poor and Bottom 40%.

7.1. Collaborate with UBOS to identify the sub-counties with the highest levels of poverty and economic disadvantage and the worst water access rates.

DWD and UBOS collaborated in 2009 in developing a methodology to target water investments based on access and poverty rates at the sub-county level (discussed in Section 6.2). That methodology should be adapted to identify the sub-counties eligible to participate in a targeted program to increase access to the poor and economically disadvantaged.

Key to this methodology is the data on poverty at the sub-county that will become available when UBOS releases statistics from the 2014 national census. UBOS will produce several types of poverty statistics at the district and sub-county levels, using small area estimation to combine results from the 2012/13 UNHS and the 2014 census. The most useful types of poverty statistics for DWD planning are poverty headcounts and poverty headcount indexes (called "numbers of the poor" and "poverty rates" in this report), and the poverty gap measure (discussed in Section 3.3).

In addition, analogous statistics of "economic disadvantage" should be developed. Poverty statistics are calculated using the poverty lines. For "economic disadvantage statistics," the poverty line is replaced with the income that demarcates the Bottom 40% from the Top 60% in making the identical statistical calculations. This was done in the final three tables in Annex 7 to produce the headcounts and headcount indexes for the numbers and percentages of the Bottom 40% in different areas.

7.2. Conduct case studies in selected districts and sub-counties with the worst statistics on poverty, economic disadvantage, and water access rates.

The sub-counties identified in the first step of the process are likely to represent quite diverse water supply challenges. Some sub-counties may need to be served through national rural water programs, others through dams and tanks rehabilitated, yet others may need management support more than investment. Furthermore, the challenges in delivering services to the most needy will vary depending on whether, say, everyone in the sub-county is poor versus pockets of poverty and wealth.

The purpose of the case studies is to understand better the types of program interventions that would work in a range of situations. This information will be the basis for developing a pilot program to test implementation of the targeted program.

7.3. Develop a pilot targeted program for approximately ten sub-counties.

Pilot programs fell into disrepute because they tend to benefit from an unreplicable level of financial and technical support. On the other hand, implementing programs at scale without pilot testing has led in some cases to making mistakes at scale. To avoid the pitfalls of pilot programs, the ten sub-counties

should be located in several regions. The case studies can be a guide to the range of situations which a program would have to cover. The pilot sub-counties should be selected to represent this range .

A key element in the pilot program will be to test how to coordinate public funding through the various channels (described in Section 2.4). A targeted program should not undermine the principles of decentralization, and therefore conditional grants to the DWOs should be part of the package. However, DWSCGs have not been sufficiently targeted to sub-counties in most need; a mechanism must be tested to address that challenge. Equally important, the implementation funding still controlled by DWD's departments (RWSSD, UWSSD, and WfPD) has to be tied in part to funding these services for the poor and Bottom 40%.

8. **Undertake a field study of access by the poor and Bottom 40% to water for production (earth dams, valley tanks, and multiuse schemes).**

This review could not cover the above topic, due to a lack of documentation. This should be corrected both because of the great danger – cited in the 2006 Pro-Poor Strategy—that wealthier farmers can capture disproportionate benefits from WfP projects, and the great potential for such projects to improve health, productivity, and livelihoods of the poor and Bottom 40% in the cattle corridor.

The study should lead to recommendations for how better to incorporate WfP projects in the targeted pilot program, and other changes that could improve the pro-poor impact from these WfP investments.

9. **Improve reporting on public sanitation facilities.**

Responsibility for sanitation facilities in markets and other public places in small towns and RGCs falls squarely on DWOs, but data on the construction and maintenance these facilities is not available.

ANNEXES

Annex 1: Pro- Poor Strategy for the Water and Sanitation Sector

Below is the text from the strategy paper published by the Ministry of Lands, Water, and the Environment, Directorate of Water Development in March 2006. It has been reformatted to reduce the number of pages.

1. Introduction

The objective of the pro-poor strategy is to improve effectiveness of the water and sanitation sector in providing services to the poor.

This strategy is based on the outcome of the deliberations of the Finance Thematic Sub-sector Working Group led by the Directorate of Water Development (DWD) with the participation of the main stakeholders. A pro-poor concept note was produced in 2004 which reviewed the pro-poor performance of current policies, strategies and practice.

The main findings concerning policies and strategies were that:

- *Water sector policies and strategies are broadly directed towards improving the social and economic situation of all Ugandans.*
- *The overall subsidy policy is well founded on the principles of ensuring that subsidies are directed at ensuring a minimum basic supply but there is room within the strategies for revision and clarification of how the principles can be applied in practice.*
- *The policies and strategies recognize very strongly the principle that financially viable and well-run service provision is in the long term interests of the poor and at least in urban areas that subsidies should not be provided in the long term.*
- *Recognition of the poor as a specific target group is weak except in the water for production sub sector as a result there are few specifically pro-poor policy measures.*
- *The social mission of the government is alluded to in some of the documents but this concept and its implications remain unclear.*

The main findings concerning current practice were that

- *The pro-poor policy practice of urban water and sanitation[1] provision for large towns is in compliance with medium term policies and strategies and a pro-active approach is being taken in trying to serve the poor.*
- *The practice in small towns has not in the past followed the policy (flat tariffs which mean the poor, who often access water through vendors, end up paying more than the well off; operation and maintenance are subsidized for those already served leaving the unserved without). There still remain political constraints in raising the tariff combined with ineffective regulation are leading to inadequate performance of water authorities and monopoly providers are delaying the adoption of the long-term policy vision of an efficient market for water services. Such a market would create the best conditions for pro-poor services.*

[1] Sanitation refers to both on and off site sanitation (sewerage)

- *The presence of donor funding of subsidies, in principle, can also delay the onset of the incentives and conditions necessary to take the necessary long-term decisions.*
- *In rural areas the compliance with policy is patchy (contributions are not always made and operation and maintenance is subsidized) with, in some cases, negative consequences for the poor.*
- *Tracking studies have indicated that the money allocated to the sector reaches the sector but value for money studies indicate inefficiencies in the use of the funds.*
- *The overall per-capita cost of supply has varied significantly over the years.*
- *The strategy for Water for production has not yet been implemented in practice since funding has not been available and the reform study and strategy approval have taken much longer than envisaged .*
- *Water resources management follows policy, but this policy is poor neutral rather than pro-poor.*
- *Sector allocation in practice has not followed the Poverty Eradication Action Plan and sector targets. Urban areas have received a disproportionate amount of the funding and will for that reason attain their targets in advance of the rural areas – although there is always likely some pockets of unserved given the social economic situation in Uganda. This situation is now being rectified – already in the MTBF of 2006/7. There is a commitment to better allocate funding to the sub sectors using a sector investment model.*

The concept note reviewed the various definitions of the poor[2] that are used in Uganda and more specifically the role of the water and sanitation sector in eradicating poverty as presented in the Poverty Eradication Action Plan (PEAP).

This document summarizes the pro-poor strategies and presents both general strategies and strategies that are specific to rural water supply and sanitation; small towns water supply and sanitation; large towns water supply and sanitation; water for production and, water resources management.

The major concern has been to develop a simple and short, action biased strategy. A 30 point strategy is presented to cover all the specific areas of the water and sanitation sector within the mandate of the Directorate of Water Development and the National Water and Sewerage Corporation (NWSC).

Once adopted it is up to the relevant institutions (DWD and its various departments, NWSC, NGOs, private sector, etc.) to implement the strategy. The strategy will be reviewed and where necessary updated after a period of two years.

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[2] See concept note 2004 page 1 "Many studies have been made to identify who the poor are. In Uganda, the poor are defined against a number of criteria both quantitative and qualitative. An often-used limit for poverty is the expenditure of 1 USD/ day or less. With this criterion it is reported that 38% of Ugandans are poor. Poverty is a complex and multi-definition concept. In Uganda poverty can be seasonal and vary with time, it varies from person to person and it varies in acuteness (degree of poverty) as well as how long lasting it is (chronic). Poverty involves much more than any one simple quantitative factor can describe. Readers interested in the subject are referred to "*The Face of Chronic Poverty in Uganda as seen by the Poor Themselves Charles Lwanga-Ntalea and Kimberley McCleanb.(undated)"* and "*Julian May, An Elusive consensus: Definitions, measurement and analysis of poverty*" – both of which are based much on conditions in Uganda."

2	**General Strategies**	
1.	Allocate sub-sector budget equitably	A more equitable sub-sector allocation in budgeting will allow subsidies to better reach the poor. The allocation will be guided by the Sector Investment Model (SIM). Currently the rural sub-sector receives less than 50% of the total budget for delivering services to more than 85% of the population
2.	Improve overall sector performance using the performance framework	Improving overall sector performance will ensure that public funds go further in providing services and that these services are better targeted. The sector performance measurement framework will be used as a guide to identify issues that need to be addressed to improve performance particularly those directly related pro-poor strategies such as equity of access to Water and Sanitation (W&S) services.
3.	Lower costs of service delivery	Reducing the cost of services has a double impact for the poor. Firstly it makes services more affordable and second it makes more funds available (money saved from cost reductions) to be used on targeted services to the poor. Examples of financing approaches that could lead to lower costs include Output Based Aid/subsidies for the Rural Growth Centers as well as the simplified new connections policy of the NWSC. Other initiatives include anti-corruption measures and improving procurement, contract management; operation and maintenance and regulation.. In certain circumstances higher capital investment costs will be considered for water supply technologies when it leads to substantially lower O&M costs.
4.	Improve sanitation and hygiene practice	Poor hygiene and sanitation exerts the highest toll on the poor. The poor suffer health consequences, are least able to cope with the cost of illness. Public funds will be used for training, continuous promotion including use of social marketing techniques, campaigns and competitions, incentives and sanctions, coordination, leveraging the private sector participation and monitoring. Due consideration will be made for gender issues and people with disabilities.
5.	Monitoring the impact of W&S services on the poor	In order to continuously improve the pro-poor strategy the sector will, where possible, the monitor the impact of the pro-poor strategy on the poor and subsequently make adjustments to as necessary. Indicators need to be developed for inclusion in the Sector Performance Report. Collaboration will be strengthened with the Uganda Bureau of Statistics to make maximum use of their studies (e.g. NSDS, NDHS, UPPAP). Where necessary in-depth studies will be carried out to fill the knowledge gaps.
6.	Gender, people with disabilities and HIV/AIDS mainstreaming	Women play a vital role in water supply and sanitation particularly domestic level where they are usually responsible for water collection, water use, sanitation and hygiene activities. Priority will therefore be given in ensuring their participation as beneficiaries of services and adequate representation management of services at all levels e.g. WUC, Local and Central Government. Vulnerable groups such as the disabled and those effected by HIV/AIDs level will also be prioritised in service delivery.

7.	Implement Integrated Water Resource Management (IWRM)	IWRM encourages participatory mechanisms such as Water User Associations (WUA), Water Boards or Catchment Agencies. These mechanisms give the poor a voice, that they would otherwise not have, in the control of water resources which are often crucial to their livelihoods e.g. fishermen who depend on pollution free waters; farmers who need supplementary irrigation.
2	**Rural Water Supply and Sanitation Strategies**	
8.	Empower communities through participation to ensure cross-subsidy	Communities themselves are in the best position to define who is poor and the most appropriate way to assist them (e.g. support in-kind and cross-subsidy for capital and O&M contributions). If the communities are empowered by being involved in key decisions and trained to undertake the main responsibilities the facilities will be better managed and will be more effective in serving the poor. Rural sector guidelines will help mainstream this action.
9.	Target W&S services towards the poor and unserved	W&S capital subsidies will be targeted to the unserved and underserved (improving distance to source) through the district allocation formula. Increasing the total conditional grant will ensure that additional funds go to those districts with lowest levels of water coverages. Guidelines will be developed (as part of the sector schedules) to ensure that W&S services are better targeted within districts. Services will also be targeted for emergency/special situation such as the Internally Displaced Persons (IDP) camps in the North of Uganda.
10.	Increase density of water points / networks and thus reduce distance to water source	Currently, rural access to safe water is defined as an improved water source within 1.5 km of the home. The sector is committed to reducing the distance to source so that collection time is reduced. This should result in either more water used per capita or potentially more time is available for economic activity, education and child care.
11.	Encourage self supply based on markets solutions	The sector will encourage those who have the resources to build their own private water supply where this is appropriate. Experience has shown that many consumers have access to private supplies and this takes some of the burden away from public sources (both in terms of reducing distance source and number of users per source (relating to queuing time). A study will be launched to assess and develop the possibilities further.
12.	Rain Water Harvesting (RWH)	RWH can greatly reduce time/effort spent in collecting water which can be particularly important for the old and disabled. It also helps to relieves the burden on traditional water sources. Experience from pilot studies by NGOs/GoU has been used in developing a strategy for promoting RWH nationally. Some form of subsidy will be considered in areas with poor surface and ground water where traditional water sources are not appropriate.
13.	Water Quality Protection and monitoring	The pro-poor impact of regular water quality monitoring for rural areas is similar to that for urban. In rural areas regular monitoring will help in the selection of water technologies that can eliminate or minimize expensive treatment. This will tend to reduce unit costs and enable subsidies to reach more of the poor. It will also tend to reduce the

		operational costs of water supply thus increasing the income available for other purposes.
3	**Water for Production Strategies**	
14.	Prioritize interventions in poorest geographical areas	Subsidies will be provided for water services (through construction of small valley tanks and dams) to vulnerable groups which comprise of subsistence farmers. The subsidies will be managed so that they can be targeted at the poor rather than all farmers (especially since many cattle owners are relatively rich).
15.	Phase out use of grants for operation and maintenance	Conditional grants are being provided through the rural water sub sector to local governments to meet the O&M requirements of the existing communal water facilities these will be phased out so that the limited funds can be directed at providing facilities to those not yet served.
16.	Involve women in planning and management	A participatory approach empowering the poorest of the poor and especially women will be adopted. Women and communities will be encouraged to participate in the management of water facilities put in place.
17.	Subsidize bulk rural supplies in highly disadvantaged areas	The water for production sub sector is pursuing bulk water supply for multi-purpose use to rural areas with the aim of increasing accessibility to areas which have hitherto been disadvantaged. Subsidies in form of lower tariffs will be considered.
5	**Small Town and Large Town Water Supply and Sanitation Strategies**	
	The pro-poor strategy for small and large towns will address both the immediate needs of the very poor but also the longer term economic and social benefits that will arise from the improved prospects for economic growth in urban centres that are reliably served with water and sanitation services. Thus the strategy has two parts.	
	Strategies with Immediate Impact	
18.	Enhance access by densifying the network and expanding to unserved areas.	Networks will be expanded to clearly defined geographical locations hereunder urban poor settlements so as to bring the water services nearer to the users. The target is that all in a small town area have access to a pipeline within a distance of 200 meters.
19.	Directly serve the poor by establishing Public water points	Public water points in the form of authorised yard taps or water kiosks (or possibly - wells fitted with a hand pump) should be established at an intermediate distance of 400 meters in all areas of a small town which are underserved, in order to serve the part of the population (i.e. the poor and disabled), who cannot afford individual yard and/or house connections.
20.	Directly serve the poor by continuously updating a Pro-poor tariff	Appropriate means of cross-subsidy is available in the tariff regulations e.g. the tariff for water from public water points (authorised yard connections, water kiosks, wells etc.) is less than the tariff for water to ordinary house/yard connections but this has yet to be fully implemented. Often the poor in urban areas cannot afford house/yard connections and therefore cheaper water from public water points (authorised yard connections, water kiosks, wells etc.) directly benefits the poor. The aim is that the poor who use public water points should

		not pay more for water than other better served customers. There is a need to constantly survey how well the tariff is serving the needs of the poor and to update accordingly.
21.	Directly serve the poor by subsidising yard connections serving as authorised public water points	In poor areas of a small town the water authority may select authorised yard tap dealers and finance the connection in full which in return serves as a "public water point" managed by the "owner". A condition should be that the owner on license undertakes and manages on-sale for a period of at least two years under supervision and control of the authority.
22.	Directly serve the poor by providing smart subsidy to operation and maintenance	In the long term subsidies are a threat to sustainability and increased coverage (there is only O&M subsidy for small towns). Smart subsidies for the poor (e.g. lower tariff for water from standposts) and cross-subsidies between towns (so towns are not punished because the environment in which they are located) are appropriate so long as the total subsidy to the O&M of small towns is phased out. Subsidies are better reserved for those that still don't have water rather than for those that already do.
23.	Directly serve the poor by continuously monitor water quality	Operational and compliance water quality monitoring need to be intensified by service providers to ensure the poor are consuming safe water. Monitoring will enable protection from activities which undermine water quality and allow early prediction of deteriorating water quality and implementation of appropriate corrective actions. Regular monitoring can also help plan the best response in cases of emergencies or extreme pollution events.
	Strategies with a longer term economic benefit	
24.	Enhance access by expanding the network to rural parts of a gazetted Water Supply Area.	This strategy will ensure that the poor on the peri-urban fringes to also benefit from reliable water supplies if point sources are unsuitable for technical or geographic reasons e.g. saline groundwater. At the same time it will expand the urban areas and improve the prospects for greater economic integration of rural areas.
25.	Enhance coverage by subsidising yard and house connections (after completion of initial stage of a system)	High connection costs inhibit the demand for house connections. It has therefore been decided that in order to enhance easy access to clean water, yard and house connections should be subsidised. Such subsidy should decrease over time. In towns or areas where affordability studies indicate that households can pay the full connection fee - there should be no subsidy.
26.	Enhance use of improved latrines	The poor will not, in the near or foreseeable future, be able to afford off site facilities. But in urban areas the on-site options are declining due to densification. Therefore the Water Authorities (WA) and other local authorities should enhance use of improved latrines (e.g. ecological latrines) in areas where off site sanitation is not appropriate due to technical or financial reasons.
27.	Provide sanitation services in institutions and public places	WA and local authorities should enhanced adequate and improved facilities in institutions (schools, clinics etc) and establishment of public toilets in public places (bus stations, markets etc) where such facilities are inadequate or not existing.

28.	Seek financing for off site sanitation (sewerage) where appropriate	This measure is aimed at sustaining and improving the overall environmental quality of the urban areas and also at preventing public health problems due to inadequate management of sanitation. The measures will help both rich and poor. The poor will benefit because they are disproportionately exposed to the environment and health problems of poor urban sanitation.
6	**Water Resource Management Strategies**	
29.	Regulate water abstraction and wastewater discharge	The regulation for water abstraction and wastewater discharge will be strengthened. The poor are usually most affected by limited availability of water resources due to excessive, uncontrolled and competing water abstractions especially in peri-urban areas, which are densely populated. In addition pollution of water resources due to wastewater discharge, onsite sanitation, refuse disposal and poor land use practices affect the quality of water resources and hence have direct impacts on the health of the poor and on the cost of water due to high water treatment costs. Water regulation and allocation will also ensure that highest priority is given to water use for domestic demand particularly for the needs of the poor rather that those already supplied.
30.	Exempt small users from abstraction permits	All users of motorised pumps and those abstracting or impounding water in excess of $400M^3/d$ have to obtain a permit. The issuance of this bulk water abstraction is to not only to ensure safeguards to the developer but also to ensure that the poor are nor deprived of their water rights for domestic use. All other abstractions using hand pumps or any other lesser means that is commonly used by the poor are not subject to permits.
31.	Assess environmental impact of large WR development projects	Environmental Impact Assessment (EIA) on water resources developments as well as continuous reviews and audits will be strengthened. The water resources of the poor are often affected by large scale developments. In addition, protection of water resources is of paramount importance to ensure sustainable fisheries which depend on high quality water resources.
32.	Continuously monitor, assess and map water resources	Assessment and mapping of water resources in various parts of the country will be to be intensified. Water resources assessment and mapping provides water development programmes with key information on the availability and distribution of water resources, and the feasible water supply technology options. This will not only result in sustainable water development programmes but will also lead to lower costs in water provision to the poor and hence increase in water supply coverage. Availability of groundwater maps will lead to a reduction in failure of wells and cost of the initial investments and operation and maintenance of water supply systems thus making more funds available to increase water supply coverage for the poor. Availability of runoff and hydro-climatic maps would also ensure good planning and development of water that is essential under the Plan for Modernization of Agriculture (PMA).
33.	Reduce the vulnerability of the poor to water related natural disasters	The poor, both in the urban and rural often live and work in low lying areas that are susceptible to floods or are in areas that experience limited water supplies and often droughts. They therefore are vulnerable to excessive droughts and floods and often lose their land, animals and food supplies due to these disasters. Continuous

		monitoring and assessments is a step in the right direction but also requires further development of real time monitoring and early warning system.
34.	Decentralize management of Water Resources	Management of water resources at the lowest appropriate level should be promoted as it will benefit the poor and lead to greater decision-making at local levels. The poor will be able to make decisions regarding monitoring, assessment, regulation and allocation of water resources and thus ensure that their interests regarding access to adequate and safe water are properly addressed.
35.	Continuously monitor water quality monitoring	Effective implementation, coordination and supervision of national water quality monitoring programs need to be intensified to ensure that the poor people are consuming and utilizing water fit for the intended purpose. The rich live in pollution free areas whilst the poor often live in areas polluted from improper faecal disposal, municipal and industrial wastes. Data collected will be used to regulate safe water provision, water handling and waste disposal, inform and guide public on water potentials, set guidelines/standards and remedial actions in order ensure sustainable management and development of resources. Community involvement in water source O&M should be linked catchment or watershed management protection of the environment.
36.	Participate in transboundary water resources programmes	Uganda will continue to fully participate in transboundary water resources programmes in order to ensure that the country obtains its fair share of the Nile water resources and guarantee its proper protection against overexploitation and pollution. Availability of adequate and good quality water resources will benefit the poor by ensuring that all their water related demands from the transboundary water resource are met in a cost effective manner.

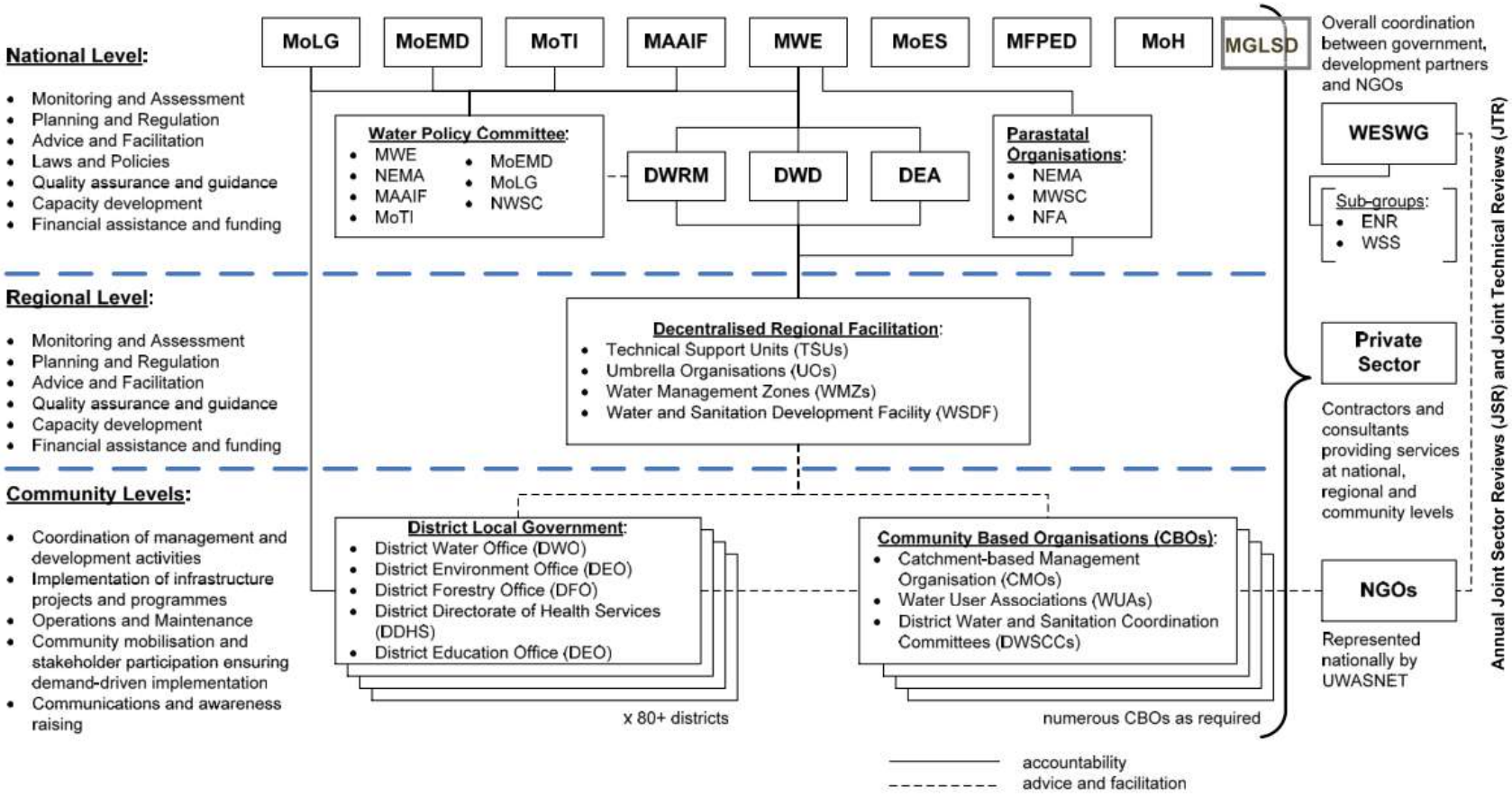
Source: MWLE 2006

Annex 2: Golden Indicators for Water and Sanitation

Indicator			2015 Targets
1. Access % of people within 1 km (rural) and 0.2 km (urban) of an improved water source		Rural	77%
		Urban	100%
2. Functionality % of improved water sources that are functional at time of spot-check (rural/WfP). Ratio of the actual hours of water supply to the required hours (small towns)		Rural	90%
		Urban	95%
		WfP	90%
3. Per Capita Investment Cost Average cost per beneficiary of new water and sanitation schemes (US$)		Rural	$45
		Urban	$85
4.1 Sanitation % of people with access to improved sanitation (Households).		Rural	77%
		Urban	100%
4.2 Sanitation: Pupil to latrine/toilet stance ratio – schools			40:1
5. Water Quality % of water samples taken at the point of water collection, waste discharge point that comply with national standards.	Protected Source - Rural	e. coli	95%
	Treated Drinking Water Supply - Large Towns	e. coli	100%
		colour	100%
	Wastewater	BOD_5	60%
		phosphorus	50%
		TSS	67%
6. Quantity of Water Cumulative water for production storage capacity (million m^3)			29
7. Equity Mean Sub-County deviation from the National average in persons per improved water point			150
8. Handwashing % of people with access to (and using) hand-washing facilities.		Household	50%
		School	50%
9. Management % of water points with actively functioning Water & Sanitation Committees (rural/WfP)/Boards (urban).		Rural	95%
		Urban	95%
		WfP	75%
10. Gender % of Water User committees/Water Boards with women holding key positions.		Rural	95%
		Urban	95%
		WfP	75%
11. Water Resources Management Compliance % of water abstraction and discharge permits holders complying with permit conditions (note that data currently refers to permit validity only).		Wastewater discharge	55%
		Surface water abstraction	75%
		Groundwater abstraction	75%

Source: MWE 2012, Table 1.1, p.3-4.

Annex 3: Organigram of Water Sector Structures and Responsibilities at the National, Regional and District Levels



Source: MWE 2009, Figure 1.2, pg. 8

Annex 4: Uganda Poverty Lines

UBOS has established poverty lines for the rural and urban areas in each region, based on the estimated cost per month in that area to provide for food and nonfood basic needs such as transport, rent, education, and healthcare.

Table 15: Regional Urban and Rural Poverty Lines as defined by UBOS

PPP = Purchasing Power Parity

Region	USh./Month *Constant 2005/6 prices*		USh./Month *August 2013 prices*		US Dollars/Month *Constant 2005 PPP*		US Dollars/Day *Constant 2005 PPP*	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Central	32,106	29,572	67,634	62,296	32.55	29.81	1.07	0.98
Eastern	30,685	28,642	64,641	60,337	31.03	28.90	1.02	0.95
Northern	30,234	28,947	63,691	60,980	30.72	29.20	1.01	0.96
Western:	29,993	28,165	63,183	59,332	30.42	28.59	1.00	0.94

Notes: The conversion of the poverty lines from constant 2005/06 Ugandan shillings into August 2013 shilling prices is approximate, and intended simply to give readers a more intuitive sense of where the poverty lines have been set.

Source: Poverty lines in constant 2005/06 Ugandan shillings and conversion factor into USD PPP from UBOS. Calculations by Clarence Tsimpo Nkengne and Elizabeth Kleemeier.

The poverty lines are based on the cost of basic needs method. This method focuses on the cost of meeting caloric needs, given the food basket of the poorest half of the population and some allowance for non-food needs. The absolute poverty line used in Uganda was developed by Appleton (1999, 2001). The prices have been regularly updated based on the Consumer Price Index.

Annex 5: Large and Small Towns in Uganda

Large towns and *small towns* is MWE nomenclature. *Large towns* comprise the urban areas where NWSC manages the water supply. *Small towns* are urban areas where DWD and local water authorities manage the water supplies. Small towns regularly become large towns, quite independent of their populations, as MWE expands the authority of NWSC.

The following lists are taken from the 2013 Sector Performance Report (MWE 2013, pgs. 52-56, 66). At that time, large towns comprised Kampala plus an additional 29 municipalities and towns. Small towns comprised 156 towns and municipalities. This report has followed this classification of urban areas.

Table 16: Large and Small Towns by Region

Regions	Large Towns	Small Towns
Central	Entebbe, Kampala, Kira, Lugazi, Masaka, Mubende, Mukono, Nansana	Bombo, Bukomansimbi, Buvuma, Bweyale, Gombe, Kakiri, Kalangala, Kalisizo, Kalungu, Kanoni, Kayunga, Kiwoko, Kyankwanzi, Kyazanga, Kyotera, Lukaya, Luwero, Lwengo, Lyantonde, Mateete, Mayuge, Mityana, Mpigi, Nakaseke, Nakasongola, Ngoma, Nkokonjeru, Rakai, Sanga, Sembabule, Semuto, Wakiso, Wobulenzi
Western	Bushenyi/Ishaka, Fort Portal, Hoima Kabale, Kaberebere, Kasese, Masindi, Mbarara	Bugongi, Bukomero, Bullisa, Bundibugyo, Butogota, Butunduzi, Hamurwa, Hima, Ibanda, Igorora, Ishongoro, Isingiro, Kabwohe-Itendero, Kabuyanda, Kagadi, Kambuga, Kamwenge, Kanungu, Karugutu, Kashenshero, Katerera, Katooke, Katuna, Katwe-Kabatoro, Kazo, Kibaale, Kibiito, Kibingo, Kiboga, Kigorobya, Kigumba, Kihihi, Kiruhura, Kiryandongo, Kisoro, Kyaitamba, Kyamusozi, Kyegegwa, Kyenjojo, Mitooma, Mpondwe-Ihubiriha, Muhanga, Nsiika, Ntooroko, Ntungamo, Ntwentwe, Nyahuka, Rubare, Rubirizi, Rubona, Rukungiri, Rushango, Rwashameire, Rwebisengo, Rwimi

Regions	Large Towns	Small Towns
Eastern	Amuria, Bugembe, Iganga, Jinja, Kaberamaido, Malaba, Mbale, Nakaloke, Njeru, Soroti, Tororo	Abim, Amudat, Binyiny, Budadiri, Budaka, Bugembe, Bugiri, Buikwe, Bukedea, Bukwo, Bulambuli, Bulegeni, Busembatya, Busia, Busolwe, Butaleja, Buwenge, Buyende, Kaabong, Kakira, Kaliro, Kamuli, Kanara, Kapchorwa, Kasilo, Katakwi, Kibuku, Kotido, Kumi, Lorengecora, Luuka, Lwakhaka, Manafwa, Moroto, Nagongera, Nakapiripirit, Namayingo, Namutumba, Ngora, Pallisa, Serere, Sironko
Northern	Arua, Gulu, Lira	Adjumani, Aduku, Agago, Alebtong, Amolatar, Amuru, Anaka, Apac, Ayer, Dokolo, Kalongo, Kitgum, Koboko, Lamwo, Maracha, Moyo, Namasale, Nebbi, Otuke, Oyam, Pader, Paidha, Pakwach, Patongo, Yumbe, Zombo

Source: MWE 2013, pgs. 52-56, 66.

Annex 6: Districts and Regions in Uganda

The following table shows the 111 districts plus the City of Kampala, grouped into four regions as defined by UBOS for the 2012/13 Uganda National Household Survey. This report has followed this classification in defining regions.

Table 17: Districts by Region

Regions	Districts
Central	Bukomansimbi, Butambala, Gomba, Kalangala, Kalungu, Lwengo, Lyantonde, Masaka, Mpigi, Rakai, Sembabule, Wakiso, Buikwe, Buvuma, Kayunga, Kiboga, Kyankwanzi, Luwero, Mityana, Mubende, Mukono, Nakaseke, Nakasongola, Bugiri, Busia, Buyende, Iganga, Jinja, Kaliro, Kampala, Kamuli, Luuka, Mayuge, Namayingo, Namutumba
Northern	Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit, Napak, Agago, Alebtong, Amolatar, Amuru, Apac, Dokolo, Gulu, Kitgum, Kole, Lamwo, Lira, Nwoya, Otuke, Oyam, Pader, Adjumani, Arua, Koboko, Maracha (Nyadri), Moyo, Nebbi, Yumbe, Zombo
Eastern	Amuria, Budaka, Bududa, Bukedea, Bukwo, Bulambuli, Butaleja, Kaberamaido, Kapchorwa, Katakwi, Kibuku, Kumi, Kween, Manafwa, Mbale, Ngora, Pallisa, Serere, Sironko, Soroti, Tororo
Western	Buhweju (Nsiika), Bushenyi, Ibanda, Isingiro, Kabale, Kanungu, Kiruhura, Kisoro, Mbarara, Mitooma, Ntungamo, Rubirizi, Rukungiri, Sheema (Kibinga), Bulisa, Bundibugyo, Hoima, Kabarole, Kamwenge, Kasese, Kibaale, Kiryandongo, Kyegegwa, Kyenjojo, Masindi, Ntoroko

Source: Ssennono 2013, Slides 5-6.

Annex 7: The Distribution of Poverty in Uganda

Definitions for Terms Used in These Tables:

Rural Areas = Areas governed by District and Sub-County local government councils. Note that Rural Growth Centres (RGCs) are rural areas, governed by District and Sub-County councils.

Urban Areas = Areas governed by City, Municipal, and Town local government councils. MWE divides urban areas into Large Towns and Small Towns.

Large towns = The 30 urban areas where NWSC managed the water supply as of June 30, 2013 (Kampala plus an additional 29 municipalities and towns) (see Annex 5).

Small towns = The 157 towns where DWD and local water authorities managed the water supplies as of June 30, 2013 (see Annex 5).

Regions = Regions as defined by UBOS for the 2012/13 UNHS (see Annex 6).

Poor, Poor People = Ugandans living under the regional poverty lines set by UBOS (see Annex 4).

Bottom 40% = Ugandans in the poorest two wealth quintiles (see Box 1).

Source: Calculations by Clarence Tsimpo Nkengne and Fred Vincent Ssennono from 2012/13 UNHS data.

Table 18: Distribution of Ugandan Population between Rural and Urban Areas

People Living In:	Number *(millions)*	As Percentage of National Population
Uganda	**34.1**	**100%**
Rural Areas	26.4	77%
Urban Areas	7.7	23%

Table 19: Distribution of Ugandan Population within Urban Areas

People Living In:	Number	As Percentage of National Population	As Percentage of Urban Population
Urban Areas	7,703,000	23%	100%
Small Towns	**4,953,000**	**15%**	**64%**
Large Towns	**2,751,000**	**8%**	**36%**
Kampala Only	*1,219,000*	*4%*	*16%*
Other Large Towns	*1,532,000*	*4%*	*20%*

Table 20: Distribution of Ugandan Population Among and Within Regions

People Living In:	Number *(millions)*	As Percentage of National Population*	As Percentage of Region's Population*
Central Region	**8.8**	**26%**	**100%**
Rural Areas	*5.4*	*16%*	*61%*
Urban Areas	*3.4*	*10%*	*39%*
Eastern Region	**10.1**	**30%**	**100%**
Rural Areas	*8.6*	*25%*	*85%*
Urban Areas	*1.5*	*4%*	*15%*
Northern Region	**7.2**	**21%**	**100%**
Rural Areas	*6.0*	*18%*	*83%*
Urban Areas	*1.2*	*4%*	*17%*
Western Region	**8.0**	**23%**	**100%**
Rural Areas	*6.4*	*19%*	*80%*
Urban Areas	*1.6*	*5%*	*20%*

* The percentages have been calculated based on population estimates to the nearest thousand, and not on the figures rounded to the nearest hundred thousand, as shown in these tables. For this reason, the figures for regions' rural and urban shares in the national population (Column 3) do not always add to the regions' share in the national population.

Table 21: Distribution of Poor People between Rural and Urban Areas

Poor People Living In:	Number *(millions)*	As Percentage of All Poor People	Poverty Rate
Uganda	**6.7**	**100%**	**19.7%**
Rural Areas	6.0	89%	22.8%
Urban Areas	0.7	11%	9.3%

Table 22: Distribution of Poor People within Urban Areas

Poor People Living In:	Number	As Percentage of All Poor People	Poverty Rate**
Urban Areas*	**680,000***	**10.6%**	**8.8%**
Small Towns	600,000	9.0%	12.1%
Large Towns	80,000	1.2%	2.9%

* In the previous table, this number was rounded to 0.7 million, in order to be compatible with the presentation of other statistics in that table.
** The poverty rate is the poor people in a given area as a percentage of all people in that area. For example, poor people comprise 2.9% (80,000) of the 2,751,000 people living in large towns.

Table 23: Distribution of Poor People Among and Within Regions

Poor People Living In:	Number *(millions)*	As Percentage of All Poor People	Poverty Rate*
Central Region	**0.4**	**6.0%**	**4.6%**
Rural Areas	*0.3*	*4.5%*	*5.6%*
Urban Areas	*0.1*	*1.5%*	*2.9%*
Eastern Region	**2.5**	**37.3%**	**24.7%**
Rural Areas	*2.3*	*34.3%*	*26.7%*
Urban Areas	*0.2*	*3.0%*	*13.4%*
Northern Region	**3.1**	**46.3%**	**43.2%**
Rural Areas	*2.8*	*41.8%*	*46.9%*
Urban Areas	*0.4*	*6.0%*	*33.2%*
Western Region	**0.7**	**10.4%**	**8.8%**
Rural Areas	*0.6*	*9.0%*	*9.3%*
Urban Areas	*0.1*	*1.5%*	*6.4%*

* The poverty rate is the poor people in a given area as a percentage of the total population in that area. For example, poor people comprise 5.6% (300,000) out of the 5,358,000 people living in the rural areas of Central Region.

Table 24: Distribution of Bottom 40% between Rural and Urban Areas

Bottom 40% Living In:	Number *(millions)*	As Percentage of Uganda Bottom 40%	As Percentage of Area's Population*
Uganda	**13.6**	**100%**	**40%**
Rural Areas	12.2	89.5%	46.2%
Urban Areas	1.4	10.3%	18.2%

* This is the equivalent of the poverty rate, but for the Bottom 40% rather than poor people. The statistics in this column indicate the people in the Bottom 40% as a percentage of the total population in that area. For example, people in the Bottom 40% comprise 89.5% (12.2 million) of the total rural population (26.4 million).

Table 25: Distribution of the Bottom 40% within Urban Areas

Bottom 40% Living In:	Number *(millions)*	As Percentage of Uganda Bottom 40%	As Percentage of Area's Population
Urban Areas*	**1.4**	**10.3%**	**18.2%**
Small Towns	1.2	9.0%	24.2%
Large Towns	0.07	1.3%	7.3%

Table 26: Distribution of Bottom 40% Among and Within Regions

Bottom 40% Living In:	Number *(millions)*	As Percentage of Uganda Bottom 40%	Rural-Urban Distribution	As Percentage of Area's Population
Central Region	**1.56**	**11%**	**100%**	**18%**
Rural Areas	*1.38*	*10%*	*88%*	*26%*
Urban Areas	*0.18*	*1%*	*12%*	*5%*
Eastern Region	**5.39**	**40%**	**100%**	**53%**
Rural Areas	*4.94*	*36%*	*92%*	*57%*
Urban Areas	*0.45*	*3%*	*8%*	*30%*
Northern Region	**4.47**	**33%**	**100%**	**62%**
Rural Areas	*3.91*	*29%*	*88%*	*65%*
Urban Areas	*0.56*	*4%*	*12%*	*46%*
Western Region	**2.21**	**16%**	**100%**	**28%**
Rural Areas	*1.99*	*15%*	*90%*	*31%*
Urban Areas	*0.22*	*2%*	*10%*	*14%*

Annex 8: Sub-Saharan Low-Income Economies Ranked by National Progress toward MDG Targets for Improved Water and Sanitation

Ranked by Improved Water Access		Ranked by Improved Sanitation Access	
Gambia, The	90.1	Rwanda	63.8
Malawi	85.0	Gambia, The	60.2
Burkina Faso	81.7	Burundi	47.5
Zimbabwe	79.9	Zimbabwe	39.9
Benin	76.1	**Uganda**	**33.9**
Burundi	75.3	Congo, Dem. Rep.	31.4
Guinea	74.8	Kenya	29.6
Uganda	**74.8**	Ethiopia	23.6
Liberia	74.6	Mali	21.9
Guinea-Bissau	73.6	Cen. African Rep.	21.5
Rwanda	70.7	Mozambique	21
Cen. African Rep.	68.2	Guinea-Bissau	19.7
Mali	67.2	Guinea	18.9
Kenya	61.7	Burkina Faso	18.6
Sierra Leone	60.1	Liberia	16.8
Togo	60.0	Benin	14.3
Tanzania, Un. Rep.	53.2	Madagascar	13.9
Niger	52.3	Sierra Leone	13
Ethiopia	51.5	Tanzania, Un. Rep.	12.2
Chad	50.7	Chad	11.9
Madagascar	49.6	Togo	11.3
Mozambique	49.2	Malawi	10.3
Congo, Dem. Rep.	46.5	Niger	9
Mean	**59.7**	**Mean**	**24.0**

Notes: The World Bank has categorized the above Sub-Saharan African economies as low income (January 2015), according to 2013 gross national income (GNI) per capita, calculated using the World Bank Atlas method. Low income economies have a GNI of USD1,045 or less. Data are not available for Comoros, Eritrea, and Somalia, which are also low-income economies in Sub-Saharan Africa.

Source: wsscinfo.org

Annex 9: Definitions of Improved Water Access

This report analyzes access to improved water supply based on the JMP definition for basic access, which simply distinguishes between improved, unimproved, and other types of supplies. JMP provides a detailed list of how to categorize specific types of water supplies into these three categories.

The possible responses to the UNHS question "What is the main source of water for drinking for your household?" were recoded in line with JMP instructions, as shown in the following table

Table 27: Definitions of Improved and Unimproved Water Supplies used in this Report

Basic Access (based on JMP basic access definition)	**2012/13 UNHS Responses to**, *"What is the main source of water for drinking for your household?"*
Improved Sources	Piped water into dwelling Piped water to the yard Public taps Gravity flow scheme Borehole in yard/plot Public borehole Protected well/spring Rainwater
Unimproved sources	Unprotected well/spring River/stream/lake Vendor Tanker Truck
Other	Bottled water Other
Technology Types	
Piped Scheme	Piped water into dwelling Piped water to the yard Public taps Gravity flow scheme
Borehole	Borehole in yard/plot Public borehole
Other Improved Source	Protected well/spring

Basic Access (based on JMP basic access definition)	**2012/13 UNHS Responses to**, *"What is the main source of water for drinking for your household?"*
	Rainwater
Unimproved source	Unprotected well/spring River/stream/lake Vendor Tanker Truck
Other	Bottled water Other

Annex 10: Improved Water Supply Access: Overall

Source: The statistics in the following tables were produced by Clarence Tsimpo Nkengne and Vincent Ssennono using 2012/13 UNHS.

Notes: See Annex 9 for definitions of improved supplies. The percentages for types of improved supplies do not add to 100% because the categories of "Unimproved Sources" and "Other" have not been included.

Table 28: Improved Water Supply: Percentage of Households Total, By Rural-Urban Residence, and By Large and Small Town Residence

Type of Improved Supply	National	Rural	Urban	*Large Towns*	*Small Towns*
Piped Scheme	**19**	**9**	**48**	**72**	**33**
95% Confidence Interval	*17-22*	*7-11*	*43-54*	*64-79*	*26-41*
Borehole	**35**	**40**	**22**	**6**	**33**
95% Confidence Interval	*32-38*	*36-44*	*18-27*	*4-10*	*26-41*
Other Improved Supplies	**18**	**19**	**15**	**15**	**16**
95% Confidence Interval	*16-20*	*17-22*	*12-19*	*10-21*	*12-21*
All Types of Improved	**73**	**68**	**86**	**93**	**82**
95% Confidence Interval	*70-75*	*64-71*	*83-89*	*89-96*	*77-86*

Table 29: Improved Water Supply: Percentage of Households By Region

Type of Improved Supply	Central	Eastern	Northern	Western
Piped Scheme	**28**	**14**	**5**	**26**
95% Confidence Interval	*24-33*	*9-20*	*3-7*	*21-33*
Borehole	**19**	**54**	**57**	**16**
95% Confidence Interval	*15-24*	*46-62*	*51-62*	*12-21*
Other Improved Supplies	**18**	**18**	**14**	**22**
95% Confidence Interval	*15-24*	*46-62*	*51-62*	*12-21*
All Types of Improved	**65**	**86**	**76**	**64**
95% Confidence Interval	*60-69*	*80-90*	*71-81*	*58-69*

Table 30: Improved Water Supply: Percentage of Households By Region and Rural-Urban Residence

Type of Improved Supply	Central		Eastern		Northern		Western	
	Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
Piped Scheme	**5**	**58**	**7**	**46**	**2**	**17**	**20**	**48**
95% Confidence Interval	*2-10*	*51-65*	*4-13*	*31-62*	*1-3*	*9-30*	*15-27*	*34-62*
Borehole	**24**	**12**	**58**	**35**	**57**	**55**	**16**	**16**
95% Confidence Interval	*19-31*	*8-19*	*49-67*	*22-50*	*51-64*	*42-67*	*11-22*	*9-25*
Other Improved Supplies	**21**	**14**	**19**	**14**	**14**	**16**	**23**	**19**
95% Confidence Interval	*16-27*	*11-18*	*14-25*	*6-27*	*11-18*	*9-28*	*18-28*	*11-30*
All Types of Improved	**50**	**84**	**84**	**95**	**73**	**88**	**59**	**82**
95% Confidence Interval	*43-56*	*79-88*	*79-88*	*90-97*	*68-78*	*79-94*	*53-65*	*73-89*

Annex 11: Improved Water Supply Access: The Poor

Source: The statistics in the following tables were produced by Clarence Tsimpo Nkengne and Vincent Ssennono using 2012/13 UNHS.

Notes: See Annex 9 for definitions of improved supplies. The percentages for types of improved supplies do not add to 100% because the categories of "Unimproved Sources" and "Other" have not been included.

Table 31: Improved Water Supply: Percentage of Households By Rural-Urban Residence and Poverty Status

Type of Improved Supply	Rural		Urban		National	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Piped Scheme	**9**	**6**	**51**	**15**	**22**	**7**
95% Confidence Interval	*7-12*	*3-11*	*45-56*	*8-26*	*19-24*	*4-11*
Borehole	**38**	**51**	**21**	**50**	**33**	**50**
95% Confidence Interval	*34-41*	*45-56*	*16-26*	*39-61*	*30-36*	*45-56*
Other Improved Supplies	**20**	**15**	**15**	**14**	**19**	**15**
95% Confidence Interval	*18-23*	*12-18*	*12-19*	*8-24*	*17-21*	*12-18*
All Types of Improved	**67**	**71**	**87**	**79**	**73**	**72**
95% confidence interval	*64-70*	*66-75*	*83-89*	*68-87*	*70-75*	*67-76*

Table 32: Improved Water Supply: Percentage of Households By Large and Small Town Residence and Poverty Status

Type of Improved Supply	Large Towns		Small Towns	
	Non-Poor	Poor	Non-Poor	Poor
Piped Scheme	**73**	**30**	**35**	**13**
95% Confidence Interval	*65-80*	*9-64*	*28-43*	*6-25*
Borehole	**6**	**32**	**31**	**52**
95% Confidence Interval	*4-9*	*11-63*	*24-39*	*41-64*
Other Improved Supplies	**14**	**23**	**16**	**13**
95% Confidence Interval	*10-21*	*5-62*	*12-21*	*7-23*
All Types of Improved	**93**	**85**	**82**	**79**
95% confidence interval	*89-96*	*53-96*	*77-86*	*67-87*

Table 33: Improved Water Supply: Percentage of Households By Region and Poverty Status

Type of Improved Supply	Central		Eastern		Northern		Western	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Piped Scheme	**29**	**6**	**15**	**10**	**6**	**2**	**27**	**10**
95% Confidence Interval	*25-34*	*2-15*	*11-21*	*4-25*	*4-9*	*1-5*	*21-34*	*5-20*
Borehole	**19**	**19**	**54**	**55**	**57**	**58**	**15**	**25**
95% Confidence Interval	*15-23*	*10-33*	*46-62*	*44-66*	*50-63*	*51-64*	*11-20*	*16-37*
Other Improved Supplies	**18**	**16**	**18**	**15**	**16**	**12**	**22**	**18**
95% Confidence Interval	*15-22*	*8-27*	*14-24*	*10-22*	*12-20*	*9-16*	*18-27*	*12-28*
All Types of Improved	**66**	**40**	**87**	**80**	**78**	**72**	**65**	**54**
95% confidence interval	*61-70*	*28-53*	*82-91*	*70-88*	*73-83*	*66-77*	*59-70*	*41-66*

Table 34: Improved Water Supply: Percentage of Households By Region, Rural-Urban Residence, and Poverty Status

Type of Improved Supply	Central Region				Northern Region				Eastern Region				Western Region			
	Rural		Urban		Rural		Urban		Rural		Urban		Rural		Urban	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Piped Scheme	**5**	**0**	**58**	**32**	**6**	**10**	**50**	**15**	**2**	**1**	**19**	**11**	**21**	**11**	**49**	**10**
95% Confidence Interval	*2-10*	*0-2*	*51-65*	*12-62*	*3-10*	*4-27*	*35-66*	*5-38*	*1-4*	*1-3*	*11-31*	*3-30*	*15-28*	*6-21*	*35-63*	*1-48*
Borehole	**24**	**22**	**12**	**14**	**59**	**55**	**33**	**46**	**58**	**57**	**54**	**59**	**15**	**21**	**14**	**71**
95% Confidence Interval	*19-31*	*11-40*	*8-19*	*2-56*	*50-68*	*42-67*	*21-49*	*28-64*	*50-65*	*50-64*	*40-67*	*43-73*	*11-22*	*13-32*	*8-23*	*35-92*
Other Improved Supplies	**21**	**15**	**14**	**12**	**19**	**15**	**13**	**21**	**16**	**12**	**17**	**12**	**23**	**24**	**20**	**0**
95% Confidence Interval	*16-27*	*7-27*	*11-18*	*3-41*	*14-26*	*10-22*	*6-26*	*9-41*	*12-20*	*8-16*	*9-31*	*5-28*	*18-28*	*17-34*	*11-31*	
All Types of Improved	**50**	**37**	**85**	**58**	**85**	**81**	**96**	**82**	**75**	**70**	**90**	**82**	**59**	**56**	**82**	**81**
95% confidence interval	*43-57*	*24-52*	*80-89*	*29-82*	*78-90*	*70-89*	*92-98*	*56-94*	*69-81*	*64-76*	*82-95*	*65-91*	*53-65*	*44-68*	*73-89*	*43-96*

Annex 12: Improved Water Supply Access: The Bottom 40%

Source: The statistics in the following tables were produced by Clarence Tsimpo Nkengne and Vincent Ssennono using 2012/13 UNHS.

Notes: See Annex 9 for definitions of improved supplies. The percentages for types of improved supplies do not add to 100% because the categories of "Unimproved Sources" and "Other" have not been included.

Table 35: Types of Improved Water Supply: Percentage of Households By Rural-Urban Residence and Bottom/Top Wealth Quintiles

Type of Improved Supply	Rural		Urban		National	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Piped Scheme	**10**	**6**	**54**	**15**	**8**	**31**
95% Confidence Interval	*7-13*	*4-10*	*48-59*	*10-23*	*6-11*	*27-34*
Borehole	**35**	**47**	**18**	**48**	**45**	**25**
95% Confidence Interval	*32-39*	*42-52*	*14-23*	*39-58*	*41-49*	*23-28*
Other Improved Supplies	**19**	**19**	**15**	**19**	**19**	**18**
95% Confidence Interval	*17-22*	*16-22*	*12-18*	*13-27*	*16-21*	*15-20*
All Types of Improved	**65**	**72**	**87**	**83**	**72**	**74**
95% confidence interval	*61-68*	*68-75*	*83-89*	*76-88*	*68-75*	*71-76*

Table 36: Improved Water Supply: Percentage of Households By Region and Bottom/Top Quintiles

Type of Improved Supply	Central		Eastern		Northern		Western	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Piped Scheme	**32**	**5**	**19**	**9**	**8**	**2**	**29**	**16**
95% Confidence Interval	*27-36*	*3-10*	*13-26*	*4-18*	*5-12*	*10-40*	*23-36*	*11-24*
Borehole	**18**	**24**	**54**	**54**	**56**	**58**	**14**	**22**
95% Confidence Interval	*14-23*	*18-32*	*46-62*	*45-64*	*50-63*	*52-64*	*11-19*	*16-29*
Other Improved Supplies	**17**	**20**	**16**	**20**	**15**	**14**	**21**	**25**
95% Confidence Interval	*14-21*	*14-28*	*11-22*	*15-26*	*11-20*	*11-18*	*17-26*	*19-32*
All Types of Improved	**67**	**50**	**88**	**83**	**79**	**74**	**64**	**63**
95% confidence interval	*62-71*	*41-58*	*84-92*	*76-89*	*73-83*	*69-79*	*69-59*	*55-70*

Table 37: Improved Water Supply: Percentage of Households By Region, Rural-Urban Residence, and Top/Bottom Wealth Quintiles

Type of Improved Supply	Central Region				Northern Region				Eastern Region				Western Region			
	Rural		Urban		Rural		Urban		Rural		Urban		Rural		Urban	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Piped Scheme	**5**	**1**	**59**	**24**	**6**	**8**	**55**	**18**	**2**	**1**	**24**	**7**	**21**	**16**	**51**	**20**
95% Confidence Interval	*3-11*	*2-9*	*52-66*	*11-45*	*3-10*	*3-19*	*39-71*	*9-34*	*1-6*	*0-3*	*14-37*	*2-21*	*15-29*	*10-24*	*37-65*	*8-43*
Borehole	**24**	**24**	**12**	**23**	**62**	**55**	**29**	**52**	**58**	**57**	**51**	**61**	**15**	**20**	**13**	**36**
95% Confidence Interval	*18-31*	*17-34*	*7-19*	*9-46*	*53-71*	*44-65*	*18-43*	*33-71*	*50-65*	*51-64*	*36-65*	*45-75*	*10-21*	*14-27*	*8-22*	*18-58*
Other Improved Supplies	**21**	**21**	**14**	**14**	**17**	**20**	**12**	**20**	**15**	**14**	**16**	**16**	**22**	**24**	**18**	**29**
95% Confidence Interval	*15-27*	*14-30*	*11-18*	*6-30*	*12-24*	*14-27*	*50-25*	*9-39*	*11-19*	*11-18*	*8-29*	*8-31*	*18-27*	*19-32*	*11-29*	*16-47*
All Types of Improved	**50**	**47**	**85**	**61**	**86**	**82**	**96**	**90**	**75**	**72**	**90**	**85**	**58**	**60**	**82**	**85**
95% Confidence Interval	*43-57*	*38-57*	*80-89*	*45-75*	*80-90*	*74-88*	*92-98*	*74-97*	*68-81*	*67-78*	*82-95*	*71-93*	*52-64*	*51-68*	*73-89*	*70-93*

Annex 13: Definition of Improved Sanitation Access

The definition of improved sanitation access in this report is based on the JMP basic definition, which defines any type of toilet shared among households as unimproved. To create a variable in line with this definition requires combining responses from two UNHS questions. One question is "What is the type of toilet that is mainly used in your household?" The second question asks whether or not those facilities are shared by households.

Table 38: Definition of Improved and Unimproved Sanitation Used in this Report

Basic Access (based on JMP basic access definition)	**UNHS 2012/Responses**	
	Value on Shared Facilities (HC15)=	**AND Value on Type of Toilet (HC14) =**
Improved	No (not shared)	Flush toilet
	No (not shared)	VIP latrine
	No (not shared)	Covered Pit latrine with a slab
	No (not shared)	Uncovered pit latrine with a slab
	No (not shared)	Ecosan
Unimproved	Yes (shared)	Flush toilet
	Yes (shared)	VIP latrine
	Yes (shared)	Covered Pit latrine with a slab
	Yes (shared)	Uncovered pit latrine with a slab
	Yes (shared)	Ecosan
	Yes or No	Covered Pit latrine without a slab
	Yes or No	Uncovered pit latrine without a slab
	N/A	No facility/bush/polythene bags/bucket/etc
Other	N/A	Other

Annex 14: Improved Sanitation for the Poor and Bottom 40%

Source: The statistics in the following tables were produced by Clarence Tsimpo Nkengne using 2012/13 UNHS.

Notes: See Annex 13 for definition of improved supplies.

Table 39: Improved Sanitation: Percentage of Households Total, and By Rural-Urban Residence

Type of Sanitation	National	Rural	Urban
Improved	**14**	**12**	**19**
95% Confidence Interval	*13-15*	*11-14*	*16-22*

Table 40: Improved Sanitation: Percentage of Households By Region

Type of Sanitation	Central	Eastern	Northern	Western
Improved	**21**	**17**	**4**	**12**
95% Confidence Interval	*18-24*	*14-19*	*3-5*	*10-14*

Table 41: Improved Sanitation: Percentage of Households By Region and Rural-Urban Residence

Type of Sanitation	Central		Eastern		Northern		Western	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Improved	**19**	**24**	**17**	**16**	**3**	**8**	**10**	**17**
95% Confidence Interval	*16-22*	*20-28*	*14-20*	*9-26*	*2-4*	*4-13*	*8-12*	*12-23*

Table 42: Improved Sanitation: Percentage of Households By Rural-Urban Residence and Poverty Status

Type of Sanitation	Rural		Urban	
	Non-Poor	Poor	Non-Poor	Poor
Improved	**13**	**8**	**20**	**8**
95% Confidence Interval	*12-15*	*5-11*	*17-23*	*4-16*

Table 43: Improved Sanitation: Percentage of Households By Rural-Urban Residence and Bottom/Top Wealth Quintiles

Type of Sanitation	Rural		Urban	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Improved	**14**	**10**	**20**	**9**
95% Confidence Interval	*13-16*	*8-11*	*17-24*	*5-14*

Table 44: Improved Sanitation: Percentage of Households By Region and Poverty Status

Type of Sanitation	Central		Eastern		Northern		Western	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Improved	**22**	**5**	**16**	**18**	**5**	**2**	**1**	**5**
95% Confidence Interval	19-24	2-15	14-20	12-25	3-6	0-4	10-14	2-11

Table 45: Improved Sanitation: Percentage of Households By Region and Bottom/Top Quintiles

Type of Sanitation	Central		Eastern		Northern		Western	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Improved	**22**	**12**	**16**	**17**	**5**	**2**	**13**	**6**
95% Confidence Interval	19-25	8-17	13-20	14-20	4-8	1-4	11-16	4-9

Table 46: Improved Sanitation: Percentage of Households By Region, Rural-Urban Residence, and Poverty Status

Type of Sanitation	Central Region				Northern Region				Eastern Region				Western Region			
	Rural		Urban		Rural		Urban		Rural		Urban		Rural		Urban	
	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor	Non-Poor	Poor
Improved	**19%**	**6%**	**24%**	**0%**	**17%**	**17%**	**15%**	**22%**	**3%**	**2%**	**9%**	**3%**	**10%**	**5%**	**17%**	**0%**
95% Confidence Interval	*16-23*	*2-17*	*20-29*	-	*14-20*	*11-25*	*8-26*	*11-40*	*2-5*	*0-4*	*6-15*	*0-14*	*9-13*	*2-13*	*13-23*	-

Table 47: Improved Sanitation: Percentage of Households By Region, Rural-Urban Residence, and Bottom/Top Wealth Quintiles

Type of Sanitation	Central Region				Northern Region				Eastern Region				Western Region			
	Rural		Urban		Rural		Urban		Rural		Urban		Rural		Urban	
	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%	Top 60%	Bottom 40%
Improved	**20%**	**12%**	**24%**	**14%**	**16%**	**17%**	**16%**	**14%**	**4%**	**2%**	**10%**	**4%**	**11%**	**6%**	**19%**	**2%**
95% Confidence Interval	*17-24*	*8-18*	*20-29*	*7-27*	*13-20*	*14-20*	*8-29*	*7-27*	*2-6*	*1-3*	*6-16*	*0-15*	*9-14*	*4-10*	*14-25*	*0-14*

Annex 15: Public Financing Needs of Water Sub-sectors, as Estimated in SSIP

Sub-Sector	Fiscal Year										
	2009	2010	2011	2012	2013	2014	2016-20	2021-25	2026-30	2031-35	2009-35
Ugandan Shillings millions											
Rural Water	89,169	119,085	143,788	171,509	181,829	192,601	222,461	346,439	383,202	410,721	7,712,093
Sanitation	1,749	2,732	3,929	4,987	4,948	4,948	4,949	4,950	4,348	2,692	107,982
Urban Water and Sewerage	84,457	79,547	118,398	127,985	191,840	84,648	120,791	151,176	154,222	148,230	3,558,971
Water for Production	13,945	29,906	51,100	69,898	75,577	77,415	68,584	81,594	92,844	104,831	2,057,107
Water Resources Management	9,502	18,277	42,642	59,122	48,155	25,621	26,320	28,579	31,229	34,155	804,734
Sector Management	10,270	11,679	14,789	15,816	15,917	11,087	12,116	16,030	17,285	18,295	398,186
Total Sector	209,092	261,225	374,646	449,316	518,267	396,321	455,221	628,767	683,130	718,924	14,639,074
Sub-sector needs as percentage of total											
Rural Water	43%	46%	38%	38%	35%	49%	49%	55%	56%	57%	53%
Sanitation	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	1%
Urban Water and Sewerage	40%	30%	32%	28%	37%	21%	27%	24%	23%	21%	24%
Water for Production	7%	11%	14%	16%	15%	20%	15%	13%	14%	15%	14%
Water Resources Management	5%	7%	11%	13%	9%	6%	6%	5%	5%	5%	5%
Sector Management	5%	4%	4%	4%	3%	3%	3%	3%	3%	3%	3%

Notes: Public financing refers to government, donor, and NGO funding, including NWSC off-budget funding as concessional loans and grants.
Source: MWE, 2009, Table 8-3, pg. 146.

Annex 16: MWE Approved Budgets, Released Funds, and Expenditures, 2008/09 – 2013/14

Prices in Ugandan Shillings billions. Figures include both government and donor funds.

MWE Allocations	Fiscal Year					
	2009	**2010**	**2011**	**2012**	**2013**	**2014**
Nominal Prices						
Approved Budget	98.1	172.2	250.3	282.7	345.1	317.2
Releases	94.4	116.9	173.8	190.2	428.5	257.8
Expenditures	94.1	116.8	172.0	194.5	256.8	209.8
Constant 2003 Prices						
Approved Budget	67.7	106.3	144.1	141.8	152.6	
Releases	65.2	72.1	100.1	95.4	114.0	
Expenditures	65.0	72.0	99.0	97.5	92.8	
Percentage of National Allocations						
Approved Budget	2.4%	2.6	3.6	3.0	3.5	2.7
Releases	2.2	2.4	2.2	2.3	4.8	2.7
Expenditures	2.2	2.3	2.2	2.4	3.0	2.3

Note: Fiscal Year 2009 corresponds to July 1, 2008 to June 30, 2009. FY2013 figures need clarification. A freeze on funding by Danida and KfW in this year, due to alleged misappropriations in the Office of the Prime Minister, seems to have introduced some errors.

Source: Mulders 2015.

Annex 17: Large and Small Town Tariffs

The following table shows NWSC tariffs as of July 1, 2014. NWSC applies the same tariffs across all large towns.

Table 48: NWSC Tariffs, July 1, 2014

Type of Connection	Tariff *per cubic meter*	
	Uganda Shillings	US Dollars
Public Water Points, including Kiosks	1,323	0.51
Domestic Connections	2,046	0.79
Institutional/Government	2,518	0.97
Industrial/Commercial	3,089	1.19

Notes: Dollar-shilling exchange rate as of end August 2013. USD1 = USh2,592
Source: NWSC. Dollar-shilling exchange rate from www.xe.com.

The MWE sets the tariff for each small town based on its operating and production costs. All connections in a given small town pay the same tariff. As of July 1, these tariffs varied from a low of USh.800 in Budadiri to a high of USh.4,500 in Sembabule.

Table 49: 2013/2014 Tariffs for Selected Small Towns

Small Town	Tariff *per cubic meter*	
	Uganda Shillings	US Dollars
Budadiri	800	0.31
Bunyaruguru	1,150	0.44
Sironko	1,250	0.48
Mpigi	2,000	0.77
Serere	2,500	0.96
Koboko	2,750	1.06
Kotido	3,500	1.35
Sembabule	4,500	1.74

Notes: Dollar-shilling exchange rate as of end August 2013. USD1 = USh2,592
Source: Compiled by Fredrick Tumusiine from MWE files. Dollar-shilling exchange rate from www.xe.com.

Annex 18: Types of Domestic Connections

All of the following connections are metered in principle.

House connection: The connection supplies water inside the house, usually through multiple taps, showers, and often water storage tanks. The household head is the connection holder.

Yard connection: The connection is a standpost in the yard of the house compound, and water is fetched from this single point. There is still a single connection holder responsible for paying the bill to the water utility. How the money to pay that bill is collected from the users is ultimately the responsibility of the connection holder and not the utility.

Two categories of yard connections exist, based on usage:

- ***Domestic yard connection:*** The connection is used by a single household, or shared among a few households. This represents a service level between household connections and PWPs.
- ***Shared yard connection:*** The connections could be shared among a large number of households, essentially turning it into a PWP. An example would be a building where numerous families have each rented a room and collect water from a tap in the compound. Another example would be a connection holder who operates the tap essentially as a kiosk, selling to anyone who comes to collect. The 2006 Pro-Poor Strategy calls for encouraging this type of connection by establishing authorized water vending. NWSC has developed a different approach. The utility identifies shared yard connections by monitoring water consumption levels, followed by on-site assessments by the Pro-Poor Unit. Shared yard connections are then given the PWP tariff, turning them into authorized water vendors after the fact.

Public water point (PWP): The connection is typically a concrete block that houses the plumbing, with two to four taps for water collection by bucket. The connection is located in a public place, although this may be adjoining or very near the house of the person responsible for the connection. The person or community group responsible for managing the PWP remits the water payments to the utility. NWSC has a lower tariff for PWPs.

For decades, PWPs have been used by African water utilities as the means to provide low-cost water – sometimes free – to users. The problems have been water wastage – taps left open or unrepaired, so water flows continuously – and the remittance of water payments to the utilities. Innovations to address these problems have included handing management to community-based organizations, and introducing kiosks.

Kiosk: A kiosk is a PWP operated on a commercial basis in the expectation that the profit will induce better management and bill collection. The connection is a small building, with 2 or more taps on the exterior. The valves controlling the taps are inside the building. The kiosk operator is the connection holder, and sells water at a markup. Kiosks were a highly regarded innovation in the 1990s, when the contribution of private sector participation by small entrepreneurs was gaining recognition.

Prepaid PWP: The user pays for water by having credit added to an electronic token, similar to the way a user adds minutes to a (prepaid) mobile phone. The token is then inserted in the prepayment meter, which dispenses water. The concept is to replace on-site PWP/kiosk management with this technology in order to increase revenue collection.

Source: WSP 2013, pgs. 14, 26-28.

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