

Sustainable Services Through Domestic Private Sector Participation

Private Sector Participation in the Ugandan Water Sector:

A Review of 10 Years of Private Management of Small Town Water Systems

Maximilian Hirn

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Executive Summary

This working paper reviews the first decade (2001-11) of Uganda's pioneering private sector participation (PSP) model for small town water supply. The number of towns under the PSP model has steadily risen from only 15 in 2001-02 to over 90 in 2010-11 with a combined population of over 1.5 million. In evaluating the impact of this development, this working paper aims to guide further reform within Uganda, and to inform other countries considering similar PSP approaches.

The core idea behind PSP centered reform in Uganda was to improve sustainability and efficiency of piped networks in small towns by hiring private operators (POs) for their commercial management. Driven by a profit motive, POs were expected to maximize revenue, minimize waste and maintain and expand networks in a sustainable manner. To guard social objectives, infrastructure remained under government ownership and the introduction of POs was accompanied by a complex regulation — as well as support — framework.

PSP in essential services such as water supply has been intensely debated over the past decade, and hopes such as those that motivated the Ugandan experiment have not always been borne out.¹ If regulation is weak, the quest for private profit can fuel corruption, monopolistic pricing and a decrease of investments through short-term profit taking; yet a well-designed framework can cause private actors to reduce waste and improve services. Private incentive does not per se lead to better public services, but it has potential to do so if channeled wisely.

To evaluate how well the Ugandan model has managed this balance between public and private interest in water service delivery, this paper starts with a concise description of its current performance and characteristics as well as its institutional and regulatory framework. This will allow a

thorough understanding of what has driven the successes achieved, and why challenges remain. Among the key achievements of the Ugandan small town PSP approach, the following deserve particular attention:

- **Connections expanded:** Connections in the 19 towns that were under private management since 2002 expanded much faster than population, rising from 4,883 to over 13,000 in 2010-11. This expansion of connections has been partially driven by the private sector, with a key role also played by public subsidies that are an essential part of the Ugandan PSP framework.
- **System sustainability improved:** Tariff collection rose from almost zero to approximately US\$2 million (UGX5 billion) in tariffs collected across the 88 towns reporting in 2010-11. The average PSP system now achieves a positive operational balance, that is, revenues from tariffs and fees cover running costs even without direct subsidies. In fiscal year 2010-11, average operating ratio (cost over revenues) was 95 percent. This is a key step to making water services in small towns more sustainable.
- **Collection efficiency rising:** Collection efficiency in the average town rose by more than 15 percent within three years of the introduction of private operators. In 2010-11, almost 90 percent of issued bills were successfully collected by POs. Unfortunately, comparisons with the period prior to the POs are not possible as the first year of PO management is generally also the first for which data is available.
- **Metering almost universal:** The metering ratio — the key element of a rational payment based system — has risen to over 90 percent in small towns under PO management.²
- **Water remains affordable:** Increases in tariffs have been limited. Water has remained affordable with the average price less than UGX2000 (US\$1) per cubic

¹ Marin, P. 2009. *Public-Private Partnerships for Urban Water Utilities – A Review of Experiences in Developing Countries*. Washington D.C.: The World Bank

² Based on FY2010-11 systems performance data from the Ministry of Water and Environment, using a sample of 85 private operators

meter. In fact, prices have risen by less than inflation, that is, real prices have tended to fall. This shows that PSP does not necessarily cause price rises as is often feared. Indeed, capped tariffs decreasing in real terms now constitute a problem for operation and maintenance (O&M) sustainability.

- **Better sector organization:** The transition to private management of small town schemes was accompanied by the introduction of better sector coordination and a number of (mostly public) support institutions for the fledgling POs. These institutions are a crucial part of the sector framework that explains PO performance. Operators have been mandated to submit performance data which are published in annual sector reports, and is also reviewed in biannual Joint Sector/Technical Reviews. The Water and Sanitation Development Facilities (WSDFs) have been created to implement publicly financed infrastructure interventions in small towns, Umbrella Organizations have assisted inexperienced local governments and POs with technical tasks, and POs have been organized into the interest group Association of Private Water Operators (APWO).

As the above points illustrate, over the past 10 years Uganda has arrived at a stable, and by many measures, successful model to use POs to manage piped water systems in small towns. However, even as some impressive results have been achieved, the system that has evolved in Uganda still faces serious challenges that require further reform:

- **Capital investments remain subsidy dependent and underfunded:** While the average PSP system in fiscal year 2010-11 could cover operating expenses, new capital investments and major rehabilitations remain subsidy dependent and underfunded. While continued public investment is important, the lack of significant private finance in the subsector constitutes a missed opportunity, especially in view of the constraints imposed by a low sector ceiling that limits public spending, to an underfunding of up to US\$18-33 million per year.

The core constraints on larger private investments are short-term contracts that create uncertainty about continuity even for good performers, lack of good

book-keeping and auditing that undermines lender confidence and the lack of assets of small operators to borrow against. Until reforms relieve these constraints in the medium term, special subsidized credit products for the water sector may help trigger a more significant role of private finance.

- **Regulatory gaps:** Regulatory control is still too weak, leaving room for underperformance to go without consequences. The central regulatory unit that administers tariff control, subsidy flows and supervises tenders is relatively small, overstretched and lacks independence. Current auditing arrangements are particularly weak, lacking regularity, quality and consequences. Audits by the Auditor General cover only national subsidies from the central government, but not the bulk of revenue generated and used. Some schemes carry out internal audits, but there are no recognized minimum standards or enforced penalties for transgressions. Regulation is only as good as its enforcement, and in the Ugandan PSP model, the latter falls short. Strengthening regulatory authorities at central and local levels, and establishing a system of financial audits by independent, qualified auditors, will be essential to ensure that private incentives remain aligned with public goals.
- **Capacity gaps:** Many local authorities who are elected and thus have considerable turnover lack the technical expertise to supervise operators effectively; even basic asset records are frequently missing. Organizations such as the Umbrellas and the private operator interest group, APWO, should receive further support to provide more technical assistance at local level. Ongoing efforts to build up asset registries should also receive strong support to complete them. Water quality issues should also receive greater recognition and financial resources.
- **Revenue erosion through inflation:** The government controlled tariff cap has worked well to contain water costs for consumers; however, combined with high inflation rates of over 10 percent in some years, the inflexible tariff cap has led to an uncontrolled erosion of real revenues of water systems. This undermines confidence in contracts, the ability to stick to agreed business plans and thus service quality and system

sustainability. Plans to institute inflation indexed business plans should be implemented, with an associated indexing of the current tariff cap of UGX2,500.

- **Contract length and fee structure:** The current model of simply paying POs a fixed percentage of revenues disincentivizes long-term system maintenance. Operators automatically retain all revenue of their fixed percentage that is not spent on operations and repairs; thus they have a direct incentive to minimize staff and maintenance expenditures as much as possible. Contract durations have also been too short, disincentivizing maintenance and investments that do not pay off within three years. The sector should work to develop contract models that at least cover asset depreciation, and move all systems to five year contract durations that have been piloted in some towns.
- **Inefficient single-scheme contracts:** The current model of contracting each scheme individually leads to inefficient overhead costs for operators who find themselves managing geographically dispersed schemes. It is also suboptimal from the government's perspective due to high supervision costs for almost 100 individual contracts tendered at local level, and because the opportunity of achieving cross-subsidization by bundling less profitable with more profitable schemes is forfeited. Though controversial with local authorities who fear a loss of influence, the potential for efficiency gains means that stakeholders should at least continue discussions with the aim of moving towards an exemplary pilot.

These challenges have imposed real costs, and show that channeling private profit incentives to achieve public

service goals is not an easy task. Even so, the pioneering Ugandan PSP model that replaced the underperforming, purely public approach, has evolved from an experiment into a stable system that can point to real successes. It has shown that though private expertise can greatly complement the public sector, it cannot, replace it. Indeed, to further improve outcomes, it will be crucial to strengthen and fine-tune the public institutions and regulatory framework that ensure that POs have the incentives to deliver clean water at a fair price. With its history of reforms and seasoned sector practitioners, Uganda is well placed to tackle these remaining challenges.

In doing so, it is encouraging to recognize that progress in any of the areas outlined above will have broad beneficial effects on the PSP model as a whole, because the remaining challenges are all interlinked. For instance, improving auditing, preventing inflation driven tariff erosion or extending contract lengths are all crucial to making it easier for POs to raise private finance. Likewise, asset registries will make it easier to develop contracts that better account for hardware depreciation and improving capacity locally will relieve pressure for auditing from the center.

In an interlinked PSP framework in which behavior is shaped by legal and regulatory rules and public and private agents are always interacting, each reform step will impact and can contribute to improving, the overall system. The sector in Uganda has demonstrated its ability to successfully introduce an entirely new approach to small town water supply over the past 10 years and now has an opportunity for further dynamic improvements to increase affordable access to safe water for Ugandans living in small towns.

Abbreviations

ADC	Austrian Development Cooperation
APWO	Association of Private Water Operators
DWD	Directorate of Water Development
DWO	District Water Offices
DWSDCG	District Water and Sanitation Development Conditional Grants
GIZ (GTZ)	Gesellschaft fuer Internationale Zusammenarbeit (German Development Corporation)
GoU	Government of Uganda
GPOBA	Global Partnership on Output-Based Aid
IFC	International Finance Corporation
JMP	Joint Monitoring Programme (WHO/UNICEF)
JPF	Joint Partnership Fund
JSR	Joint Sector Review
LG	Local government
MDG	Millennium Development Goal
MoWE	Ministry of Water and Environment
MTEF	Medium Term Expenditure Framework
NDP	National Development Plan
NGO	Non-governmental organization
NRM	National Resistance Movement
NWSC	National Water and Sewerage Corporation
O&M	Operation and maintenance
PO	Private operator
PSP	Private sector participation
RGC	Rural Growth Centers
SME	Small and Medium Enterprises
SPR	Sector Performance Report
SSIP	Sector Strategic Investment Plan
WA	Water Authority
WATSUP	Ugandan Water Supply Atlas
WSC	Water and Sanitation Committee
WSDF	Water and Sanitation Development Facilities
WSS	Water supply and sanitation
WSSB	Water Supply and Sewerage Board

I. The Context: PSP in Small Town Water Supply in Uganda

Prior to the current private sector participation (PSP) framework of small town water supply, the Ugandan national government administered all water supply networks through a highly centralized system. Decisions were made far from local users, funding flows through the center and back were habitually delaying operations and maintenance, record keeping was poor, and there were few direct financial incentives for systems to perform well.

Major reform efforts in the 1990s put the current PSP model for small town water supply in place. The first step was the 1995 Constitution of Uganda which defined access to clean and safe water as a fundamental national objective, and formally called for greater use of private initiative. The Water Statute (1995), Water Act (1997) and Local Government Act (1997) then legally codified, and the National Water Policy (1999) operationalized, the PSP framework still in place today. Over the last decade, Uganda thus pioneered a new approach to small town water management that recognized the economic value of water, involved private operators (POs), yet upheld the social principle of “some for all rather than all for some.”³

Today, “private sector participation” in Uganda’s small town water supply means that POs manage piped water systems in contracts with local government. All assets (pipes, pumps, land and so on) remain under the ownership of the government. Customers pay for water in order to finance operation and maintenance (O&M) work, though O&M remains partly subsidized, and system construction and extensions are generally financed publicly. The private sector also plays a role in the design and construction of facilities under contract by local and central government. Point sources of water (for example, handpumps) are usually communally managed and thus not an object of this report. Private credit to finance piped water supply schemes is still rare in Uganda, and has been limited to pilot projects led by the World Bank Global Partnership on Output-Based

Aid (GPOBA) and the International Finance Corporation (IFC).

The private sector is barely involved in small town sanitation at present. Even though the mandate of POs was expanded in 2011 to include the management of sanitation services, POs have not become involved in sludge management yet. PO involvement is limited to the administration of public toilets in some towns. The PO interest group APWO (Association of Private Water Operators) has noted that this is often not profitable and lacks a clear business case.

Defining “Small Towns”

As of 2010-11, there were 186 urban areas in Uganda: Kampala city, 22 municipalities and 163 town councils, home to over five million Ugandans.⁴ A small town is then defined in the specific context of the water sector: A town is “large” if the water supply in the urban area is managed by the national utility, the National Water and Sewerage Corporation (NWSC). If it is not, then the urban area is a “small town.” Thus, in 2010-11 there were 156 urban areas classified as “small towns,” that is, outside NWSC jurisdiction, with approximately 2.4 million inhabitants or 7 percent of Uganda’s population. The population of small towns is generally between 5,000-15,000 inhabitants. As far as large towns are concerned, the Ministry’s Sector Performance Report outlined:

Large Towns are classified as those gazetted for operation by [the utility] National Water and Sewerage Corporation (NWSC), which provides water and sewerage services. NWSC currently operates in 23 “Areas” covering [30 large towns, including] Kampala City Council, the municipalities of Jinja, Entebbe, Tororo, Mbale, Masaka, Mbarara, Gulu, Lira, Fort Portal, Soroti, Kabale, Arua; and the Town Councils

³ Ministry of Water and Environment. 1999. *National Water Policy*. Kampala: Republic of Uganda

⁴ Almost fifty of these were only formally designated as urban in the last two years. The rural government unit hierarchically equivalent to municipalities and towns is the “sub-county”

including Nansana, Kira, Njeru, Bugembe, Lugazi, Bushenyi/Ishaka, Kasese Mukono, Malaba, Iganga, Mubende, Hoima, Masindi and Kaberamaido.⁵ The NWSC coverage area extends beyond the above urban boundaries.

In addition to large and small towns, there is a further common agglomeration type, Rural Growth Centers, with populations between 2,000-5,000 inhabitants, but these are formally classified as rural.

Piped Systems in Small Towns

Of 156 small towns, 105 had operational piped water systems in 2010-11.⁶ Of these 105 operational systems, 95 had a gazetted Water Authority, the key administrative building block of the Ugandan PSP model. It is the Water Authority that can contract a PO on the one hand, and enter into performance agreements with the national authorities on the other. Of the 95 Water Authorities, 83 were in fact employing a PO. Most of the 12 towns without a PO at the end of the reporting period 2010-11 were in the midst of tenders after the end of a prior PO contract. Delays in tendering mean there is often a gap between the transition of one PO contract to the next, resulting in town authorities temporarily taking over the management of systems. The remaining 10 small towns had not been formally integrated into the new model yet, that is, still lacked gazetted Water Authorities and were either running the system directly or hiring individual operators.⁷

In 2010-11, almost 90 gazetted systems submitted performance data regularly, from which a basic overview of their system characteristics can be given (see Table 1).

The operational balance (revenues without subsidy grants minus operational costs, but excluding capital investments)

TABLE 1: CHARACTERISTICS OF GAZETTED SYSTEMS IN 2010-11

Variable (Number of Towns Reporting)	Mean (Median)
Population (81)	20,160 (15,000)
Active connections (88)	392 (267)
Date of commissioning (Data for only 49; range of 1958-2010)	2002 (2004)
Metering ratio (85)	93% (100%)
System capacity utilization (83)	48% (37%)
Continuity of supply (88)	87% (94%)
Staff (86)	5 (5)
Water supplied per month, m ³ (88)	4,013 (2,022)
Non-revenue water, % (87)	19.3% (17.5%)
Rate charged per m ³ , UGX (86)	UGX1978 (1889)
Difference between rate and production cost (86)	UGX179 (573)
Collection efficiency (Value of bills / bill collection)	87% (89%)
Operational balance (Revenues minus operational costs), monthly (88)	UGX 245,378 (-79,655)
Operating ratio (Cost/Revenue), % (88)	95% (103%)
Overall surplus/deficit incl. capital investments, monthly (88)	UGX -174,000 (-)
Overall surplus/deficit w/o conditional grants income, monthly (88)	UGX -1,248,000 (-778,400)

Note: See Tables 9-14 for historic figures.

is positive for the mean system. However, this turns very strongly into the negative once capital investments (extensions, major upgrades, and so on) are factored in. Collection efficiency was also close to 90 percent and non-revenue water around 20 percent of production. The average number of active connections per system is just

⁵ Nansana, Kira and Mukono water services are managed by Kampala Area; Malaba town water supply is managed under Tororo Area while Lugazi, Njeru, Bugembe and Iganga town water supplies are managed under Jinja Area. Kaberamaido town water supply is managed under Soroti. Amuria water supply was gazetted as a new town under NWSC management in June 2010. See: Ministry of Water and Environment, 2010. *Sector Performance Report 2010*. Kampala: Republic of Uganda. p.121

⁶ Ministry of Water and Environment, 2010. *Sector Performance Report 2010*. Kampala: Republic of Uganda. p 118

⁷ *Ibid.*, p.121; It should be noted at this point that piped schemes are not limited to ("large" and "small") urban areas, but can also be found in rural areas. The Ugandan Water Supply Atlas (WATSUP, 2011) listed a total of approximately 700 piped schemes not managed by the NWSC (functional and non-functional, and including the above), of which 368 were gravity flow schemes, 296 are groundwater based, and 37 distributing surface water. The 105 small-town piped systems are thus only a sub-set of all piped-schemes outside the NWSC.

below 400, though this arithmetic average seems driven by a few large systems as the median is only 267. This is also reflected in the volume supplied, which averages 4,000 cubic meters but has a median of just over 2,000 cubic meters

According to the new Ugandan Water Supply Atlas (WATSUP 2011), and including the above 105 small town piped systems, Uganda boasts a total of over 700 piped schemes not managed by the NWSC. Most of these are small and situated in rural growth centers without gazetted Water Authorities. This number comprises 368 gravity flow schemes, 296 ground water-based systems, and 37 distributing surface water.

Private Operators

In fiscal year 2010-11, Uganda had 18 different private water operators (that is, private companies) operating small town piped systems under active contract with local Water Supply and Sewerage Boards.⁸ Of these, 10 POs managed at least two or more systems. All but four have head offices in Kampala, and usually offer broader consultancy, engineering and contracting services.⁹ In other words, the operators are typically not pure, specialized water system management firms. Note that some town councils, especially those with small systems, hire private individuals rather than firms to oversee their networks. This is also common practice for piped systems in rural growth centers (that is, non-gazetted).

As can be seen in Table 2, operators choose different approaches — Bright TS runs five systems with a total of 2,410 connections (482 on average per town), while Kagula MS has 2,343 connections but spread over no less than 11 towns (213 on average per town).

TABLE 2: PRIVATE OPERATORS OF SMALL-TOWN PIPED SYSTEMS IN UGANDA (FY10-11)

Operator	No. of Systems	Staff		Connections		NRW %
		Total	Average	Total	Average	
Jowa Ltd	16	103	6	6,447	403	23%
Trandint Ltd	14	61	4	7,966	569	20%
Kagula MS	11	40	4	2,343	213	21%
Kol-Kagula	3	11	4	588	196	18%
Power TS	5	25	5	1,871	374	23%
Bright TS	5	33	7	2,410	482	24%
WSS Ltd	4	24	6	2,013	503	17%
Able Holding	3	16	5	823	274	18%
George & Co	2	29	15	1,747	874	33%
Irumu & Associates	2	16	8	1,265	633	23%
T/C or Single POs	23	111	5	7,010	305	31%
Total	88	469	5	34,483	392	24%

Source: DWD Performance Report Tables, FY10-11

In total, the 88 systems for which the self-reported performance data is available employ a little above 450 staff, including technicians, accountants, cashiers, guards and so on. The average system is staffed with approximately five employees. However, this data is self-reported by POs, and the reported number of staff may not attend to a system full-time in all cases.

As Table 3 illustrates, running small systems in Uganda is not big business. Even the largest operator is paid just above US\$25,000 per month for running 16 systems, and after adjusting for costs related to staff, power and water treatment, as well as minor repairs and taxes, makes an estimated monthly profit of around US\$5,000. Other

⁸ Since then, the number has slightly increased to 21 by February 2012.

⁹ <http://www.apwouganda.org/members> [4.9.2012]

POs even reported losses in FY10-11. These limited profit margins also help to explain why water operators tend not to be solely specialized on running small towns schemes, but typically do so only as one out of many contracting and engineering services.

The figures in Tables 2 and 3 offer guidance, but should be treated as approximations pending more detailed auditing. Data is self-reported and insufficient supervision leaves room for extra profits if POs were unscrupulous. For instance, given that power costs are to be paid directly out of the operators' share of the revenue, over-declaring electricity costs would justify excessively high operator fees and thus increase actual over reported profits. The variations in self-reported costs (for example, electricity cost per connection) call for a more regular, detailed auditing to ensure compliance and accurate reporting.

Likewise, the cause of nonrevenue water should be investigated as the lost (or hidden) revenues are quite substantial. For instance, the 33 percent nonrevenue water reported by George & Co in fiscal year 2010-11 has a value of over US\$7,000 per month at current water tariffs. Note that the estimation of profits in Table 3 assumes that all power costs and reported repairs were borne by the operators out of their management fees. However, in practice conditional grant subsidies sometimes subsidize power costs and repairs and thereby free up profits. For instance, George & Co received over US\$300 per month in power subsidies in the fiscal year 2010-11.

As can be seen on Map 1, some operators have managed to cluster their systems in certain regions by winning individual contracts for a number of neighboring systems. For instance, Kagulu MS (in light red) is running a de-facto cluster in the north-west of Uganda, and another in the central-east,

Jowa Ltd (blue) is concentrated in central and central-eastern Uganda. However, these patterns are neither universal, nor are the schemes clustered in a rational pre-planned way. Moreover, piped systems run by town councils, subcontracted individuals or by firms managing only one network are scattered throughout. Rational clustering could improve efficiency by reducing overheads created by geographic dispersion of schemes. The self-selection of operators into clusters suggests that considerable efficiency gains could be realized in this manner.

Examining staff costs reveals average expenditures of around US\$60-100 per staff month. While most companies pay around US\$1 in staff costs per connection, POs seem to take different approaches to the trade-off between staff quality and quantity. Some POs such as Trandint pay relatively high wages but each staff has to

TABLE 3: PRIVATE OPERATORS OF SMALL-TOWN PIPED SYSTEMS IN UGANDA

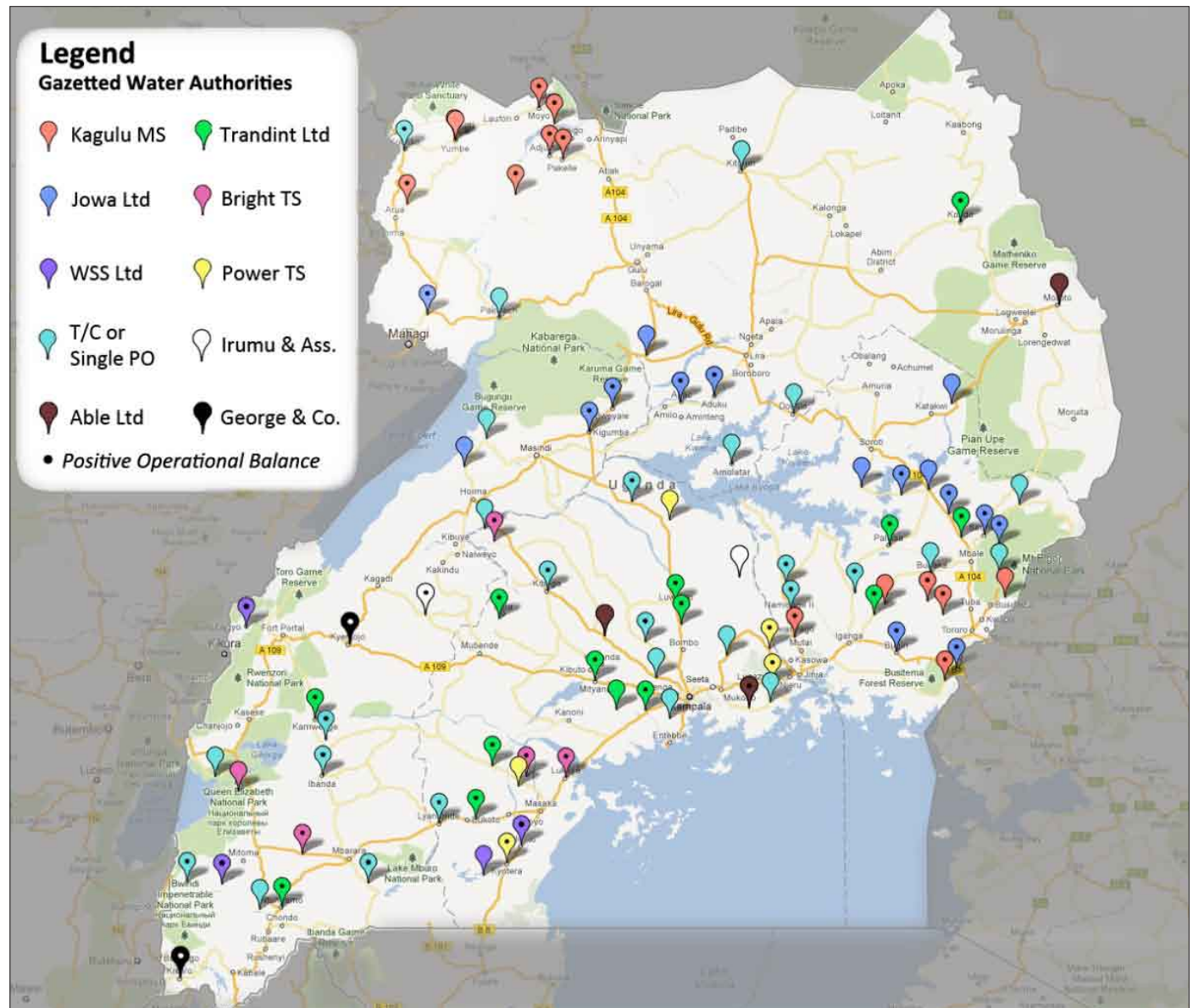
Operator	Management Fee (monthly)	Cost of Power	Operator Profit (est., monthly)	Operational Surplus*
	US\$	US\$	US\$	US\$
Jowa Ltd	25,219	11,686	5,337	1,156
Trandint Ltd	32,815	11,492	6,823	2,850
Kagula MS	9,513	2,719	3,558	756
Kol-Kagula	581	75	259	-192
Power TS	5,454	2,749	-51	-461
Bright TS	6,916	1,612	2,029	1,424
WSS Ltd	5,892	1,809	1,692	480
Able Holding	2,568	2,997	-2,550**	-10
George & Co	11,511	6,931	685	2,007
Irumu & Associates	5,489	1,149	1,865	54
T/C or Single POs	N/A	N/A	N/A	N/A

* After PO & WSSB Fees

** Reported loss almost entirely from one system; partially reduced by subsidies not taken into account here

Source: DWD Performance Report Tables, FY10/11.

MAP 1: DISTRIBUTION OF WATER AUTHORITIES AND POS IN UGANDA (FY10-11)



deal with a lot of connections, whereas others have a better staff to connection ratio, but pay each staff less.

Institutional Framework

The current institutional framework of small town water supply in Uganda is set within a decentralized political structure outlined in greater detail in the Appendix A. The regulatory and executive authority rests with the Ministry of Water and Environment, represented by the Directorate

of Water Development (DWD). The Water Act (1997) empowers the Minister to “gazette” a Water Supply Area and appoint a Water Authority for it. The basic function of the Water Authority as specified in the law is:

- a) to provide water supply services for domestic, stock, horticultural, industrial, commercial, recreational, environmental and other beneficial uses as is required by the declaration establishing the authority or the performance contract;

TABLE 4: STAFF COSTS OF PRIVATE OPERATORS IN UGANDA

Operator	Staff Cost (Per Staff Monthly)	Connections Per Staff	Connections Per Staff Dollar
	US\$	Number	Number
Jowa Ltd	56	63	1.1
Trandint Ltd	127	131	1.0
Kagula MS	67	59	0.9
Kol-Kagula	22	53	2.5
Power TS	65	75	1.1
Bright TS	76	73	1.0
WSS Ltd	66	84	1.3
Able Holding	102	51	0.5
George & Co	65	60	0.9
Irumu & Associates	79	79	1.0
T/C or Single POs	N/A	63	0.9

Source: DWD Performance Report Tables, FY10-11.

- b) to manage the water resources entrusted to it;
- c) to provide and manage sewerage services as may be required by the declaration or performance contract;
- d) to give effect to any direction by the Minister relating to water or sewerage; and,
- e) to do anything connected or incidental to the above.¹⁰

Usually the Town Council is appointed as the Water Authority.¹¹ The relationship between the Water Authority/ Town Council and the Ministry is governed by a performance contract, which specifies the detailed terms of reference and service targets of the Water Authority.

Once in place, the Water Authority proceeds to set up an executive Water Supply and Sewerage Board (WSSB), which is entrusted with the infrastructure, negotiates a tariff with the operator (which then has to be cleared by the central MoWE and oversees the operation of water services. The WSSBs' activities are financed through a fee of 5 percent of user water payments. While some WSSB choose to run their town water supply directly, typically a PO is hired.

As outlined in the previous section, of the total 95 Water Authorities in existence in 2010-11, 83 had hired a PO, while 11 temporarily ran the systems directly and one system had a special private-public arrangement. Ten of the 105 small towns with piped system have yet to form their own Water Authority.

In practice, the District Water Offices (DWO) — and the District Water and Sanitation Development Conditional Grants (DWSDCG) they control — are focused on rural areas and do not play a significant role in the institutional and contractual relationship chain that governs small town water supply, and that is illustrated in Figure 1.

The described small town system is not in place in Kampala and other large towns, which are supplied by the national utility NWSC. In rural sub-counties,

“the situation is less formalized; typically a user elected Water and Sanitation Committee (WSC) is responsible for the management of the water supply system and a local individual is hired for the operation of the scheme.”¹²

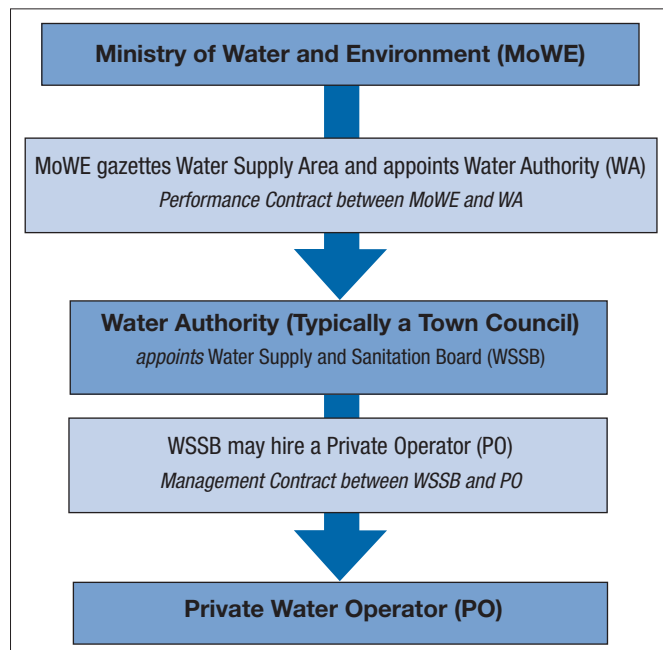
Tenders and Tariff setting

POs are chosen in a competitive tendering process administered by the local WSSB and then sign a renewable management contract. The contract duration has

¹⁰ Republic of Uganda. 1997. *Water Act (Cap 152)*. Kampala: Republic of Uganda.

¹¹ Recall that Kampala and all but one municipality are supplied by the national utility the NWSC, that is, not supplied through the Water Authority system like the town councils. In areas that are neither supplied by the NWSC, nor integrated into the Water Authority system, responsibility for water supply typically lies with more informal Water User Associations / Water and Sanitation Committees

¹² Ministry of Water and Environment. 2008. *Feasibility Review of the Umbrella Organisations Model*. Directorate of Water Development (DWD). p.1

FIGURE 1: KEY INSTITUTIONAL RELATIONSHIPS IN SMALL TOWN WATER SUPPLY IN UGANDA

traditionally been three years, though after successful pilots it is now slowly being shifted to five-year contracts. The management contracts between the local WSSB and PO must be in line with the service obligations specified in the performance contract between the Water Authority and the Ministry.

The management fee of the PO is set as a percentage of revenue and arrived at through the tendering process administered at a local level. The fee is typically between 65-90 percent of revenue. This management fee includes the agreed expenses necessary for running the scheme such as staff salaries, (minor) repairs and energy costs.

Operators bidding for a system must also submit business plans including planned investments (primarily new customer connections), though in practice these have proven hard to enforce. On average, the time that passes between the publication requests for the expression of interest and the actual signature of a PO contract has been more than nine months.

The tariff is set ahead of bidding, so that bids by potential operators can be evaluated based on the percentage of revenue demanded and the business plan. The MoWE has developed a simple spreadsheet to assist the calculation of an appropriate tariff. These are based on historical production and operation costs along with allowances for possible planned measures for improving efficiency and cost levels, and subject to a cap of UGX2,500 to which exceptions are rarely granted. Proposed tariffs are forwarded to the Ministry for clearance. Crucially, at present tariffs are not supposed to reflect capital investments, only O&M costs.

Management contracts contain provisions that allow withholding of funds and termination of contracts in case of nonperformance. However, these are rarely applied due to capacity constraints on the side of the WSSBs, which are often struggling to effectively supervise POs, much less challenge performance quality and see through contractual conflicts resulting in termination of a contract.

Regulatory role of the Ministry of Water and Environment

To complement the executive and regulatory authority of the MoWE as described above, a Regulation Unit has been established, provisionally within the Directorate of Water Development (DWD), but with the aim of creating an independent regulatory authority in the near future (however, the interim status has persisted for years now). Its purpose is to oversee the urban water and sanitation subsector, and with respect to small towns in particular to supervise the performance contracts with WSSBs, to review and approve tariffs in small towns, impose penalties and suggest solutions to substandard performance, review business plans and promote pro-poor service delivery. On request, the unit also provides support to tendering processes in small towns. However, with only five technical staff and limited transport facilities, the unit is too small relative to the scope of its tasks and has accumulated a backlog of unresolved cases and complaints.¹³

The Ministry provides further direct support to the day-to-day management of small town schemes by regularly training members of the WSSBs (the executive organs

¹³ Ministry of Water and Environment, 2010. *Sector Performance Report 2012*. Kampala: Republic of Uganda. pp.87-88

of the Water Authorities) and town engineers, to allow them to better carry out their supervisory duties. Due to the relatively high turnover of WSSB members, and the considerable skill gap between these and the operators, this remains an area of concern.

Support Institutions

The POs thus manage systems in a well-defined contractual framework. The institutional relationships and central role of the MoWE outlined above, however, do not fully describe the Ugandan PSP model, which is further complemented by a number of private, state- and donor-funded support institutions. These have emerged to provide additional capacity and assistance to local governments and private operators. In addition to support provided directly from MoWE units, the four most important support institutions are the Water and Sanitation Development Facilities (WSDF), the Umbrella Organizations and the APWO.

The Water and Sanitation Development Facilities

The WSDFs are the primary funding and implementation mechanism of the MoWE for major rehabilitations and new system constructions. The WSDFs are regionally organized, employing trained engineers and managers. Their key purpose is to compensate for the inadequate capacity of local governments to plan and implement major investments. Overall accounting responsibilities for the WSDF lies with the Ministry, but WSDF branches operate with a considerable degree of independence.

The WSDF concept was piloted in the south-west of Uganda with major support from the Austrian Development Cooperation (ADC), and has now been expanded to three additional regions of the country (North, East and Central). The original south-western WSDF is currently implementing a budget of over US\$25 million¹⁴ for a targeted 75 rural towns in the period 2009-13. Table 5 summarizes achievements so far and current activities.

The WSDF network developments involve the private sector in contractor roles during construction. Funding,

TABLE 5: OVERVIEW OF WSDF ACTIVITIES

	WSDF-SW	WSDF-North	WSDF-East	WSDF-Central
Commencement Year	2006	2008	2009	2010
Districts covered ¹⁵	24	23	39	25
Towns identified	75	46	60	50
Designs completed	43	12	3	6 (feasibility)
Designs ongoing	32	6	6	3
Systems constructed	32	3	2	0
Systems under construction	7	2	2	1
Ecosan toilets construction	275	6	15	4
Boreholes drilled	43	35	8	0

Source: A presentation by the MoWE Urban Water and Sewerage Services Department at the World Bank in Kampala, April 2011.

however, is entirely through the Government of Uganda (GoU) and the Joint Partnership Fund (JPF) with small, often in-kind (for example, land, labor) contributions by the communities. The WSDF trains the Water Supply and Sanitation Boards (WSSBs) of newly constructed systems, which in turn contract POs to manage them, or may decide to run the smaller, less profitable systems under a community operations and maintenance model.

The WSDF model has been reviewed in a 2008 study which did raise some issues regarding the current model's lack of clearly defined legal status, but highlighted the overall success of the WSDFs:

¹⁴ EUR17.5 million at an exchange rate of 1.45

¹⁵ Number of districts covered updated with SPR 2011, p.120.

“The existing WSDF-SW model constitutes essentially a well-established implementation approach... The approach combines strong involvement of LGs [local governments] — in line with their mandate — with technical support that ensures project quality and sustainability. Fiduciary risks are kept low by the presence of qualified staff and by the joint handling of procurement, contract management and supervision issues by WSDF and LGs.”¹⁶

The Umbrella Organizations

The Umbrella Organizations are regional membership associations of the local WSSBs and small community managed systems. Though the members pay fees, the umbrellas are heavily subsidized, with up to 95 percent of their budget financed by government and donor partners.

Umbrella membership is voluntary, and many schemes have not joined up. The principal objective of the Umbrella Organizations is to provide O&M back-up support, training, and other services such as the supervision of minor rehabilitation and extension works and water quality monitoring.

Whereas WSDFs are primarily aimed at compensating for local governments’ weakness in planning and implementing major engineering and construction tasks such as greenfield investments and rehabilitations, Umbrellas support local WSSBs and their private operators with maintenance and operation tasks. The Umbrella Organizations have been the subject of a study by the MoWE’s Directorate of Water Development. The study found that “O&M of water schemes has improved tremendously” through the umbrellas, and that the “benefits of operating an umbrella organizations model are far greater than the costs.”¹⁷ Though defending the Umbrella model, the report nevertheless points to the “bitter reality that there are not many options for long-term financing of Umbrella operations apart from government.”¹⁸

Association of Private Water Operators

The APWO is a lobby and support organization for Uganda’s POs, advocating on the PO’s behalf relative to the government and also supporting them with training. They play a critical role in voicing concerns of POs. Over the last few years, the organization has been heavily subsidized through the European Water Facility and GIZ, with only about US\$4,000 of its estimated annual costs of around US\$ 100,000 raised from member fees.

The three support institutions play a critical role by providing planning advice, construction finance, training and subsidized maintenance services without which the commercial viability of POs would likely be much reduced. These support institutions underline the fact that the Ugandan model is really one of private sector *participation*, that is, one in which private companies play a key role, but are both supported and circumscribed in their actions by a host of regulations and institutions.

The Planning and Budgeting Process in Uganda

The national planning and budgeting process remains of major importance to small town water supply even as POs are managing an increasing number of small-town

TABLE 6: OVERVIEW OF UMBRELLA ORGANIZATIONS (AS OF 2011-2012)

Umbrella Organization	Member number
South-western Umbrella	78
Eastern Umbrella	81
Mid-western Umbrella	56
Northern Umbrella	30
Central Umbrella	2
Total	247

Source: Updated version of table in Sector Performance Report 2011, p.122.

¹⁶ Hydrophil. 2008. *Identification Study and Feasibility Assessment of Options to Establish a Water and Sanitation Development Facility (WSDF)*. p.37

¹⁷ Ministry of Water and Environment. 2008. *Feasibility Review of the Umbrella Organisations Model of Operation and Maintenance of Small Towns and Rural Growth Centres’ Water and Sanitation Systems*. Kampala: Directorate of Water Development. p.28.

¹⁸ Ibid., p.17.

schemes. Public funds, channeled through vehicles such as the WSDFs and Umbrellas, constitute the major source of finance for capital investments and provide considerable O&M support, so the national budgeting process is a central piece of the small town PSP framework.

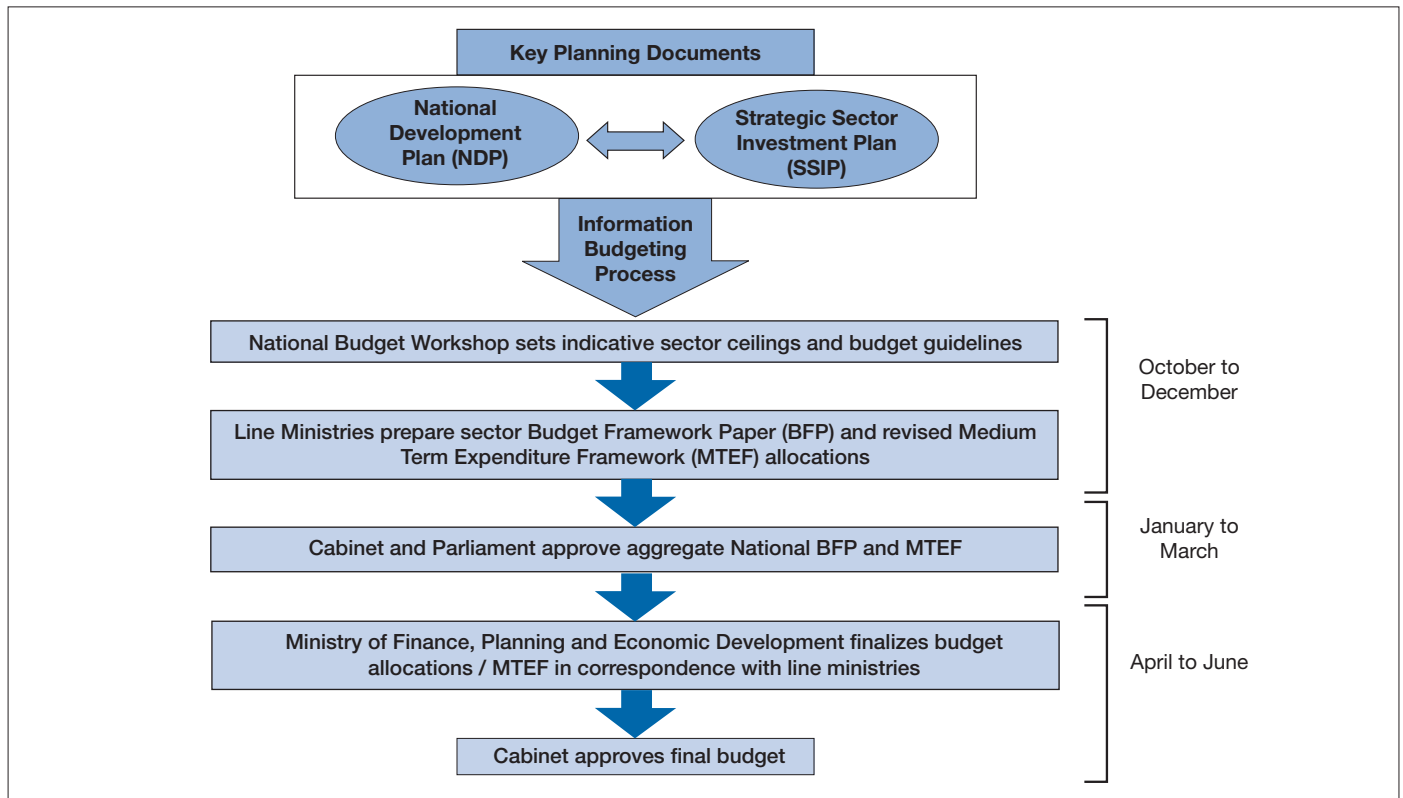
Allocations are informed by the basic principles of the 1999 National Water Policy, and in particular its guiding statement of providing “some for all — rather than more for some.” Sector planning and estimates of required investments are given in the Strategic Sector Investment Plan (SSIP), which was comprehensively updated in 2009, providing investment estimates with target setting for the years 2015, 2020, and 2035. These detailed sector requirement estimates are framed by the National Development Plan (NDP) which formulates Uganda’s medium-term (2010-15) development strategy, prioritizing between water and other sectors.¹⁹

Actual budget allocations are guided by these policies and planning documents, but operationalized through the Medium Term Expenditure Framework (MTEF) and the national budget. The annual budgeting process is structured as outlined in Figure 2.

The key bodies handling the allocation process at sector level are the Water Policy Committee (WPC) and the Water and Environment Sector Working Group (WESWG). At the district level, the District Water and Sanitation Coordination Committees (DWSCC) coordinate activities, though their practical role with respect to the small town PSP system is limited as responsibility rests mostly with town-based Water Authorities and WSDFs.

The Water Policy Committee (WPC) was established by the 1997 Water Act and consists primarily of high-level government and utility staff in the water sector, as well as

FIGURE 2: OUTLINE OF ANNUAL UGANDAN PLANNING AND BUDGETING PROCESS



¹⁹ The NDP has replaced the Poverty Eradication Action Plan (PEAP) as the main planning document of the Government of Uganda.

²⁰ In large towns, most funds are disbursed through the NWSC, whereas in rural water supply the main spending agencies are the districts via the Ministry of LG.

representatives from district level and the nongovernmental organization (NGO)/private sector. Their key function is to advise the sector minister on water and sanitation policy, legislation, and regulation.

The Water and Environment Sector Working Group (WESWG) provides overall coordination of the sector. It is chaired by the Permanent Secretary of the MoWE and meets at least once per quarter to provide policy and

technical guidance for the sector. It also organizes the annual GoU and Donor Joint Sector Reviews (JSRs) during which stakeholders meet to assess sector progress and discuss key strategic policy issues.

Once allocated, government and donor funds are channeled to small towns primarily through the MoWE's Directorate of Water Development, with the WSDFs emerging as key vehicles to disburse investment funds in particular.²⁰

²⁰ In large towns, most funds are disbursed through the NWSC, whereas in rural water supply the main spending agencies are the districts via the Ministry of LG.

II. Status Quo: Current Access, Finance, and System Performance

Current Access to Safe Water: Small towns Lag Behind

The rapid population growth combined with a relative shift towards secondary urban areas has created considerable pressure on basic services in small towns. Uganda has long remained a relatively rural society, with only 14 percent of Uganda's population living in urban areas even today. This is now changing rapidly. Uganda's current annual urban growth rate of 5.9 percent is decidedly higher than that of the Sub-Saharan region as a whole (3.67 percent).²¹ Secondary urban areas are gaining in importance at Kampala's expense. In 1960, more than 50 percent of Uganda's urban population lived in Kampala, today only approximately 35 percent do.

Recent statistics by the MoWE show that small towns have a significantly lower access to improved water than large towns.²² Thus in 2011, average safe-water coverage stood at

75 percent in large towns supplied by the national utility, but was only 54 percent in small towns.²³ For urban areas as a whole, safe water access was 66 percent.²⁴

The higher urban coverage figures computed by the international Joint Monitoring Programme or JMP (WHO/ UNICEF) are due to differences in methodology and definition. The JMP figures rely exclusively on household surveys and the JMP definition of coverage does not include a minimum distance between household and source. The government figures, on the other hand, are computed by extrapolating from known sources (for example, household connections, public pumps) based on assumptions about the number of users, and only count a person as having access if s/he is within 1km (rural) or 0.2km (urban) from the source.

Water quality samples from small towns have revealed a declining compliance with standards, with only 63 percent of the sample meeting bacteriological water quality standards in 2012 (down from 97 percent in 2008).²⁶ This illustrates that definitions that define "safe water" simply as access to piped water may fall short if the quality of the piped water supply is not in fact maintained at a high level. Ensuring compliance with water quality standards should thus be given more priority in Uganda.

Targets for Small Town Safe Water Access

Uganda's national targets for access to safe water are spelled out in the National Development Plan (NDP) and Sector Performance Report and amount to a coverage rate of 100%

TABLE 7: SAFE WATER COVERAGE IN UGANDA

	JMP (2010)	MoWE SPR 2011
National	72%	65% ²⁵
Piped access	4%	N/A
Rural	68%	65%
Piped access	1%	N/A
Urban	95%	66%
Piped access	20%	N/A
Small-towns	N/A	54%

²¹ Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2010 Revision and World Urbanization Prospects: The 2011 Revision Sunday, May 19, 2013; 1:54:59 PM; Average for 2005-10; Note that the annual rate of change of percentage urban (another measure of urbanization) is 2.69% annually for 2005-10 in Uganda, and 1.19% for Sub-Saharan Africa.

²² See below for precise definitions of "large" and "small" towns.

²³ Note that the Strategic Investment Plan (SIP) cites a current coverage rate of 42 percent. However, preference has been given to the figures from the more recent Sector Performance Report 2011, p.136

²⁴ Access in rural areas is given as 65 percent in the Ministry of Water and Environment, Sector Performance Report 2011, p.21

²⁵ Implied by urban/rural population distribution and urban/rural access figures, value not actually given in SPR 2010.

²⁶ Ministry of Water and Environment, 2010. *Sector Performance Report 2012*. Kampala, Republic of Uganda. p.112

in urban areas by 2014-15, including small towns.²⁷ The 2009 Strategic Sector Investment Plan (SSIP) recognized this official target as “Scenario A,” but to be realistic in face of “the present low level of funding” has also developed a less ambitious “Scenario B.” Under Scenario B, the coverage target for urban areas is to achieve 100 percent coverage by 2035, but only 80 percent for large urban areas and 65 percent for small towns by 2015.²⁸

These national sector targets diverge from the international Millennium Development Goals (MDGs), which are defined as halving the percentage of the population without access to safe water in 1990 by 2015. Based on the household survey statistics compiled by the JMP, this would imply an overall water sector target of 72 percent by 2015.²⁹ The MDGs do not officially set separate rural and urban targets, but the implied values of these would be 70 percent access in rural areas and 89 percent in urban areas. Due to a lack of baseline statistics for access in small towns in 1990, it is not possible to apply the MDG target methodology to small towns in Uganda.

Estimated Investment Requirements

The NDP which set the basic national targets provides some investment guidance, but these estimates are limited and now outdated, and do not specify financial requirements for small towns.³⁰ The key source for a comprehensive estimate of investment requirements to reach national targets is the SSIP (2009).

As Table 8 highlights, the public funding shortfall relative to SIP targets, even under the more realistic Scenario B, is at least US\$54 million (UGX135 billion) for the water sector as a whole, of which US\$37 million is in the urban sector, and US\$18 million in small towns. These figures mean that the water and sanitation subsector is clearly underfunded relative to the targets specified under both Scenario A and B in the NDP and SSIP.

TABLE 8: ESTIMATED FUNDING NEEDS, EXPENDITURE AND FUNDING GAP (FY10-11)

US\$ Millions, FY10-11	Estimated Needs (SSIP)	Actual Expenditure (SPR2011)	Funding Gap (Difference, rounded)
SCENARIO A			
Total water sector*	169	65	104
Total capital inv.	115	59	56
Total urban (incl. small towns)	108	33	75
Small towns total	44	11	33
Small towns capital inv.	31	-	-
Small towns O&M	13	1	12
SCENARIO B			
Total water sector*	120	65	54
Total capital inv.	71	59	12
Total urban (incl. small towns)	70	33	37
Small towns total	29	11	18
Small towns capital inv.	19	-	-
Small towns O&M	10	1	10

* Funds for Water for Production and Water Resource Management excluded. NWSC outturn used. Half of NGO budget assumed urban.

The recent second Country Status Overview report for the Ugandan water and sanitation sector did not estimate specific funding requirements for small town water supply.

²⁷ Republic of Uganda. 2010. *National Development Plan (2010-11-2014-15)*. Table 7.10, p.270; For rural areas, a target of 77 percent has been set for 2014-15. See: Ministry of Water and Environment, *Sector Performance Report 2010*, p.xii

²⁸ Ministry of Water and Environment. 2009. *Strategic Sector Investment Plan for the Water and Sanitation Sector in Uganda*, p.ix

²⁹ The MDGs do not officially set separate rural and urban targets, but the implied values of these would be 70 percent access in rural areas and 89 percent in urban areas.

³⁰ The above figures are described as necessary to finance “some of the projects that sectors are expected to carry out during the NDP period” (rather than *all* projects judged necessary to reach the cited targets). Republic of Uganda, *National Development Plan (2010-11-2014-15)*, April 2010; p.385

However, its estimates for the total sector capital investment deficit was similar at US\$73 million annually, with an urban capital investment deficit of US\$38 million annually.³¹

As the SSIP envisages a progressive increase of funding over the years, the under-funding is likely to get worse unless a more decisive effort to stock-up funds is made. The budget trend, however, has been in the opposite direction both in absolute and relative terms. On-budget resources in the water supply and sanitation subsector have fallen from over US\$80 million (UGX200 billion) in fiscal year 2003-04 to US\$66 million (UGX165 billion) at present — even without adjusting for inflation.³² Relative to the total GoU budget, the share of the WSS subsector has declined from 4.9 percent in 2004-05 to around 1.9 percent in 2010-11.

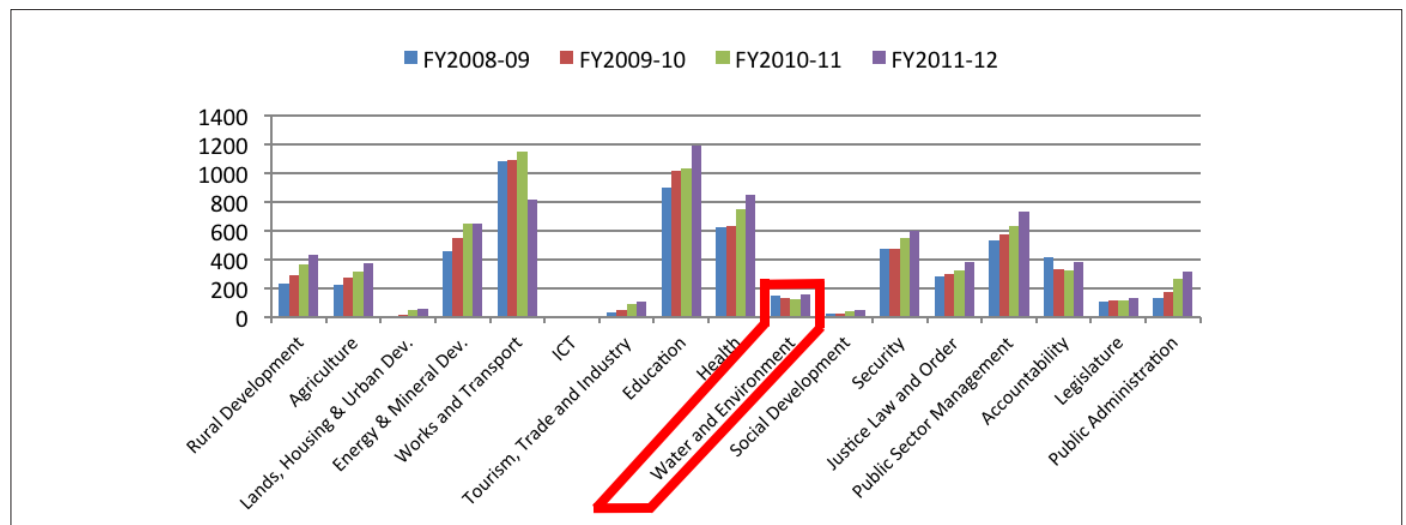
Lack of implementation capacity does not seem to be a reason for the limited budget assignments as implementation performance has been generally good. According to the 2011 Sector Performance Report, absorption rates (that is, the ratio of actual expenditure to released funds) were above 95 percent for both rural and urban subsectors.

Instead, the declining budget is due to sector ceilings in the MTEF, that is, a political decision to prioritize other sectors. Even if donors were to increase funds to the sector, these would be offset by a reduction in government funding. The relatively low funding allocation to water is motivated by the government giving priority to sectors such as roads, energy, health and education in the short- or medium-term. The sector ceiling for water and environment is as illustrated by Figure 3. Private investment may be a way to exceed the public finance ceiling. However, given the limited nature of current attempts to involve private finance in the Ugandan water sector, this is unlikely to happen in the short or even medium term.

Mechanisms of Small-Town Financing in Uganda

Small-town water systems are funded through a variety of mechanisms, but the single most important are the WSDF, which implement major small town infrastructure construction and rehabilitation, as well as sanitation interventions (for example, Ecosan toilets). This is where the

FIGURE 3: MTEF PROPOSED SECTOR ALLOCATIONS OVER THE MEDIUM TERM (UGX BN)



Source: Ministry of Finance, Planning and Economic Development. 2009. National Budget Framework Paper. Table 2.4, p. 34

³¹ WSP. 2010. *Water Supply and Sanitation in Uganda: Turning Finance into Services for 2015 and Beyond* [CSO2]. Nairobi: WSP. p.10

³² Note that there are also US\$24 million in WSS off-budget resources, of which US\$17 million are from NWSC (donor and self-investment funds) and US\$7 million from NGOs. No comparable number could be traced for 2003-4. Exchange rate at 2480 (UN Operational Rate, 30th June 2011). Not inflation adjusted. Includes Water for Production and Water Resource Management (which are excluded in Table 7!).

bulk of the government and donor capital for non-NWSC, that is, small towns was concentrated both in FY09-10 and FY10-11. Specifying the annual flows to WSDFs is difficult from the Ministerial Policy Statements, but these flows were clearly above US\$10 million in FY10-11 (also partly benefiting Rural Growth Centers).

Total tariffs and fees raised in the gazetted small towns are estimated at around US\$2 million (UGX5 billion),³³ enough to make a very significant contribution to operations and maintenance, but still far short of the sums necessary to expand existing networks and build new ones. The average tariff level in FY10-11 was just below UGX2,000 (US\$0.8) per cubic meter, with a range from UGX750 (US\$0.3) to UGX4,704 (US\$1.9).³⁴

Even with these tariff payments, however, O&M is still subsidized in some small town schemes through so-called O&M grants (sometimes confusingly called conditional grants, even though these are separate from the District Water and Sanitation Development Conditional Grants, which go to the district level authorities for general water and sanitation expenditures). The O&M grants are allocated by the MoWE in three categories: energy subsidies, new connections and “system specific” emergency funds. For FY10-11, the total amount of conditional grant subsidies was approximately US\$600,000 (UGX1.5 billion).³⁵

More difficult to quantify are indirect subsidies through training, repairs and other technical assistance provided by the support institutions, in particular, the Umbrella Organizations and the APWO. These organizations are heavily subsidized: the APWO has been almost entirely donor funded, and the Umbrellas receive up to 90 percent of funds from GoU and donors (the rest from member contributions). Though rising, the Umbrella budgets have been below US\$1,000,000 and APWO’s budget has been around US\$100,000 annually.

Private Credit by Commercial Banks

Private credit has played a marginal role in Uganda so far. Ugandan banks have been reluctant to lend to POs except when approached with the backing of third parties such as the World Bank or IFC. In the IFC supported Busembatia PPP, which included a GPOBA subsidy that lowered the operators default risk and was one of the first contracts with a five year duration (rather than the normal three), the Ugandan DFCU bank agreed to loan approximately US\$100,000 (UGX350,000,000) at 19 percent interest. Another operator managed to obtain a loan in a World Bank-GPOBA supported project for the equivalent of US\$20,000 (UGX50,000,000) from Barclays Bank of Uganda for two years with an annual interest rate of 27 percent. Barclays has also worked with other POs to provide limited financing totaling at least \$40,000 (UGX100,000,000) under its Small and Medium Enterprises umbrella using instruments such as small loans, contract financing, invoice discounting, overdrafts and letters of credit.³⁶

In general, however, such examples are still rare and at a small scale. Banks are reluctant to work with companies dealing with the public sector fearing delays in payment (for example, because the joint escrow account of private operators is partly controlled by the town council). Furthermore, the lack of asset ownership by operators and the limited duration of contracts undermine the credibility with which operators can commit future revenue streams towards repaying loans. Limited monitoring of PO operations and often poor record keeping pose additional problems.

To counter such structural issues until reforms address them, and to normalize the use of private credit in the small town water sector, a dedicated, subsidized lending program may be critical. It could make a big difference in a situation where many banks are reluctant but interested. In an IFC-commissioned Deloitte study, only three out of 12 banks outright declined interest in working with POs in the current PSP framework, while others indicated their

³³ Ministry of Water and Environment, Private Operator Performance Reports, extrapolated from reported average monthly values.

³⁴ The upper bound exceeds the UGX2,500 cap because the Ministry allowed higher tariffs in some special cases with very high production costs.

³⁵ Ministry of Water and Environment. 2011. *Sector Performance Report 2011*. Kampala: Republic of Uganda. p.16

³⁶ Deloitte. 2009. *Assessment of Private Water Operator Ability to Expand Service Delivery*. IFC. p.58

willingness to provide short-term working-capital loans at interest rates of between 18-27 percent per annum, especially if backed by outside institutions.³⁷ Given limited public resources, and the sector ceilings in place, pursuing a greater use of private finance in well-performing towns would be advisable.

The IFC and GPOBA Pilots: New Transmission Mechanisms

In 2005, the MoWE cooperated with the GPOBA to pilot a new, output-based aid model for greenfield small-town networks (design, build and operate) as well as the operation of selected existing brownfield small town schemes. Contracts for nine pilot towns were signed in 2008-9. In addition to this first output-based aid pilot, the IFC in 2007 signed a mandate to implement the Uganda Small Scale Infrastructure Provider Water Program. In June 2010, the IFC awarded the first contract for the town of Busembatia to a private contractor, with the GPOBA contributing the capital investment costs for the project.

In both cases, the basic idea was to increase financial participation of private actors and to incentivize good performance by making reimbursement dependent on outputs. In line with this goal, the contracts between operators and Water Authorities differed from the standard model. Contract duration was extended to five years in duration instead of the regular three, typically also allowing operators a higher percentage of revenues to compensate for their prefinancing risk and a tariff level that priced in some of the investment costs (usually tariffs are set only to cover O&M). The POs were also partially reimbursed for prefinanced investments after targeted yard-tap and public stand-post connection targets were met and independently verified. For the first pilot, the Ministry of Finance provided an exemption from the sector ceiling and allowed a private fiduciary agent (PricewaterhouseCoopers) to check quality and quantity of outputs.

While the standard framework of a chain of contractual responsibility from Ministry to Water Authorities (with a performance contract) and from WSSBs to the PO (with a management contract) was left in place, there are two key differences: Instead of the usual 100 percent upfront public

subsidies for infrastructure construction, the OBA approach transferred the risk to the PO because subsidy payments compensating for private prefinancing were conditional on actual performance. Secondly, investments were not 100 percent subsidized in all cases, that is, private investments did make a net contribution.

The necessity to prefinance led POs to seek out private sources of credit. As described in the preceding section, with the involvement of subsidies from international institutions, the longer contract period, the higher fee percentage and more flexible tariffs, at least two operators managed to obtain a significant bank loan. Even in these special circumstances of the GPOBA pilots, however, commercial loans were difficult to obtain for other POs who reverted to balance sheet financing and pushing their suppliers for prefinancing. This illustrates the challenges of expanding the role of private credit in the Ugandan water sector in general, where conditions with shorter contracts, less supervision, less flexible tariffs and lower fees are considerably less favorable for obtaining private credit.

While a thorough review of the GPOBA pilots is still outstanding, the contracted POs were still operating in all towns in 2010-11. An interim assessment of the first GPOBA pilot project found significant efficiency gains, in particular, lower overall subsidies per new person given access, better payment efficiency, and lower transaction costs. Some of these effects, however, may be due to the high-profile technical support by international partners and the involvement of a private fiduciary agent.

In spite of a generally favorable perception of the pilots, a scale-up has not been implemented so far. For this to happen, POs would need better access to private finance than is currently the case, a sustainable equivalent to the private verification agent would have to be found, and transaction support to local authorities and POs would need to increase. These issues touch on the key reforms which are discussed in greater detail in the final sections of this working paper. If these reforms were implemented, OBA transmission mechanisms could make a valuable contribution to improve the efficiency and risk profile of PO management and investments. Until then, however,

³⁷ Ibid.

it will remain an interesting pilot with limited broader applicability.

Sources and Flows of Public Funding

The FY10-11 water and sanitation sub-sector budget of UGX164.9 billion (US\$66.5 million) was pledged to 70.5 percent from GoU sources, and 29.5 percent direct donor contributions.³⁸ The donor contributions include all project-earmarked donor funding as well as the (nominally) earmarked budget support provided through the Poverty Action Fund.³⁹ However, non-earmarked donor budget support to the GoU is included under GoU sources. Thus in total, over 30 percent of the WSS subsector funding is externally financed if non-earmarked budget support and loans were taken into account. This is an improvement over the period before 2007-08, however, when the percentage of donor funding was consistently above 50 percent.⁴⁰ In this bigger sector picture, revenues from tariffs and fees of small-towns were significant but overall minor at approx. US\$2 million in fiscal year FY10-11.

Of the total subsector budget in fiscal year FY10-11, 63.2 percent were for programs managed by the central government (including the WSDFs, which enjoy considerable independence in practice). The remaining funds were flowing directly to local governments in the form of conditional grants. Of these grants, over 97 percent were in the form of DWSDCG and 2.6 percent (that is, UGX1.5 billion) for O&M grants for small towns.⁴¹ These O&M grants have been kept at the current level for the last decade in a deliberate policy to limit subsidies to existing systems.

With the exception of the small-town O&M grants, the local-government administered water sector funds are almost entirely classified and spent on rural rather than urban projects, that is, boreholes, protected springs, shallow wells and the occasional piped gravity flow system.⁴² Thus, the funds benefiting small towns are predominantly disbursed by the center, that is, over 80 percent of funds for “Urban Water Supply and Sanitation” (excluding the NWSC) are under the control of the MoWE.

Analysis of Available PSP Performance Data

Only 15 systems reported performance data in the first fiscal year with records (2001-02), which has increased to 88 systems in 2010-11. Moreover, even for the 15 first systems, some variables were not reported in the beginning.

To track performance over time, it is important to analyze the same set of systems to avoid changes in variables solely due to new systems starting to report (for example, “water supplied” suddenly spiking because 10 more systems start reporting). For 19 towns, we can track key variables for the nine years between 2002-3 and 2010-11.⁴³ This means we can analyze performance from shortly after these towns were made gazetted water authorities with POs until today. We may expect a gradual increase of performance over the years if, indeed, the POs and the associated management and support model was a success.

As can be seen in Table 9, the number of active connections has almost tripled in these 19 towns since 2010-11. From 4,883 (with a mean of 257) it has risen to over 13,000 (and a mean of over 700). We do not have population figures for the complete set of 19 towns, but UNICEF estimates

³⁸ Ministry of Water and Environment, 2010, *Sector Performance Report 2010*, p.36; Note that in the Ministerial Policy Statement 2010-11, the total FY09-10 approved budget of the WSS subsector of 154.635 is broken down into 40.3477 donor contributions, and 114.287bn GoU. All the donor contribution is to the MoWE budget, and zero to LG budget. (p.28/p.347). In other words, there's a roughly UGX7bn difference.

³⁹ As outlined in the DfID “Evaluation of General Budget Support – Uganda” country report (p.23), notional earmarking “involves justifying the allocation of budget support against pre-agreed budget lines, but disbursement is against a pre-agreed schedule, and not a reimbursement of actual expenditures”. By contrast, in “real earmarking” spending on pre-agreed budget lines precedes the disbursement of sector budget support” i.e. the budget support is a reimbursement.

⁴⁰ Ministry of Water and Environment. 2010, *Sector Performance Report 2010*. p.37

⁴¹ Ministry of Water and Environment. 2011, *Sector Performance Report 2011*. p.19

⁴² Ministry of Water and Environment. 2011. *Ministerial Policy Statement 2010-11*. p.351: Most LG funds budgeted for rural water supply and sanitation, see Table V3.1

⁴³ The 19 towns with data for 9 years are: Budariri, Bugiri, Busembatia, Busia, Buwenge, Kalangala, Kaliro, Kalisizo, Kamuli, Katwe-Kabatoro, Kayunga, Kitgum, Lyantonde, Moyo, Nkokonjeru, Ntungamo, Pallisa, Rakai, Rukungiri.

the annual growth rate of urban population at 4.2 percent since 2000.⁴⁴ For the period under consideration, this would imply an estimated population growth of around 45 percent, that is, active connections expanded much faster than population given the overall increase of 159 percent. This indicates that privately managed systems not only kept up with population growth, but expanded access (with contributing help of state subsidies).

Given that capital investments such as pipe extensions are still largely funded through subsidies (conditional grants), the steady expansion is, to a large extent a result of state support, rather than just private initiative. The percentage of active connections relative to the total number of connections has remained fairly stable, with around 20 percent of existing connections not being active, usually due to nonpayment or damage.

The amount of water supplied has also risen and reached almost 110,000m³ per month across the 19 selected systems (around 5,700m³ per system per month on average). However, the 78 percent increase since 2000-03 is considerably less than the expansion in the number of connections. This means each connection is on average

supplying less water in 2010-11 than it did in 2002-03. Available data indicate that this is generally not due to systems reaching their capacity constraints (in terms of source extraction, pumping, and so on).

While average reported system capacity utilization has risen from 44 percent to almost 70 percent over the period, systems are only operating at full capacity in three cases.⁴⁵ A possible explanation may lie in a shift towards more low-volume private connections at the expense of high-volume public standposts. However, due to the lack of connection-type data for the first half of the 2000s, this cannot be ascertained.

Interestingly, the percentage of nonrevenue water has actually risen over the years in the 19 examined systems. One may speculate that the fast expansion of pipes and connections has led to more opportunities for leaks and illegal connections. Future auditors should keep in mind, however, that an alternative explanation is water paid for but not reported as sold by operators to retain the full amount of revenue rather than just the official percentage. The relatively high number of connections reported as inactive may also be reviewed in this light.

TABLE 9: TOTAL NUMBER OF CONNECTIONS IN SET OF 19 TOWNS

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	15	19	19	19	19	19	19	19	19	19
Connections	3,130	4,883	5,742	6,728	7,872	8,327	9,519	11,477	11,596	13,359
Active	2,840	4,193	4,589	5,402	6,236	6,487	7,854	8,237	9,051	10,858
% active	91%	86%	80%	80%	79%	78%	83%	72%	78%	81%
Increase	na	na	396	813	834	251	1,367	383	814	1,807

⁴⁴ www.unicef.org/infobycountry/uganda_statistics.html [September 20th, 2011]

⁴⁵ System capacity utilization is defined as "Average daily volume of water supplied [in m³/day] in the peak month during the assessment period over maximum daily system capacity". Note that the definition does not consider daily peak supply.

TABLE 10: WATER SUPPLIED AND NONREVENUE WATER

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	14	19	19	19	19	19	19	19	19	19
Water supply (monthly, m ³)	2,793	60,646	59,392	70,990	68,922	64,959	83,087	92,599	100,0531	108,238
Water sold (monthly, m ³)	2,182	48,307	52,378	56,411	55,073	51,005	65,859	70,469	77,580	79,497
NRW (%)	22%	20%	12%	21%	20%	21%	21%	24%	23%	27%

Note: These are totals for all 19 systems (average month).

The most dramatic improvements have occurred in the variables that may be expected to be most directly impacted by a switch to POs driven by a profit incentive: bills issued and collection efficiency. While the value of bills issued has

approximately doubled, bill collections have almost tripled, leading to a rise of collection efficiency from around 70 percent to 90 percent in 2010-11.

TABLE 11: COLLECTION EFFICIENCY

UGX '000	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	13	19	19	19	19	14	19	19	19	19
Bill value (monthly)	29,752	59,960	76,171	72,577	62,503	49,077	75,777	89,955	111,710	123,998
Collections (monthly, m ³)	21,104	42,687	48,997	56,846	53,322	41,237	65,005	78,029	89,949	111,497
Collection efficiency	71%	71%	64%	78%	85%	84%	86%	87%	81%	90%

It should be noted that in addition to the pressure brought on bill payers by operators motivated by profit incentive, the government has also carried out local campaigns to

make the idea of paying for water services more acceptable (the key strategy being to emphasize that the service of *delivering clean* water is charged for, not the water itself).

TABLE 12: AVERAGE PRODUCTION COSTS AND SELLING RATES

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	1	8	9	10	13	12	19	19	19	19
Cost per m ³ (UGX)	932	661	1,267	1,068	939	937	859	851	893	1,198
Average tariff (m ³)	1,170	991	1,282	1,284	1,050	1,147	1,151	1,277	1,440	1,560

Data for the cost per cubic meter sold (not counting costs of capital investments) unfortunately only go back to 2007-08 for the full dataset, and for 10 systems, we have data since

2004-05. For these 10 schemes, nominal tariffs rose by 10 percent in five years, but strong inflation more than offset this nominal rise in tariffs and resulted in a 33 percent *decline*

in real prices. Thus water tariffs are considerably lower today than they were five or 10 years ago in real terms.

Operators seem to have reacted with cost-saving measures, achieving a decline in real costs to offset the decline in real tariffs. However, overall profit margins nevertheless

decreased between 2004-05 and 2010-11. Moreover, given that system operation involves certain fixed-costs, compensating for inflation through cost savings is certainly not a productive long-term strategy as it will undermine the quality of O&M.

TABLE 13: DEVELOPMENT OF TARIFFS AND INFLATION, 10 SYSTEMS

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	10	10	10	10	10	10	10
Cost per m ³ (UGX)	1,068	1,017	872	900	806	756	1,068
Average tariff per m ³ (UGX)	1,284	1,070	1,083	1,151	1,195	1,272	1,408
Average Tariff (2004 prices, UGX)	1,284	987	930	932	863	813	866
Annual inflation (%) *	3.7%	8.4%	7.3%	6.1%	12.1%	13%	4%

* Data source is DDP World Bank, annual % consumer price index (FP.CPI.TOTL.ZG), multiplied over the period.

The analysis of overall costs and revenues is unfortunately also hampered by a lack of full data in the early 2000s. The basic story the available numbers tell, however, is the following: Since the early 2000s, the systems examined here seem to have slowly edged towards a positive operational balance, whereby bill and fee revenues cover at least operational costs (including minor repairs). However, capital investments such as pipe extensions, which are critical in view of the rapidly growing population, are not covered by

revenues. However, given the positive operational balance, these core systems may be able to repay private loans if they had access (which is hampered for a number of reasons, such as lack of precedence and asset ownership and short contracts). It should be noted that a positive operational balance implies spare funds *in addition* to operator profits which are included in the management fee and thus “cost of operation.” Theoretically, these private profits are also available as investment capital.

TABLE 14: COSTS AND REVENUES IN EXAMINED SYSTEMS

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
No. of towns	1	8	9	10	13	12	19	19	19	19
Cost of operations (UGX '000)*	2,029	10,901	23,033	38,483	45,874	36,304	56,599	59,957	69,316	95,223
Total expenditure (UGX '000)**	na	na	na	na	na	na	70,386	90,901	107,337	144,376
Revenue (UGX '000) ***	7,045	15,783	18,119	35,032	44,559	38,730	66,089	81,198	96,428	115,603
% costs funded by revenue	347%	145%	79%	91%	97%	107%	117%	135%	139%	121%
% expenditure funded by revenue	na	na	na	na	na	na	94%	89%	90%	80%

* Excluding capital investments | ** Including capital investments | *** Excluding grants

Cross-sectional Analysis of Gazetted systems in 2010–11

In fiscal year 2010-11, 88 systems submitted complete performance reports for at least some months of the year. This fairly large sample of small town systems has been used for a cross-sectional analysis.

The descriptive statistics for these 88 systems in 2010-11 broadly confirm the results from the examination of the 19 systems since 2002. Thus, the operational balance (revenues without grants minus operational costs excluding capital investments) is positive for the mean system; however, this turns very strongly into the negative once capital investments are factored in (overall surplus without conditional grants). The latter reflects the fact that contracts and tariffs are designed to cover only O&M while major rehabilitations and investments still remain an almost entirely publicly funded affair. Collection efficiency was also close to 90 percent and nonrevenue water around 20 percent of production. Details may be taken from Table 1.

In the full FY10-11 sample, active connections (with a mean just below 400) and water supplied (with a mean of around 4,000 m³ per month) are considerably below the mean values of the 19 systems examined above, which makes sense if one considers that these 19 systems were gazetted first, that is, likely already somewhat larger and then systematically developed for a longer time than systems that were gazetted more recently.

Collection efficiency was somewhat lower for non-PO run schemes (84 percent mean), and even lower for the subset that had never been run by a PO (74 percent mean). However, although it is tempting to use this as evidence that POs drive bill collection improvements, the sample of towns that had never been run privately is too small to ascertain the statistical significance of the difference. This is, thus, only circumstantial evidence.

Regression Analysis for Gazetted systems

Regression analysis can show which factors significantly determined whether a gazetted small-town system turned a positive operational balance or not. Over 67 percent of the variation in the operational balance could be explained with the chosen variables (R²). Six individual variables were found to have a significant effect on the operational balance.

Firstly, having a PO (private) was shown to have a highly significant positive effect on the operational balance. Since collection efficiency, electrical costs, staff numbers, system size, metering ratio and nonrevenue water are all controlled for, this potentially captures a general “efficiency bonus” associated with private management (for example, less wasteful spending). It should be noted that for POs, the operational balance is already net of profits and all fees.

However, this finding has to be qualified: 11 out of the 17 currently nonprivately run schemes have had POs before. In a few cases the negative impact of public management may be an illusion, as the schemes were only taken over by the public for a short time after private (mis)management. However, *ceteris paribus* and given the current data, statistical analysis does suggest that POs manage schemes at least as or more efficiently than communal approaches on average.

Further confirmation of this result with additional data is necessary. A variable representing the time since a system has had a PO was not significant, that is, there is no significant positive effect associated with having been operated privately for a longer time.

The second variable with a significant positive impact on operational balance is the difference between selling rate and production cost of a cubic meter (*ratedif*). Though the effect is relatively small in size, it illustrates that pushing down costs and increasing rates will improve operational balance.

Thirdly, the number of active connections (*act_con*) is a significant positive determinant of operational balance. This is a strong pointer towards the importance of economies of scale – bigger systems have it easier turning a positive operational balance. The result implies that, on average and *ceteris paribus*, an additional 100 active connections will lead to an increase of over US\$55 in the monthly operational balance. This may not sound much, but it is significant in an environment where the monthly operational balance of the average system is only approximately US\$99 (UGX245,378) in the positive.

This finding provides hard evidence for the anecdotal knowledge that smaller schemes are less suitable for commercial management. In the absence of clustering, this may circumscribe further expansion of the current model

in Uganda, given that the larger schemes are already either privately managed or under control of the national utility.

A further strong and significant determinant is collection efficiency (*col_eff*): In the present sample of gazetted systems, a 10 percent increase in collection efficiency would on average lead to an increase in the monthly operational balance of US\$76 (UGX189,644). Given the association of collection efficiency increases with private management, this reinforces the evidence for a positive impact of PSP.

Two variables have a significant negative effect: On the one hand, having to treat water chemically (*chemdummy*) has a significant negative impact on the operational balance. This simply shows that systems with sources that require to be treated chemically to be drinkable have additional costs and a harder time breaking even. A system that is treating its water chemically on average has an operational balance that is US\$195 lower.

Finally, the management fee percentage has a significant negative effect. In the Ugandan system, management fees are negotiated as a percentage of total revenues. The fees are then supposed to cover operational costs including staff and profits. The management fees are paid out of an escrow account that receives revenues, once a standard 5 percent of collections is subtracted as water board fee. The result obtained here suggested that systems in which the PO negotiated a higher percentage of takings as fees have a lower operational balance on average.

The causality behind this effect may be ascribed to two effects: The first explanation may be that operators in more difficult, less profitable systems negotiate a higher fee percentage as risk compensation. However, correlations between fee percentage and indicators of likely system profitability (number of connections, profit margin per cubic meter, functionality) are all positive. This indicates that higher management fees are associated with systems that are easier to turn a profit on, and points away from the first hypothesis.

The second explanation suggests that rational POs try to take as much profit as possible by maximizing their percentage of revenue even if this leads to excessive profits at the expense of the operational balance of the system. Inadequate supervision and assessment capacity by local

authorities in charge of tendering system contracts make them susceptible to exaggerated claims of operational costs to justify high fee percentages (often re-negotiated after a low bid was first used to win the actual contract). In other words, the higher the management fee percentage, the less money is available in jointly administered escrow accounts, and the more likely the operational balance to dip into the negative as revenues are creamed off by the operator rather than used for operational expenses or investments.

The cost of electricity per cubic meter of water is also significant, however, not in the expected direction. This can be explained by the fact that the direct (negative) cost effect of electricity is already captured by the variable *ratedif*, which is the smaller the higher production costs. It is likely that the significant positive effect of *ecost2* indicates some significant variation of operational balance on top of the already accounted for direct electricity cost effects.

Neither the number of staff, nor the percentage of nonrevenue water has a significant effect on the operational balance. With respect to staff numbers, the effect of additional staff is likely to be ambiguous: on the one hand, additional staff is a cost factor, and overstaffing a classic reason for inefficiency. On the other hand, well-trained capable staff is necessary to oversee the effective operation and revenue collection of a complex small town water system.

Comparison to Non-gazetted systems

Out of the hundreds of non-gazetted piped schemes outside the PSP model, approximately 70 which are members of the Umbrella Organizations reported limited performance statistics in fiscal year 2009-10. Specifically, the number of total connections, system capacity, water supplied and sold (and thus nonrevenue water), total revenue and expenditure. This allows at least a brief comparison with the figures of gazetted schemes discussed above.

As may be expected, the average population of the towns with nongazetted systems (8,900) is less than half that of the towns with gazetted systems (20,160); the average number of total connections is only 90, whereas it is over 460 for the gazetted schemes. The percentage of nonrevenue water is 34 percent and thus considerably above the less than 20 percent average in gazetted schemes. The average nongazetted scheme also reports a positive operational surplus, but lower than

TABLE 15: ROBUST REGRESSION OF OPERATIONAL BALANCE ON EXPLANATORY VARIABLES

Linear regression (robust)						Number of obs = 70	
						F(10, 59) = 9.84	
						Prob > F = 0.0000	
						R-squared = 0.6774	
						Root MSE = 805.19	
balop	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]		
staff	55.22314	35.63418	1.55	0.127	-16.0807	126.527	
ratedif	.3073889	.1127063	2.73	0.008	.0818641	.5329137	
meter_r	-636.8445	541.5891	-1.18	0.244	-1720.562	446.8727	
act_con	1.371073	.403987	3.39	0.001	.5626973	2.179449	
col_eff	1894.644	844.0669	2.24	0.029	205.67	3583.618	
ecost2	.6339405	.1695451	3.74	0.000	.2946815	.9731994	
nrv	15.77033	16.23392	0.97	0.335	-16.71367	48.25433	
private	1702.967	542.9529	3.14	0.003	616.5207	2789.413	
chemdummy	-485.0299	180.1013	-2.69	0.009	-845.4118	-124.6479	
mgmfee	-28.28829	7.020755	-4.03	0.000	-42.33679	-14.2398	
_cons	-1626.882	689.1052	-2.36	0.022	-3005.778	-247.9853	

in the gazetted schemes. No data are available on capital investment costs or any other performance variables.

What this shows is that schemes that remain outside the model of gazetted water authorities are on average smaller and less well performing than those already gazetted. While this is partly because gazetted schemes have generally received more attention and investment, and may have had better management, the difference in population indicates that the primary reason is simply that bigger schemes in bigger towns were the first that were chosen for the PO model. As the PO model is expanded to more systems, it is clearly entering territory where the basic structural characteristics

of the schemes (for example, size) make turning a profit more difficult than is the case in the current set of gazetted systems. This will increase the pressure to reform the current model, for instance, by improving contract design, carrying out better auditing and, in the long-term, clustering systems together to attain better economies of scale.

The Ugandan PSP model has evolved into a complex and, by many measures, successful system. There are, however, still considerable challenges and thus scope to improve current arrangements. The most important are considered in this section.

III. Remaining Challenges and Future Reforms

Capital Investments: Raising More Funds

In Uganda, capital investments in small town water supply are primarily carried out by the public sector. Public funds, however, fall significantly short of what is needed according to the government's own sector investment plan (Table 8). As outlined in Figure 3, this has been the result of a conscious political decision about medium-term priorities among sectors. Raising significantly more public finance for small-town water supply investments will require political initiative to increase the profile and sector ceiling of the water sector in the budgeting process.

Beyond the public purse, private finance offers a possible source of funds that has not been tapped at scale so far. POs have not been well positioned to obtain private finance because lack of asset ownership and short-term contracts constrain their ability to guarantee revenue generated by water systems beyond the end of their contracts or, indeed, a possible premature cancellation. What is more, short contract durations also undercut the incentive of POs themselves to make investments that would only pay off in the medium- or long-term. These issues are compounded by the current lack of regular audits and high quality book-keeping, which further undercut the case of POs aiming to convince private creditors to provide loans.

If private financing is to be scaled up while other reforms are still outstanding, it may require a specially designed program to counter some of the structural problems in the current framework (for example, short contracts, and so on), facilitate the credit-process for POs and give lenders more confidence to loan to the sector. In this respect, the Kenyan *Maji ni Maisha* GPOBA project may provide inspiration for Uganda.

While a special lending vehicle may expand the use of private credit, in the medium term private loans can only become a substantial and sustainable part of small-town water system investments if the other reform challenges outlined in this section are also addressed: without better performance reporting and auditing, banks will not have the confidence to make loans; without at least five-year contracts, loans will be less attractive and more difficult to repay; without asset

BOX 1: MAJI NI MAISHA: PRIVATE FINANCE FOR TOWN WATER SYSTEMS

Maji ni Maisha worked with K-Rep Bank and the prospective asset owners (i.e. Community Water Projects) to develop a targeted and standardized lending project for small-town water systems. Using dedicated subsidies of up to 40 percent to lower risk, and considerable outreach efforts to convince and support both the bank and the communities, the *Maji ni Maisha* program has made loans to over 10 water projects for up to five years and up to over US\$100,000 per loan with interest rates of approximately 16-18 percent.

The scheme is now being expanded, targeting over 55 additional communities. The K-Rep *Maji ni Maisha* project in Kenya has demonstrated that small piped water projects can successfully receive private loans at competitive rates. A similar special lending program could be adapted to the Ugandan context, working with Water Authorities, POs and the WSDF support institutions.

registers, an empirical case for investments will be harder to make; without tariff reform, uncontrolled inflation that erodes real prices will make loans high risk and repayment difficult; without clustering, smaller systems that are not efficient on their own may never benefit from private credit and many small loans spread over multiple operators may be required where otherwise one larger loan to one PO would suffice.

Improved Regulatory Control and Expanded Technical Support

A recent report by the Water Integrity Network, WSP and Transparency International found that “corruption is pervasive in the Ugandan water sector” — both grand corruption during procurement processes, and petty corruption during commercial operations. POs reported that bribes and kickbacks are common and generally up

to 10 percent of contract value.⁴⁶ The recent 2012 Sector Performance Report by the MoWE states that:

“There is lack of transparency during the procurement process of Private Water Operators. Undoubtedly, the process is characterized with limited levels of transparency, high levels of corruption and delays.”⁴⁷

To effectively counter this situation will require greater investments in regulatory control and technical support, both at central and local level. At central level, the provisional regulatory unit currently within the Directorate of Water Development of the MoWE should finally be turned into an independent regulator that is appropriately staffed and funded and has clearly defined directive powers (for example, to enforce fines after audits). After years of planning, internal discussion on how to best implement such a regulator should now be swiftly concluded.

The counterpart to more central regulation is additional technical support at local level. In many locations, WSSBs need more help to supervise POs from day-to-day. As a recent report reviewing Kisoro and Kitgum systems found, POs are “becoming increasingly more knowledgeable than WSSBs,” thus reducing the capacity of the WSSBs to control the operator. As the report notes, this “seems to come from the wholesale changes made in the composition of the boards [after elections] ... New members take time to learn their responsibilities and rights let alone how to enforce them, even after training (usually done by DWD or Umbrella)”.⁴⁸ The low capacity of WSSBs means that the first line of control is weak, making the task of central regulators much more difficult.

Given that the institutions to provide local technical support are already in place in the form of Umbrellas, these should be systematically strengthened and their mandate expanded beyond O&M support to training WSSBs in regulatory tasks. The APWO is playing a key role in

professionalizing and training operators, and should also receive further support, though with the aim of eventual financial independence.

A particular case of concern is the existing system performance reporting, which is crucial to assess whether POs are providing a satisfactory service in line with their contracts. More regular verification is necessary, at least on a spot-check basis. This should be done at the center as local WSSBs may not always be incentivized to report irregularities.

At present, and in spite of some control by local WSSBs and sporadic reviews by the existing regulation unit, performance data are not regularly and comprehensively verified.

Auditing Reform: Three Necessary Changes

Financial auditing is a subset of regulatory control that is so important as to require specific emphasis here. Three challenges need to be addressed with respect to the financial auditing of small-town water systems: lack of quality, lack of regularity, and lack of consequences.

At present, there is no functioning system of regular, quality auditing of small-town water supply finances and performance. Annual audits by the Auditor General cover only conditional grants but not the bulk of revenue generated and used. Some schemes carry out internal audits, but there is no recognized minimum qualification or standards for such internal audits where they take place, and their independence is inherently compromised given that the town council is itself directly involved in administering water system finances. Umbrellas also carry out audits, but these are irregular, voluntary, and do not apply at all for schemes that are not members.

In practice, there is thus no system of regular financial auditing by an independent, qualified auditor. Even worse, the audits that are implemented have barely any consequences. Umbrella audits are purely advisory and their results can simply be disregarded by operators and

⁴⁶ WIN-S, WSP and Transparency International. 2009. *Baseline Survey on Integrity in the Uganda Water Supply and Sanitation Sector*. p.139

⁴⁷ Ministry of Water and Environment. 2011. *Sector Performance Report 2012*. p.212

⁴⁸ COWI / Austrian Development Cooperation. 2009. *Evaluation of Water Supply and Sanitation Projects for Kisoro and Kitgum Towns*. p.85

town-boards. Likewise, internal audits can be disregarded with no mandatory consequences. Auditor General audits only affect conditional grants, which may be withheld as a consequence, but are usually only a fraction of total revenue and thus provide only limited leverage. Even though a list of possible sanctions has been developed and submitted to the MoWE, it has not been effectively operationalized so far. Lack of effective auditing not only poses a risk to WSSB and citizens paying operators, but are a key constraint on commercial lending.

The three necessary improvements to accountability are thus to implement audits (a) with more independent, qualified staff; (b) on a regular basis; and (c) with mandatory consequences. Better auditing of private operators and local authorities, who will always have an incentive to maximize their takings, is absolutely crucial.

If capacity constraints prevent annual auditing of all schemes, these should be phased in by starting with selective high-profile audits, eventually moving towards greater regularity. Alongside the upgrading of internal auditing capacity, the Ministry and its partners should consider contracting a reputable external company for the first of these audits in order to establish a high-quality precedent, with guidelines and procedures to follow subsequently.

Furthermore, the Ministry (or, once established, the new regulator) should enforce a set of mandatory consequences of audit results. Local WSSBs and POs should be required to at least discuss the Ministry audit reports and submit formal answers with respect to any inefficiencies or irregularities raised. Serious and not remedied transgressions by POs should also impact their ability to bid for new contracts.

Improving System Data by Building up Asset Registries

Closely linked to improving financial audits is the necessity to carry out technical audits to build up a comprehensive, up-to-date asset registry. As stated in the Sector Performance Report of 2011, most “systems lack system design reports, operational manuals for the schemes, and/or systems layout maps. This has hindered POs from effective management, monitoring and updating of the system in a professional manner.”⁴⁹

Reliable asset registries are also a critical precondition for other suggested reforms. For instance, private financing, for example, for system expansions will need to build a clear, empirical case for what is needed and how much it will cost, which require full knowledge of asset conditions. The German technical assistance agency GIZ is currently undertaking an asset registry exercise in selected systems. This effort should receive further support to expand it to all small-town piped water systems.

Tariff Reform: Indexing the Cost of Water to Inflation

PSP is often opposed on the grounds that private tariff setting would make safe water unaffordable to the poor. While the introduction of the Ugandan PSP model has been accompanied by an introduction of paid service to ensure more sustainable maintenance, the available data show that prices have not tended to increase over time in real terms since.

Indeed, the well-controlled system of negotiating the water tariff at local level with mandatory Ministry approval and a tariff cap of UGX2,500 have put considerable downward pressure on the real price of water. As outlined in the performance analysis above, in real terms water tariffs tend to be lower today than they were five or 10 years ago. POs have reacted with cost savings to compensate for inflation, but uncontrolled erosion of revenues through inflation undermines confidence in contracts and is a long-term threat to proper system maintenance.

The business plan process that includes the possibility of tariff reviews has proven a somewhat blunt instrument against real price erosion through inflation, not least because local political actors face strong popular pressures against price increases even if just to keep up with inflation. To avoid this, new inflation indexed business plans, which have been piloted recently, should be supported and fully rolled out to all schemes to put an end to the uncontrolled erosion of real tariffs through inflation. Moreover, the current cap of UGX 2,500 should also be increased in line with general inflation. In well performing schemes that have a significant investment needs, POs’ role in investments

⁴⁹ Ministry of Water and Environment. 2011. *Sector Performance Report 2011*. p.140

may be expanded (for example, in the context of a private credit program), and in such cases more flexibility to reflect capital investment costs (rather than just O&M) in tariffs should be considered.

Contract and Fee Reform: Longer Duration and Covering Depreciation

A longstanding issue has been the traditionally short PO management contract duration of three years. This has disincentivized POs from taking a longer-term view, for example with respect to maintenance and system expansions. It has thus played a key role in limiting the amount of private investments, and more generally the ability of POs to familiarize themselves with a new system, break even, and run it with continuity.

Local governments have opposed longer contracts, fearing the loss of leverage if new tenders were not compulsory after three years. However, in practice new tendering after three years has proven problematic, both because transitions have not been smooth (leading unprepared town councils to run schemes for months until a new PO is procured) and because local tenders are particularly prone to irregularities. Moreover, if well designed, five-year contracts need not imply a loss of leverage as these could and should be terminated in the absence of PO performance. This is particularly so if the regulator and local capacity is strengthened as suggested above. After various pilots, the longer five-year contract duration should thus be expanded to all towns going forward.

In terms of operator fees, a key problem is that, at present, POs automatically retain all revenue of their fixed percentage that is not spent on operations and repairs. It is thus in the operators' direct financial interest to minimize any operational outlays except those necessary to avoid short-term breakdowns during their three-year contract period. This is not optimal in the long term as it leads to system neglect when quick fixes are substituted for necessary repairs. In particular, depreciation of critical system hardware such

as major pumps and pipes is generally not covered by POs, even in some of the most profitable schemes.

The sector should carry out a thorough review of contracting options, and, in particular, rethink how asset depreciation could be prevented more effectively by giving operators the right incentives. Better performing systems with asset registries may move towards lease contracts that ensure that asset depreciation is covered by the operator whenever possible.

A final point concerns the standard 5 percent of revenue fees given to WSSBs, which are supposed to cover board expenses. In the future, the 5 percent should be an upper limit rather than a fixed percentage. Board fees should be negotiated with the Ministry to account for actual costs to the board, which in large schemes may be considerably less than 5 percent of revenue.

Clustering

A key reform to put the Ugandan small towns PSP model on a more efficient, sustainable footing is system clustering. An IFC commissioned study on POs concluded in 2009:

“Clustering will be a good way of helping to improve the viability of the PO business. Currently [some] of the POs end up with very small towns which are scattered all over the country and this stretches their efforts to deliver. The clustering processes can lead to efficient supervision, better management of services and reduction in corruption. Clustering would further aid the cross subsidization of smaller uneconomical towns...”⁵⁰

The Ugandan APWO has strongly supported the idea of clustering as have representatives from the WSDFs and the MoWE, as well as the Urban Water Sector Vision 2025 document.^{51, 52} System clustering is also important because larger small-town systems have been brought under PO management by now, and the remaining systems tend to be smaller and less attractive. If the PSP model is to be extended further with success, clustering will be crucial.

⁵⁰ Deloitte. 2010. *Assessment of Private Water Ability to Expand Service Delivery*. IFC. p.34

⁵¹ <http://www.apwouganda.org/take-problems-of-private-water-operators-seriously> [13.4.2012], also see Ministry of Water and Environment, 2011, Sector Performance Report 2011, p.139

⁵² Interviews carried out for this report.

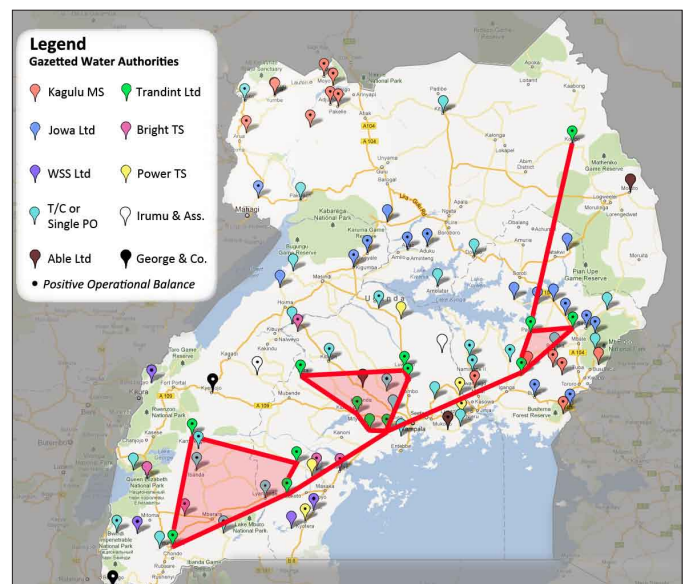
Without clustering, POs face higher overhead costs from a number of sources. First, internal management is more expensive as managers have to travel far between the schemes to resolve problems. A particularly well known issue is the requirement for the chief manager to sign for joint-escrow account expenditures as local officers generally do not have signing power, causing considerable costs and delays. The geographical dispersion also prevents an optimization of staffing across schemes, as technicians and accountants can often not be shared in an ideal way.

As illustrated in Map 2, in FY10-11 the PO Trandint Ltd. managed 14 schemes spread over a distance of over 1,500 (road) kilometers, with over 100 kilometers between two schemes on average. The Trandint Ltd example also shows that operators have tended to counteract this problem by competing for contracts of schemes that are relatively close together, creating de-facto clusters. For example, as Map 2 highlights, the Trandint Ltd. schemes form three de-facto clusters with only one major outlier. Similar “self-selected clusters” are formed by some of the other operators, for example, Kagula MS in the north-west and center-east, or Jowa Ltd in central Uganda and WSS Ltd. In the south-west. However, these clusters are not stable as each contract must be competed for individually, and consequently they are interspersed and overlapped by other operators. This suggests that further efficiency gains are possible by creating larger, more stable, and more coherent clusters.

Clustering could have further advantages. First, operators tend to cherry-pick well-performing schemes and disregard smaller, less profitable ones, which then fall back to public management (that is, run by town councils). In FY10-11, the systems managed by POs had almost 150 active connections more on average than publicly run systems, and also tended to be newer on average.⁵³ Both indicators point towards a self-selection of operators into inherently more profitable schemes (that is, with better economies of scale and lower repair costs). Well-planned clustering could gently counteract this by bundling some less attractive schemes with more attractive ones and thus achieve cross-subsidization.

The second advantage from the government’s point of view would be a simplification of administration and supervision. At present, over 90 management contracts are put out for tendering by local WSSBs in three-year cycles all across the country. It has proven extremely challenging to guarantee an efficient, problem-free tendering process at the local level, and subsequently supervise performance and enforce management contracts.

MAP 2: DISTRIBUTION OF GAZETTED SMALL TOWN SCHEMES (FY10-11)



Note: Trandint Ltd. Has been highlighted

While clustering would not reduce the number of systems, it would provide for a move towards fewer tenders and contracts. The reduced number and frequency of contracts, and lower number of interlopers, would allow for a better preparation and supervision of contracts. However, it would also raise the stakes by increasing the value of each contract. Clustering reform can only succeed if the associated tendering system is implemented with a high standard of transparency and supervision.

⁵³ Average age had to be inferred with data for only half the sample and excluding two extreme outliers.

In spite of a seemingly broad agreement on the desirability of clustering, no significant steps towards its realization have been taken. Stakeholders have been paralyzed by the perceived complexity of the reform of the current contracting model as well as political opposition from the local level. The Urban Water Sector Vision 2025 report, for instance, suggested the creation of regional utilities combining all large towns, small towns and rural growth centers within an agreed geographic perimeter. This would require a complete overhaul of the entire Water Authority system, breakup of the current NWSC supply structure and creation of new regional WSSBs. There has been considerable opposition to the idea by local governments which oppose the idea of yielding control to regional or national authorities as may be required in clusters that extend beyond the administrative area of, for example, individual town councils.

Stakeholders should realize, however, that basic forms of clustering could build on the existing framework, for example, by tendering sets of individual contracts within districts. Existing regional Umbrellas and WSDFs, in cooperation with the cluster operator and local authorities, could provide support for rehabilitations, extensions and repairs to systems within clusters. Local Water Authorities would remain in charge of day-to-day supervision of individual schemes within clusters, continue to contribute to tariff setting, co-sign the local escrow account, and drive extensions and investments with the help of support institutions. With their key tasks and responsibilities intact, performance contracts between Water Authorities and the Ministry should also be retained as a key tool to set targets for local governments. Over time, realized efficiency gains may provide a strong enough argument to move to more comprehensive clustering schemes across districts.

The key next step will be a clear political endorsement and the development of a detailed transition plan and pilot in one region. While clustering may not be a short-term priority given the other challenges, it is a key reform in the medium and long-term, and should remain on the agenda.

Moving Forward

A decade after its introduction, Uganda's PSP approach to small-town piped water supply has evolved into a stable system with a number of solid achievements. Connections have steadily expanded and system sustainability has risen

to the point that over US\$2 million in tariffs are collected annually and the average system can cover operating costs. Collection efficiency in PSP towns has improved to over 90 percent and metering is near universal, while water has by and large remained affordable. The sector has been re-organized, with regular reviews attended by all stakeholders and much better data collection than was previously the case.

The remaining challenges outlined in this report are complex and currently cause significant costs and inefficiencies, but they can be overcome if the sector pursues the opportunities for reform described above. The interlinked nature of these reform opportunities implies that improving one area can have broad beneficial effects on the others. For example, better auditing, proper asset registries, and longer contract durations will not only improve system management but also make raising private finance easier. This opportunity for dynamic improvements should be seized with confidence and could considerably improve service quality and sustainability of small piped schemes in Uganda.

The reforms proposed in this working paper center on fine-tuning the incentive framework within which POs work: extending contract durations to improve incentives to invest; developing special loan programs to increase incentives to use private finance; improving regulatory control and auditing to reduce incentives to cheat and ensure alignment with public service provision goals, and so on. A working incentive framework, however, requires a strong, active, well-functioning public sector to design and enforce it.

The Ugandan experience thus shows that local POs can be successfully engaged to manage public infrastructure in small towns. However, it also underlines the continued importance of the public sector. Private agents are rationally self-interested and it takes a well-functioning state to ensure that the technical, commercial, and financial resources of the private sector are deployed in a way that is mutually beneficial for private agents and the public at large. A well-functioning PSP model is a symbiosis of public and private. The Ugandan water sector has come a long way towards achieving this delicate balance, and with additional reforms to strengthen public institutions and the regulatory framework, further progress towards it is within reach.

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Appendix A: Understanding Uganda's Decentralized Political Structure

Uganda's decentralized administrative structure is the context within which small-town water supply — including its private sector aspects — is organized and regulated. To understand the current water supply system's strengths and weaknesses, it is thus necessary to have a clear comprehension of Uganda's administrative structure.

The fundamental characteristic of Uganda's government today is its relatively decentralized administrative structure, even as the president retains overarching powers granted by the constitution and reinforced by patronage networks. Upon seizing power in 1986, the National Resistance Movement (NRM) consciously broke with the highly centralized administration established by Idi Amin after 1971. This started with the establishment of local "resistance councils" in 1986-87, which were portrayed as a step towards the realization of the first point of the NRM's Ten Point Programme — the restoration of democracy.

Falling back on locally constituted resistance councils for basic administration and services was largely a necessity given the human capacity constraints of the NRM immediately after finding itself in power in a country devastated by the long bush war. Even after the initial post-war emergency phase, however, the decentralization policy was systematically pursued. District administrations were strengthened, and the early 1990s saw a gradual but continuous empowerment of local resistance councils. The Local Government Act of 1997 then established the current administrative structure.

Currently, the basic administrative division of Uganda is into 111 district councils and in addition Kampala City Council, the capital having equivalent status to a district. To understand the further political division, one must realize that there are two separate types of divisions with distinct roles: on the one hand there are "local government" councils, and on the other hand "administrative" councils.

Local government councils are directly elected body corporates with powerful legislative and executive functions. The local governments initiate and formulate policy, monitor and oversee the implementation of policies and programs, can sue and be sued, and so on. According to the Local Government Act, local governments have the right and obligation to "formulate, approve and execute their budgets and plans provided the budgets shall be balanced" (Section 77). While there are considerable transfers from the federal down to the local government, for example, the DWSCGs, the local governments may also "levy, charge and collect fees and taxes" and where it collects "fees or taxes on behalf of the Government as its agent... a portion of the funds collected shall be retained by the local government as may be agreed upon between the two parties" while "any extra obligation transferred to a local government by the Government shall be fully financed by the Government" (Section 80).

By contrast, the administrative councils are not corporate bodies, and have a more passive supervisory role, limited to advise the local governments, to resolve disputes, to monitor service delivery, and to assist in the maintenance of law, order and security. Administrative councils are not elected but generally staffed by members of the next corresponding local government unit.⁵⁴

In terms of local government units, the next level below the district councils are the municipal counties (in municipalities), the town councils (in smaller towns) and the sub-county councils (in rural areas). Within Kampala, the equivalent local government unit is the city division council. As will be outlined in greater detail below, in the context of private small-town water supply, the crucial local government unit is the town council, which the Ministry of Water and Environment appoints as a water authority, and which then typically hires a private operator (PO). In rural sub-counties, a different system is in place and private

⁵⁴ Mugabi, E. 2004. *Uganda's Decentralisation Policy, Legal Framework, Local Government Structure and Service Delivery*. Paper prepared for the First Conference of Regional Assemblies of Africa and Europe.

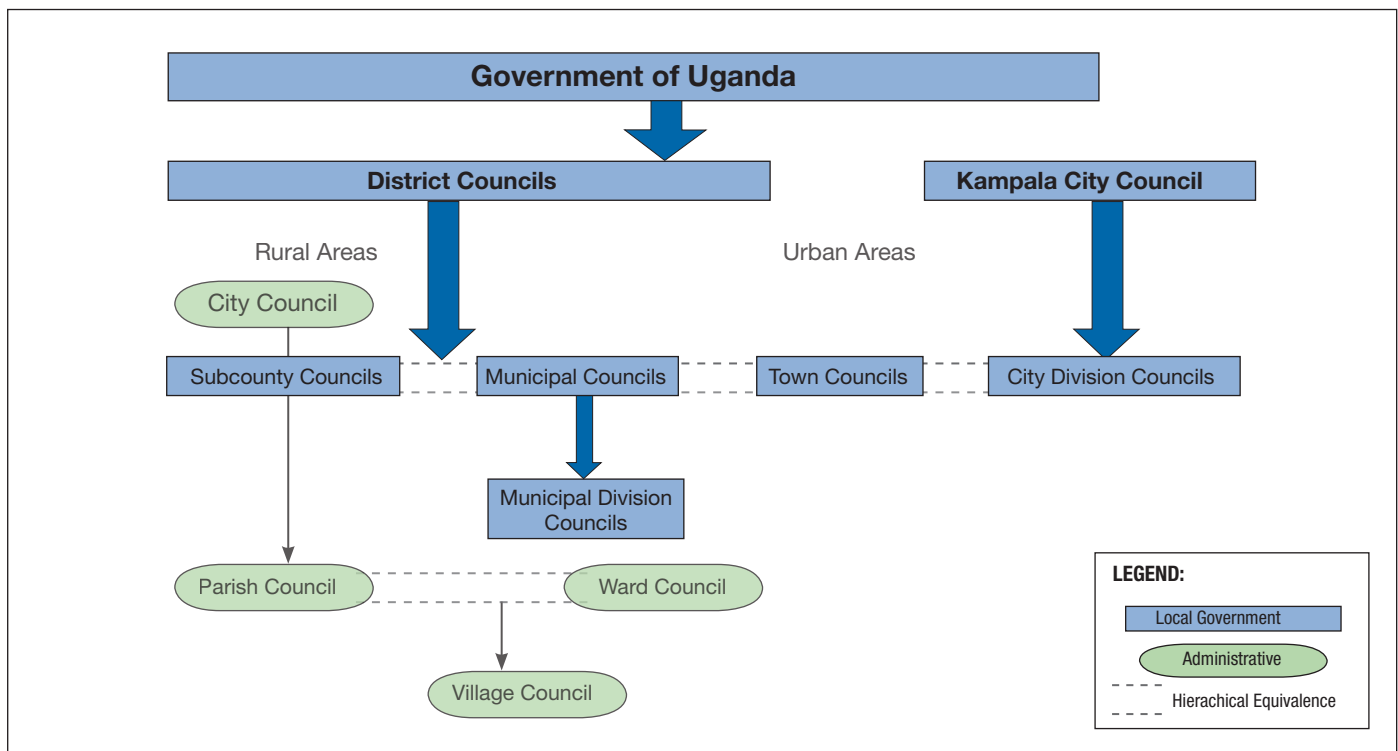
operators do not exist, whereas in Kampala city and all but one municipality, water supply is provided by the national utility NWSC.

The decentralized Ugandan system is a complex construct in which the names of equivalent councils differ between rural and urban areas. Moreover, administrative and local government units can have names that imply a clear hierarchy, which may not exist in practice due to their very different roles and responsibilities. For instance, in rural areas counties with “county councils” are an administrative unit, whereas sub-counties with their “subcounty councils” are a local government unit. The former have few direct powers over the latter, which are the real executive government organs. In urban areas, the administrative counties and their

“county councils” do not exist at all, and the equivalent of the local government subcounty council is called either a municipal council or a town council.

Finally, there are two frequently referred to planning units which fall into neither the “local government” nor administrative council category — these are the so called “town boards” and the smaller, more marginal “rural growth centers”. Neither of these is an independent body corporate, instead both are gazetted planning areas with a rural sub-county i.e. under the responsibility of a sub-county council. Town boards are usually small rural towns of up to 5,000 inhabitants, whereas rural growth centers are smaller rural conglomerations.⁵⁵

FIGURE A1: UGANDA’S DECENTRALIZED POLITICAL STRUCTURE



⁵⁵ The term “local council” is a collective term for all local government and administrative councils. The term “urban council” is a collective term for all urban local government councils including city council, municipal council, city and municipal division councils and town council. See Local Government Act 1997, Part I, 1 (h), (s)

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