Government of Uganda
Ministry of Water and Environment

Water and Sanitation Sector Performance Report 2007

September 2007

Foreword

The Water & Sanitation Sector Performance Report is an annual flagship publication of the Ministry of Water and Environment, the Government entity with overall responsibility for the provision of safe water and sanitation services to the people of Uganda and coordinates the activities of all agencies and entities working in the sector.

This report provides a comprehensive overview of the sector's performance for the 2006/07 Financial Year for all the sub-sectors (Rural Water and Sanitation, Urban Water Supply and Sanitation, Water for Production and Water Resources Management). It gives the latest coverage estimates for water supply and highlights policy and operational issues that need priority attention to improve physical and fiscal performance.

The report has been prepared internally by ministry staff through a highly participative process that is indicative of further institutionalization of the whole process of sector performance monitoring. The agreed sector performance framework with 10 key golden indicators has been used in the data analysis for the report. A long list of annexes is included in the report to support the analysis made and also as testimony to the further enhanced transparency in the sector.

Some of the major challenges faced by the sector which are highlighted in this report include the need to expedite implementation of the recently approved new structure for my ministry to ensure availability of adequate capacity for implementation of planned activities. There is also need to review the criteria for allocation of available funding between the different sub-sectors for achievement of national sector priorities which are vital for poverty eradication. Thirdly, we also need to improve the regulation of the use of our water resources (including waste discharge) in order to safeguard the environment. As we are all aware, environmental sustainability is the most important way to address/mitigate the effects of climatic change, like the severe flooding which has now occurred in many areas of the country.

On behalf of the Government of Uganda, I pledge our resolve to work with the various District Local Governments and Town Councils to meet the International and National goals for water and sanitation and the needs of our people. I want to take this opportunity to thank all sector Development Partners for their support which has been instrumental for many of the achievements in the sector, the Ministry staff, NGOs and all other sector stakeholders that contributed to the development of this report in one way or another.

I am confident that this report will go a long way in informing the people of Uganda and the International community about the current situation of Uganda's water and sanitation sector.

Hon. Maria Mutagamba

Minister for Water and Environment

Executive Summary

Introduction: This is the fifth Water and Sanitation Sector Performance Report (SPR) for Ugandan Water and sanitation Sector. The **2007 SPR** provides a comprehensive overview of the sector for the financial year 2006/7 and analyses sector performance, draws together data and analysis with respect to urban and rural water supply and sanitation, water for production and water resources management. The report also gives several examples of best practices thus providing the reader with insights into some of the exiting innovations that are being undertaken by communities, local Governments and NGOs in the Ugandan water and sanitation sector.

The 2007 SPR has been produced by the Ministry of Water and Environment with major inputs from the Environmental Health Division of Ministry of Health, Ministry of Gender, Labour and Social Development, the Ministry of Education and Sports, WASH Cluster NGOs (mainly working on emergencies in Northern Uganda), and the Uganda Water and Sanitation NGO Network (UWASNET).

Sector Finance: The Water and Sanitation sector had a total budget allocation of UGX 143bn for the FY2006/07 of which UGX 125bn was released by MFPED and UGX 121bn was spent. The budget allocations between sub sectors (excluding donor funds of UGX 47bn to NWSC) was 54% for Rural Water, 29% for urban, 7% for Water for Production, 7% for Water Resources Management and 3% for institutional support. NGO/CBOs members reported investments of UGX 9bn between Jan and Dec 2006 and WASH Cluster NGO/CBO Members who provide emergency water supply and sanitation in the north reported an investment of UGX 24 bn between Jan 2006 and Aug 2007.

Rural Water and Sanitation Sub sector: The total expenditure in FY 2006/7 in sub-sector was UGX 42.1 billion (DWSCG + Support to rural water + School/community sanitation/IDP + energy for rural transformation). The population served through the DWSCG was 643,826, resulting in an overall cost per new person served of UGX 65,390 (US$ 38). This is within the target figure of US$40.

It is recommended that the allocation formula for district conditional grants be reviewed to take into consideration the needs of the least served districts/ water stressed areas, with high per capita investment costs, that continue to lag behind other districts over the years.

Urban Water and Sanitation Sub-Sector:

Small towns: 9 small towns piped water supplies and RGCs were completed in FY 2006/7 serving a design population of 71,135 at a cost of UGX 7.1bn. The average per capita investment was UGX 98,5389($58) which was within the target per capita investment of $75.

Large towns: Out of a total requirement of UGX 9 billion from the GoU, funds allocated amounted to only UGX 2.4 billion, a quarter of the total requirement. This impaired the implementation of projects and resulted in a number of unpaid certificates for contractors. Despite Government funding shortfalls, Gaba III and Entebbe Water Supply Projects were completed during FY 2006/07. The production capacity in Kampala increased by 80,000 m^3 of water per day, while in Entebbe, it increased by about 12,000 m^3 per day. The water supply to the areas, which had intermittent supply especially in the north eastern Kampala areas of Namugongo and Kyaliwajala has subsequently improved.

Water Resources Sub-Sector: The water resources sub-sector reform study estimated the financial requirements for implementation of water resources activities over a 10-year period at US$ 60.71 million. This translates to a funding requirement of UGX 10 billion per year. Currently, the sub sector gets an average of UGX 6.5billion per year, which is only 7% of the total sector budget.

The water resources management department has experienced a funding shortfall over the FY 2006/07. Out of the expected GoU and Donor financing of UGX 6.4billion, 4.5bn was

released. The financing trend for WRM activities has generally been on the decline since starting period of SWRMD in 2003.

Permit issuance and compliance monitoring were prioritised in 2006; out of target of 100 permits, 69No. were issued; 102 permit holders were monitored for compliance against a target of 110. Ground water mapping in six districts of West Nile and the exercise is ongoing in 16 Districts of Eastern and Western Uganda.

The low water levels at Jinja have persisted and therefore release at Jinja Power dam was kept constant at 750 cumecs; this is still slightly over the release curve value of 740 cumecs at the current water level.

Massive algal blooms have been experienced on the shorelines of Lake Victoria since February 2007. Algal blooms are a symptom of eutrophic lakes and tend to become more frequent with global warming as a result of climate change.

Analysis of municipal effluents from wastewater treatment facilities in all the large towns under NWSC revealed low compliance to national standards. 223 data sets for 2006/7 for BOD, phosphorus and total suspended solids were analysed and compliance to wastewater standards was found to be 12%, 26% and 40% respectively.

Some of the analytical equipment procured ten years ago under the Water Resources Assessment Project (WRAP) for the laboratory in Entebbe has broken down and needs replacement.

Given the high demands on water resources in Uganda, and the demands on the new Directorate of Water Resources Management, there is urgent need to strengthen the new Directorate with resources (financial and human) to enable them perform the function, especially regulation and compliance monitoring and IWRM, which are currently inadequate. Furthermore, the analytical capability of the laboratory should be up-graded to be able to analyze parameters with health implications in water like algal toxins, organics and toxic metals.

Water for Production Sub-Sector: In FY 2006/07 a total of UGX 5.14 billion was released for Water for Production activities. The following was achieved: 6 windmill powered borehole installed, 2 valley tanks completed, Studies for bulkwater supply: in the water stressed districts of Nakasongola and Rakai completed, and 14No. feasibility studies were completed.

The total storage capacity created during the FY 2006/07 was 52,400 m^3 against a planned storage of 341,000m^3 . This shortfall was due to insecurity in Karamoja which caused the suspension of reconstruction of Kailong dam in Kotido District and completion of Kulodwong dam in Abim District.

Investment Requirements All four sub-sectors (rural, urban, water for production and water resources) are constrained in meeting their targets by lack of resources. Consolidation of the sector investment plans is in progress and will guide the sector on the overall deficits.

Sanitation and Hygiene: The national latrine coverage stands 59%; a slight improvement from 58% of June 2006. The pupil: stance ratio stands at 69:1 as at June 2007 compared to the 61:1 in June 2006. Sample surveys in districts indicate an average of 60% of sanitation facilities had handwashing facilities.

Sanitation activities were carried out from 15th to 21 March 2007 for the Uganda National Hygiene and Sanitation Week under the theme "Total Sanitation, Is Your neighbour Killing You". The activities were implemented jointly by district water, health, education departments, and NGOs. These included Involving Religious & Cultural Leaders, Regional celebrations in Kawempe, Lira, Tororo & Rakai, Parliament Photo Exhibition, National Sanitation Song Competition, Student National Essay Competition, Special Sanitation Magazine publication.

The service coverage for sewerage services as at June 2007 was about 7%. Despite the introduction of a new simplified sewerage connection policy in the FY 2006/07, new sewer connections have remained very low at about 250 per annum. The major reason for the low sewer connection rate is the limited sewerage network coverage, and the reluctance of customers to connect to the sewer system due to the fact that most of them already have on-site sanitation facilities. In the case of Small towns, the high investment costs for sewerage remains a limiting factor and poses a challenge due to its competition for limited resources with water supply.

The sector recommends a spirited revitalisation of the KDS as a key platform for raising the profile of hygiene and sanitation at all levels. Finalisation of study on establishing a budget line for sanitation within local governments is key to raising the sanitation coverage across the country.

Training and Capacity Building: The sector continued to invest in training and capacity building for both the central government and local government personnel involved in the implementation of Water and Sanitation activities at various levels. These include short tailor made courses, graduate and post graduate academic programs at local universities, and field attachments for fresh graduates of engineering and social sciences.

Performance measured against the "golden" indicators

The table below provides a summary of the sector performance against ten *golden* indicators.

Indicator		Achievement			Target	
		2004/5	2005/6	2006/7	2006/7	2014/15
1. Access % of people within 1.5 km (rural) and 0.2 km (urban) of an improved water source	Rural	61.3%	61%	63%	62%	77%
	Urban	Data not combined	51%	56%	75%	100%
2. Functionality % of improved water sources that are functional at time of spot-check	Rural	82%	83%	83%	85%	90%
	Small Towns	No data	93%	82%	90%	95%
	WfP	No data	No data	35%	Targets to be set.	
3. Investment Average cost per beneficiary of new water and sanitation schemes (US$)	Rural	$31	$35	$38	$40	$40
	RGCs	$56	No data	No data	$55	$50
	Small Towns	$72	$93	$58	$75	$75
4. Sanitation % of people with access to improved sanitation (household and schools).	Rural HHs	57%	58%	59%	62%	77%
	Urban HHs	No Data	No Data	No Data	92%	100%
Pupil to latrine/toilet stance ratio in schools		57:1	61:1	69:1	40:1	40:1
5. Water Quality % of water samples taken at the point of water collection, waste discharge point that comply with national standards.	Protected (e. coli)	Sample data only			95%	95%
	Treated (e. coli)	No data	95%	95%	100%	100%
	Treated (colour)	No data	No data	69%		
	Wastewater: - BOD - Phosphorus - Total suspended solids	No data	No data	12% 26% 40%	Targets to be set.	
6. Quantity of Water % increase in cumulative storage capacity of water for production.		0	1.3%	1%	3.1%	3.1%
7. Equity Mean *Sub-County* deviation from the District average in persons per improved water point.	Rural	These are District local Government level targets.				

Indicator		Achievement			Target	
		2004/5	2005/6	2006/7	2006/7	2014/15
8. Handwashing % of people with access to (and using) hand-washing facilities.	HH	No data	No data	14%	23%	50%
	Schools	No data	No data	41%	Targets to be set.	
9. Management % of water points with actively functioning Water & Sanitation Committees/Water Boards.	Committees	No data	No data	63%	Targets to be set	
	Boards	No data	o data	No data	Targets to be set	
10. Gender % of Water User committees/Water Boards with women holding key positions.	Rural	No data	No data	87%	Targets to be set.	
	Urban	No data	21%	18%	Targets to be set.	
	WFP	No data	No data	No data	Targets to be set.	

Access to improved water supply: Access to improved water supplies in rural areas increased from 61.0% in FY 2005/6 to 63.1 in FY 2006/07 (assuming 100% functionality). Investments into source improvements are not keeping ahead of rural population growth (3.3%). It has been estimated that access to water within 1km is 56.1% and within 0.5km is 39%. When analysis of access is done at the lowest appropriate level (village), the best estimate of access is obtained. ***There is a need to obtain more detailed information from districts and NGOs at planning and reporting stages. This will entail among other measures to map all point water sources at village level and obtain population figures from UBOS at village / parish level to better estimate access.***

Access to functional water sources varies considerably between Districts (from 12% to over 95%). Despite the increased expenditure of the sector grant, the outputs are not able to keep up with population growth from F/Y 2003/4. If the grant does not increase considerably, and per capita expenditure trends continue, the DWSCG ("business as usual approach") will not enable the national PEAP targets to be met. The ten least served sub-counties and districts in 2005/06FY were still in least served in 2006/07FY. Analysis during FY 2006/07 showed that the per capita investment costs in the least served /water stressed areas is higher than in the best served districts because the cheap options (spring protection, shallow wells) are not feasible, and thus the only options are either deep borehole drilling or rainwater harvesting which have higher per capita costs. In some water stressed areas, large scale piped water systems are the only option of raising access. ***It is recommended that the total DWSCG is increased, and special targeted programmes for water stressed areas and the perpetually least served districts be designed and implemented.***

Access to improved water supplies in urban areas is estimated at 56%. This suggests an increase of 5% from last year. This change arises in part due to a difference in the scope of the source data used for Small Towns in 2006/7 and 2005/06. The major difference is that this year, the estimate is based on data for 149 small towns and RGCs whereas the data source for 2005/06 was based on 167 towns. Access to improved water supplies in towns ranged from 5% to 95%.

More effort should be made in obtaining data for coverage for all the 149 small towns as well as for indicators of functionality and investment costs so as to improve on the indicator measurement.

Functionality of improved water supplies: The average national functionality rate of rural water supplies has stayed the same, at 83%, for the last two FYs (2005/06 and 2006/07). On average, functionality rates are lowest for valley tanks. In order to improve functionality, the DWD/MWE has continued to disseminate the Operation and Maintenance Framework and made a provision in the sector guidelines to District local Governments for budgeting up 12% on software activities. A follow up of the functionality of the established supply chain was also done in districts; the results show that 38% of districts have improved

their functionality while 66% have functionality levels above the national average of 83%. Improved functionality is partly attributed to rehabilitation work undertaken during the FY 2006/07, and partly due to increased expenditure on software activities (7% of total grant was spent on software activities).

There is need for the sector to monitor quality of construction of water facilities through strengthening monitoring and supervision, procurement, and enforcement of regulation of service providers (Contractors and consultants). There is a further need to review the Policy pertaining to Community Based Maintenance System (CBMS) particularly for domestic water facilities. Voluntarism by caretakers and source committees is not tenable in the long run.

In the case of water for production facilities, the main reasons for the reduced functionality are siltation followed by mechanical problems (primarily pump breakdowns). Rehabilitation of these facilities should be considered as opposed to construction of new facilities in the same areas.

Investment Costs. The per capita cost of providing improved water to people in rural areas is US$ 38. This figure includes both central and DWSCG expenditure. Per capita costs vary between Districts. Analysis this year shows that technology mix has the greatest impact on per capita investment costs. The steady increase in per capita costs is due to a marked reduction in the availability of low cost options (springs and shallow wells), increased expenditure on overheads (in part as a result of the creation of new Districts; 36% of the grant in new districts was spent on start up costs of these new districts), increase in the cost of other resources (eg fuel, construction materials) as well as the increase in proportion of the total grant spent on borehole drilling. The funds spent on Gravity Flow Schemes and Rural Growth centres distort the annual investment cost because these schemes are constructed over multiple financial years and the people served are only reported when the schemes are complete.

In order to reduce per capita costs, the following is recommended:

- ***encourage procurement of larger drilling contracts involving a cluster of Districts to exploit economies of scale. This has to be explored with Public Procurement and Disposal of Assets Authority.***
- ***The Sector should invest in large schemes that can serve many people and have economies of scale.***
- ***The potential for alternative low-cost water supply options such as household water treatment or infiltration galleries should be studied.***
- ***In order to enable individual Districts to meet the PEAP targets, the allocation mechanism for the grant to districts and allocation of released grant within districts needs to be reviewed to target the least served.***

NWSC is able to cover its operating costs plus depreciation leaving an operating profit. The cross subsidy arrangement allows NWSC to keep in operation the schemes which do not break even on their own.

Water Quality.

Although the National Water Quality Management Strategy has placed the responsibility of carrying out routine water quality monitoring on the districts, water quality monitoring in districts is still insufficient and data still scarce. In 2006/7, only 1% of the DWSCG was spent on water quality monitoring.

Iron removal plants piloted in 5 districts for boreholes with excess iron in ground water showed promising results (up to 95% iron removal).

NWSC is responsible for the provision of water and sewerage services in 22 large urban towns in Uganda. Analysis of municipal effluents from wastewater treatment facilities in all

the large towns under NWSC revealed low compliance to national standards. 223 data sets for 2006/7 for BOD, phosphorus and total suspended solids were analysed and compliance to wastewater standards was found to be 12%, 26% and 40% respectively. The performance of wastewater treatment plants run by NWSC in all the towns has always been poor over the period 2004-2006.

The non-compliance to wastewater standards from the wastewater treatment plants is polluting water bodies especially L. Victoria from which raw water for the large towns is abstracted. NWSC is therefore, itself partly responsible for the high cost of water treatment it incurs as a result of deteriorating water quality of L. Victoria.

The scarcity of water quality data on rural drinking water sources resulting from lack of systematic monitoring of water supplies needs to be addressed urgently in order to be able to make a general assessment of the state of drinking water sources countrywide. It is recommended that implementation of the water quality management strategy be accelerated to addressed this shortfall.

It is recommended that low cost technologies for treatment of poor water quality is promoted at household level.

In order to enforce wastewater discharge regulations, key sector partners like NWSC should set the good example of compliance. This may entail increased investment in the wastewater treatment plants to meet the demands of the increasing populations. Political support in enforcement of regulations is also hereby enlisted.

Water Quantity/Water for Production. The total storage capacity created during the FY 2006/07 was 52,400 m^3. The current cumulative storage is only meeting 48% of the water demands. Unless the level of investment is increased the targets for storage for water for production will never be met. ***It is recommended that investment into the water for production sub-sector is increased. In addition, farmers should be supported to improve their own water for production facilities (through loans, subsidies of equipment, technical advice).***

Equity. Data generally indicates that districts with high coverage have fairly equitable distribution of improved water sources. A total of 20 districts have an equity score of less than 100, which implies good equitable distribution of water points between sub-counties.

Districts should be taking equity into consideration to a greater extent when allocating resources for rural water supplies. This should be done when revising the formula for allocation of conditional grants between districts and within districts. There is regional disparity in the number of small towns served with piped water supplies. The northern part of Uganda is considerably worse off than the west. ***There is a need for a dedicated programme / facility for piped water supply systems for Northern Uganda to meet the needs of the returning populations in addition to a conditional grant for rural water and sanitation***

Implementation of the pro poor strategy seems to have stalled and thus needs re-invigoration especially water for the urban poor.

Management.

Field visits by MoWE and MoGLSD were undertaken jointly with district officials in 14 districts throughout Uganda. On average, 63% of WUCs were reported to be functional. Kamuli reported the highest percentage of functioning WUCs (91%) while Iganga reportedly had the lowest percentage of functioning committees (20.4 %). About 52% of the WUCs reported that they had received training.

In the case of small towns; 57 towns are managed by private operators and supported by the Water Authorities division of the Directorate of Water Development; 44 towns supported

under the South Western Umbrella Organisation management structure; 32 towns registered for support under the new Umbrella Organisations in Eastern Uganda and Rwenzori region.

There is need for systematic follow-up of the impact of community training to be done by the local governments and the centre. DWD needs to guide the districts to undertake evaluation of the training activities to be able to achieve the desired results.

There is still need for universal metering in all schemes(RGCS, Small Towns and GFS) so that proper water balancing for water consumed is done. This will also help in effective and good calculations when and after setting adequate water tariffs for these systems.

Water quality monitoring is still a problem for regional Umbrella secretariats. The laboratories need to be operational and well equipped with proper equipment to serve a specific region. It is estimated that each laboratory should serve averagely 11 districts.

There is need for regular training in managerial, financial and technical issues for WSSBs and Operators by the various regional umbrella secretariats and the Water Authorities Division of the Directorate, at least twice a year.

Gender.

The purpose of gender mainstreaming is to ensure that women and men, girls and boys are able to move out of poverty and achieve improved and sustainable livelihoods.

Progress on gender mainstreaming in the Water and Sanitation Sector for the financial year 2006/2007 was based on field visits to 49 communities in 16 districts; review of PAF monitoring report for financial year (FY) 2006/7; and a case Study report assessing the application of the Gender Mainstreaming Strategy, produced in financial year (FY) 2006/7. The findings were as follows: 87% of the WUCs were found to have at least one woman holding a key position, the majority (30) being treasurers. The majority (92.3%)(n=26) of the trained hand pump mechanics in the 12 case study districts were men. There were very few gender related activities included in the district workplans.

Of the 12 Eastern Umbrella Organisation executive committee members, one is female and holds the position of Vice Chairperson. In the Western Umbrella Organisation executive committee, two out of nine members are women, both holding key positions namely those of Vice Chairperson and Treasurer.

There is still need to emphasise and implement gender mainstreaming activities at the centre and the district level. Planning and budgeting guidelines need to be reviewed to ensure that districts devote resources to this software indicator.

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List of Abbreviations

ADB	African Development Bank
BFP	Budget Framework Paper
CBO	Community Based Organisation
Cu.mec	Cubic metres per second
DFID	Department for International Development
DHI	District Health Inspector
DWD	Directorate of Water Development
DWRM	Directorate of Water Resources Management
DWO	District Water Office(r)
DWSCC	District Water and Saniation Coordination Committee
DWSCG	District Water and Sanitation Conditional Grant
EHD	Environment Health Division (of Ministry of Health)
ED	Earth Dams
FDS	Fiscal Decentralisation Strategy
FP	Fish Ponds
FY	Financial year
GFS	Gravity Flow Scheme
GoU	Government of Uganda
HIASS	Health Inspectors Annual Sanitation Survey
HSSP	Health Sector Strategic Plan
HWF	Hand Washing Facility
IDAMC	Internally Delegated Area Management Contract
IDP	Internally Displaced Persons
JPF	Joint Partnership Fund
JSR	Joint Sector Review
JWSSPS	Joint Water and Sanitation Sector Programme Support (2008 – 2012)
KCC	Kampala City Council
LG	Local Government
LGDP	Local Government Development Programme
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MDG	Millennium Development Goal
MFPED	Ministry of Finance, Planning and Economic Development
MIS	Management of Information Systems
MoES	Ministry of Education and Sports
MoGLSD	Ministry of Gender Labour and Social Development
MoH	Ministry of Health
MTEF	Medium Term Expenditure Framework
MWE	Ministry of Water and Environment
MWLE	Ministry of Water Lands and Environment (former)
NACES	National Advisory Committee on Ecological Sanitation
NEMA	National Environmental Management Authority
NFA	National Forestry Authority
NGOs	Non-Government Organisations
NBI	Nile Basin Initiative
NWSC	National Water and Sewerage Cooperation
O&M	Operation and Maintenance
PAF	Poverty Action plan
PEAP	Poverty Eradication Action Plan
PPDA	Public Procurement and Disposal of Assets Authority
PRGC	Rural Growth Centre

RWSS	Rural Water and Sanitation
SIP	Sector Investment Plan
SIM	Sector Investment Model
SPR	Sector Performance Report
SWAp	Sector Wide Approach
SWRMD II	Support to Water Resources Management II
ToR	Terms of Reference
TSU	Technical Support Unit
UfW	Unaccounted for Water
UGX	Uganda Shillings
ULGA	Uganda Local Governments Association
UWASNET	Uganda Water and Sanitation NGO Network
UWR	Urban Water Reform
UWSS	Urban Water Supply and Sanitation
VfM	Value for Money
VT	Valley Tank
WfP	Water for Production
WRMD	Water Resources Management Department
WSS	Water Supply and Sanitation
WSWG	Water Sector Working Group
WUC	Water User Committee

Exchange Rate	US$ 1 = UGX 1,700

Glossary

Terms commonly used in Uganda

Alignment: The arrangement of development partners' activities and systems to a recipient government's priorities and systems, thereby increasing the government's "ownership" of systems and policies to make implementation more effective.

Basket Funding: Aid finance flowing from a joint development partners' account, kept separate from other funding for the same (sub-) sectors. Transfers are not made through the government systems and in effect the basket funding is a collection of projects. The Joint Partnership Fund (JPF) is an example in the water sector of basket funding using on-budget project modalities.

Consolidated Fund (CF): the consolidated fund is the main treasury account where all government and external funds are received. Funds are then allocated according to approved budgets to the ministries and via fiscal decentralisation mechanisms to the local governments.

Development Partner (DP): Bilateral, multilateral and international organisations and agencies providing support to Uganda.

(Earmarked) Sector Budget Support: Financial support, channelled through the Government of Uganda's Budget that is notionally earmarked to a specific sector or sub-sector. This includes budget support earmarked to specific sectors in the Poverty Action Fund e.g. water. Transfers are made through the government systems. In the water sector earmarked sector budget support includes support provided via the CF and PAF to the District Water and Sanitation Conditional Grants (DWSCG) (several donors are providing funds in this way) and also to support that is directed to the Ministry of Water and Environment (MWE) at central level (although there is no DP presently using this channel). Note earmarked sector budget support and sector budget support are the same for the water /health/ education sector as all sector expenditure is under the PAF:

General Budget Support (GBS): Financial support given directly to the government budget, with no earmarking of funds but accompanied with dialogue with the Government of Uganda (GoU) around the implementation of the Poverty Eradication Action Plan (PEAP).

Harmonisation: Coherence of approaches, systems or policies between development partners with the aim of reducing transaction costs.

Lead Development Partner: In any given sector/area, there are a range of leadership functions that can be taken on by DPs. This role may be undertaken by one or more partners. Functions include acting as the main liaison with Government in policy dialogue and advocacy. The role of the leading development partner will depend on the agreements reached with Government and other development partners in the sector/area, but may include the following: acting as the main liaison with Government in policy dialogue and advocacy, facilitating funds and aid management, ensuring that joint reviews, monitoring and reporting take place following agreed formats, providing services to other development partners (information, communication and technical advice) and/or monitoring development partners' performance. Some of these functions are currently managed by the chairs of DP sector groups.

The **Medium Term Expenditure Framework (MTEF)** is a three-year rolling budget framework used to guide public-sector resource allocation, including aid. At the beginning of the budget process, sectors are provided with medium-term resource ceilings, which, in aggregate are consistent with the achievement of macroeconomic objectives. Sector working groups allocate these ceilings to institutions within the sector over the medium term, and consistent with the achievement of sector policy objectives. These allocations are articulated in the Budget Framework Paper (BFP), which represents the Government's medium term

budget strategy. The first year of the MTEF forms the basis of the annual budget allocations, which are voted by parliament.

On-budget aid refers to Aid that is included in the Medium Term Expenditure Framework (MTEF) and presented in the GoU budget estimate books. This includes aid that flows through government systems (such as general, sectoral and PAF budget support), as well as other programme aid and projects that are reported to GoU and that the Minsitry of Finance, Planning and Economic Development (MoFPED) considers should be included in the MTEF and the official budget presented to Parliament. This second category of on-budget aid includes Technical Assistance(TA) and basket funds that support GoU activities and institutions whose budgets are included in the MTEF and official estimate books. On budget aid falls under the sector ceiling.

Off-budget aid: Aid that is not reported in the MTEF and budget estimate books of the GoU. This is either because it is not reported to the GoU, or because it is not related to institutions included in the MTEF and the official budget estimates of the GoU. This might include some aid to local governments, as well as support to parastatals and NGOs, although many DPs do provide information on such aid to MOFPED. Off- budget aid does not fall under sector ceilings.

Poverty Action Fund (PAF): Established by the GoU in 1998 under the Medium-Term Expenditure Framework (MTEF), the PAF is a virtual ring-fenced fund aimed at protecting resources for key poverty reducing areas including water, health, education and rural infrastructure among others. Initially it comprised debt relief savings with additional support from development partners and the Government of Uganda. Transfers are made through the government systems. Department for Inetrnational Development, UK (DfID) for example are providing substantial funds through this channel.

Poverty Action Fund (PAF) Budget Support: Budget support notionally earmarked to expenditures within the Poverty Action Fund areas, but not earmarked to any specific sector. Transfers are made through the government systems.

Project support: Project support refers to assistance that is not channelled via the government systems but which can be on-budget (i.e. within the ceiling) or off-budget (i.e. outside the ceiling).

Sector Ceilings: These are the upper limits that each sector can spend. The ceilings include all on-budget DP finance. DP finance to a particular sector will not necessarily raise the sector ceiling. Sector budget support will not therefore, generally speaking, increase the sector ceiling and is therefore not additional. Sector earmarking is only notional because with the strict imposition of sector ceilings, earmarking only means offsetting of the government budget so that the originally desired sector expenditure is obtained.

Sector Working Group (SWG): Comprising stakeholders from GoU institutions within a sector, civil society organisations and development partners, SWGs meet to agree sector budget submissions and new projects proposed for the sector, as well as to review sector performance and to deliberate on key sectoral policies.

Uganda Development Partner Division of Labour exercise: An exercise, agreed by the GoU and DPs, to improve DP selectivity, promote key Partnership Principles and achieve greater efficiency and effectiveness in the delivery of aid in Uganda.

Uganda Joint Assistance Strategy (UJAS): The strategic response of key development partners to the PEAP. The UJAS builds on the Government's partnership principles and focuses external assistance on the revised PEAP.

Undertaking: Strategic actions agreed on in the joint Sector Review to be undertaken by the sector, ideally within a 12-month period (in time for the subsequent JSR).

WASH Cluster: Group of mainly humanitarian NGOs working in North and North-eastern Uganda which is coordinated by UNICEF

CHAPTER 1
Introduction

"Clean water and sanitation is to diarrhoea what immunisation is to killer diseases such as measles or polio…globally, diarrhoea kills more people than tuberculosis, malaria or HIV/AIDS" (UNDP, 2006).

A woman proudly cleans her hands at a 'tippy-tap' in Bugiri District

1.1 INTRODUCTION

This is the fifth Water and Sanitation Sector Performance Report for Uganda. The **2007 Water and Sanitation Sector Performance Report** provides a comprehensive overview of the sector for the financial year 2006/7 and analyses sector performance. The report draws together data and analysis with respect to urban and rural water supply and sanitation, water for production and water resources management.

The report enables sector stakeholders to assess the performance of the sector and provides a basis for discussion, decision-making and actions for the necessary improvements in the sector. The report provides a transparent and credible system for analysing the effects of sector resource expenditure and allocation. It also assists in the assessment of the effectiveness of current water and sanitation policies and practices so that they can be improved.

This report draws together more comprehensive data and improved analysis than that of the previous year. In addition to the overview of the sector finance and achievements, it provides in-depth understanding based on the agreed prioritised set of ten golden indicators. Table 1.1 provides a summary of the golden indicators. The indicators link the water and sanitation sector to the Poverty Eradication Action Plan (PEAP) and link local Government resource allocations to sector performance.

This year, several examples of best practices are included in the report. This provides the reader with insights into some of the exiting innovations that are being undertaken by communities, local Governments and NGOs in the Ugandan water and sanitation sector.

The report is structured as follows: Chapter 1 provides an introduction. Chapter 2 gives an overview of the sector in terms of the policy and institutional framework and sets out progress of the 'Undertakings' from the 2006 Joint Sector Review. Chapter 3 presents an overview of the sector investments as well as an analysis of investment costs and reports on the 'value for money' golden indicator. Chapter 4 summarises the achievements and issues regarding water resources management. Chapter 5 focuses on the rural and urban water supply and sanitation as well as water for production achievements by central Government, District local Government and NGOs. Training, HIV/AIDS and Poverty Action Fund (PAF) monitoring are also included chapter 5. Chapters 6 - 13 set out the progress against the sector with respect to the nine remaining golden indicators, which are outlined in Table 1.1. Information on both the hygiene and sanitation indicator is given in Chapter 8. Examples of good practices are included in the golden indicator chapters.

1.2 SECTOR PERFORMANCE MEASUREMENT FRAMEWORK

The document titled "*Uganda Water and Sanitation Sector Performance Measurement Framework*" (MWLE, 2004b) sets out the present system for analysing performance measurement using 10 key performance themes for the water and sanitation sector (Figure 1.1).

The Sector Performance Report (MWLE, 2004c) had detailed analysis of performance based on eight '*golden*' indicators for the sector. Two more 'golden' indicators were added in 2005, bringing the total to ten (Table 1.1). Additional performance indicators (under the golden ones) are also utilised by each sub-sector for more in-depth analysis.

Figure 1.1 Key Performance Themes for the Water and Sanitation Sector

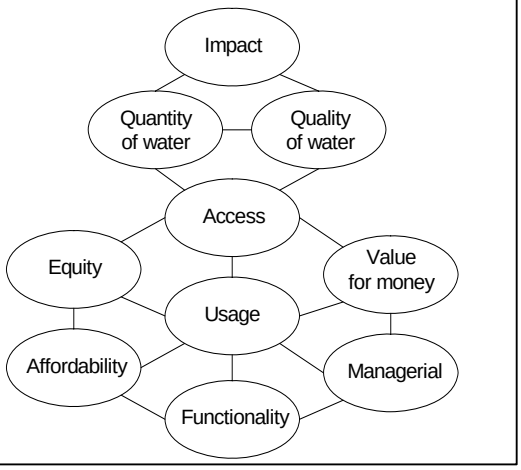


Table 1.1 Water and Sanitation Sector golden indicators

Performance Theme	Golden indicator
Water access	% of people within 1.5km (rural) and 0.2km (urban) of an improved water source
Functionality	% of improved water sources that are functional at the time of a spot-check
Value for money	Average investment cost per beneficiary of new water and sanitation schemes
Sanitation access/use	% of people with access to (and use of) improved and basic latrines / toilets
Quantity of water	% increase in cumulative storage capacity of water for production
Water Quality	% of water samples taken at the point of collection or discharge that comply with national standards
Equity	Mean parish deviation from the district average in persons per improved water point
Hygiene access/use	% of people with access to (and use of) hand-washing facilities
Gender	% of water and sanitation committees where at least one woman holds a key position
Community management	% of water points with actively functioning water and sanitation committees

The overall progress measured against the ten Golden Indicators is presented in Table 1.2.

1.3 AIM OF SECTOR PERFORMANCE REPORTING

The overall objective of a comprehensive sector performance monitoring system is to improve the sector's fiscal and physical effectiveness to more efficiently achieve its' targets and thereby contribute to poverty eradication and better health for Ugandans. The performance analysis highlights opportunities for improvements in the delivery of services. Specifically, the water and sanitation sector performance reporting aims to:

- Collate, analyse and synthesise key information on the performance of the sector [1] as basis for planning and budgeting, discussion, further analysis and action;
- Assess the effectiveness of water and sanitation policies and improve them;
- Identify good and poor performance and strengthen mechanisms for identifying underlying causes;
- Provide a credible system for arguing for more or adequate resources for the sector and for a more effective resource allocation between sub-sectors;
- Support implementation of sector reforms, to further improve efficiency, effectiveness and performance.

1.4 REPORT PRODUCTION PROCESS

The 2007 Sector Performance Report was prepared by staff of MWE/DWD/DWRM, NWSC, MOH/EHD, MGLSD as well as UWASNET. Sub-sector teams (with members from the above central ministries and UWASNET) collected data from the field where necessary, did preliminary data analysis and thereafter compiled respective sub-sector performance reports.

A DWD/DWRM senior management team provided quality assurance and synthesised the information for this main report, discussed the findings and developed the major conclusions and recommendations.

[1] including operational monitoring, value for money review, technical audits, financial tracking studies, evaluation

The Partnership between Government, the private sector as service providers and NGOs in the sector has continued to grow. A case in point is the provision of information obtained from 84 NGOs on their water and sanitation activities (compared to 40 last year). The information from the NGOs was analysed and consolidated through UWASNET (highlighting the improved coordination role being undertaken by this umbrella body). Furthermore, District Water and Sanitation Coordination Committees are increasingly being established in the District Local Governments.

1.5 INFORMATION SOURCES

Several data sources were used for the preparation of the sector performance reports. Details on which sources are included this year are given in Annex 1-1. Among the key data sources are the following:

- **DWD Management Information System (DWD-MIS) and National Water and Sewerage Corporation Management Information System (NWSC-MIS).** These systems include information on water supply and sanitation infrastructure in rural and urban areas.
- **District Work Plans and Reports** set out the plans, budgets, achievements and expenditure under the DWSCG and highlight key issues. The **District Situation Analysis Reports** provide an overview of the water supply facilities as well as management and gender issues for each sub-county within the district.
- **The National Population and Housing Census[2], 2002 (UPHC)** as a source of demographic and socio-economic statistics.
- **The Uganda National Household Survey (UNHS), The Uganda Demographic and Health Survey (UDHS),** and the **Uganda National Service Delivery Survey (UNSDS)** are regular national household surveys which focus on investment outcomes.
- **The Health Inspectors Annual Sanitation Survey (HIASS)** is organized by EHD/MoH. A format with indicators on rural sanitation, urban sanitation, schools, and health units is circulated to all Districts. Data is collected by the DHIs and sub county Health Assistants and compiled for the nation for the Annual Sanitation Conference.
- **The Uganda Participatory Poverty Assessment Process (UPAP)** is based on discussions with 60 communities.
- **Small scale surveys** conducted by NGOs including UWASNET and international organisations (eg UNICEF). Other reports from DWD, MoES and MoH were used.
- **Performance Measurement field visits,** to provide in-depth information for this report, were undertaken by 8 groups (Rural, WfP, Urban, WRM, Sanitation, NGO, and Cross-cutting).
- **Value for Money/Tracking Studies** by MWE monitor and analyse unit costs and processes of special interest (eg procurement). They are regularly carried out for the Districts and the Centre.
- The **2006 Human Development Report (HDR),** published by the United Nations Development Program (UNDP), had some findings on water supply and sanitation. It provides insights into the costs of lack of improved water and sanitation as well as the savings that could be made from achieving the Millennium Development Goal target of halving the proportion of people without access to safe water supplies.

[2] Uganda has carried out population and housing censuses in a modern sense about every 10 years since 1948. The most recent such census was conducted by Uganda Bureau of Statistics (UBOS) in 2002

Table 1.2 Progress against the ten golden indicators

Indicator		Achievement			Target	
		2004/5	2005/6	2006/7	2006/7	2014/15
1. Access % of people within 1.5 km (rural) and 0.2 km (urban) of an improved water source	Rural	61.3%	61%	63%	62%	77%
	Urban	Data not combined	51%	56%	75%	100%
2. Functionality % of improved water sources that are functional at time of spot-check	Rural	82%	83%	83%	85%	90%
	Small Towns	No data	93%[3]	82%	90%	95%
	WfP	No data	No data	35%	Targets to be set.	
3. Investment Average cost per beneficiary of new water and sanitation schemes (US$)	Rural	$31	$35	$38	$40	$40
	RGCs	$56	No data	No data	$55	$50
	Small Towns	$72	$93	$58	$75	$75
4. Sanitation % of people with access to improved sanitation (household and schools).	Rural HHs	57%	58%	59%	62%	77%
	Urban HHs	No Data	No Data	No Data	92%	100%
Pupil to latrine/toilet stance ratio in schools		57:1	61:1	69:1	40:1	40:1
5. Water Quality % of water samples taken at the point of water collection, waste discharge point that comply with national standards.	Protected (e. coli)	Sample data only			95%	95%
	Treated (e. coli)	No data	95%	95%	100%	100%
	Treated (colour)	No data	No data	69%		
	Wastewater: - BOD - Phosphorus - Total suspended solids	No data	No data	12% 26% 40%	Targets to be set.	
6. Quantity of Water % increase in cumulative storage capacity of water for production.		0	1.3%	1%	3.1%	3.1%
7. Equity Mean *Sub-County* deviation from the District average in persons per improved water point.	Rural	These are District local Government level targets.				
8. Handwashing % of people with access to (and using) hand-washing facilities.	HH	No data	No data	14%[4]	23%	50%
	Schools	No data	No data	41%	Targets to be set.	
9. Management % of water points with actively functioning Water & Sanitation Committees/Water Boards.	Committees	No data	No data	63%[5]	Targets to be set	
	Boards	No data	No data	No data	Targets to be set	
10. Gender % of Water User committees/Water Boards with women holding key positions.	Rural	No data	No data	87%[6]	Targets to be set.	
	Urban	No data	21%	18%	Targets to be set.	
	WFP	No data	No data	No data	Targets to be set.	

[3] Definition of functionality for small towns changed. In 2005/6 it was the % of piped water supplies under the Water Authorities Division that provided water to users throughout the year. In 2006/7 it was the % of active connections.

[4] Handwashing with soap after adult defecation.

[5] Based on sample district reports (see chapter 12).

[6] Based on a field sample of 35 communities in 12 districts.

CHAPTER 2

Water & Sanitation Sector Overview

"The economic rate of return in saved time, increased productivity and reduced health costs for each US$ 1 invested in achieving the [Millennium Development Goal] target is US$ 8" (UNDP, 2006).

Children struggling to fetch water in Bugiri District

2.1 INTRODUCTION

This chapter describes the policy, regulatory and institutional framework for the water and sanitation sector development in Uganda. The objectives of the sub-sectors are set out and sector coordination arrangements are explained.

2.2 FRAMEWORK FOR SECTOR DEVELOPMENT

The Government of Uganda put in place the Poverty Eradication Action Plan (PEAP) as a national framework for poverty eradication. The PEAP, which was first prepared in 1997 and revised in 2000 and 2004 (MoFPED, 2004), has adopted a multi-sectoral approach, recognizing the multi-dimensional nature of poverty and linkages between influencing factors. The PEAP objectives are being addressed through various programmes including water and sanitation.

In the revised PEAP, the water and sanitation sector falls under two pillars:

- Pillar 2: Enhancing production, competitiveness and incomes (includes water for production and water resources management) and
- Pillar 5: Human Development (includes rural and urban water supply and sanitation).

2.3 POLICY OBJECTIVES

The overall policy objectives of the Government for water resources management, domestic water supply and sanitation and water for production respectively are as follows:

(i) "To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders" (MWLE, 1999).

(ii) To provide "sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 100% of the urban population by the year 2015 with an 80%-90% effective use and functionality of facilities" (MWLE, 2004a). This is more ambitious than the Millennium Development Goal (MDG) which aims to halve the percentage of people without access to safe water by 2015 in Uganda.

(iii) "Promote development of water supply for agricultural production in order to modernise agriculture and mitigate effects of climatic variations on rain fed agriculture" (MWLE, 1999).

2.4 POLICY AND REGULATORY FRAMEWORK

Government policies and the legal framework that impact on management of the sector are:

Constitution of the Republic of Uganda (1995), The Local Governments Act (2000), The Water Act (1995), and accompanying regulations [Water Resources Regulations (1998), Waste Discharge Regulations (1998), the Water Supply Regulations (1999), Sewerage Regulations (1999)], The National Water & Sewerage Corporation Act (2000), the Uganda Water Action Plan (1995) and National Water Policy (1999), The National Environment Management Policy (1994); The National Environment Act; the Environmental Impact Assessment Regulations (1998); and the National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations (1999), National Environment (Waste Management) Regulations (1999), Land Act (1998), and the upcoming Land Use Policy, National Health Policy and Health Sector Strategic Plan (1999), National Gender Policy (1997).

The policies reflect the socio-economic, development and financial fabric prevailing in present day Uganda with foresight to the future.

2.5 SUB-SECTORS

The water and sanitation sector consists of four sub-sectors: Rural Water Supply and Sanitation (RWSS), Urban Water Supply and Sanitation (UWSS), Water for Production (WFP), and Water Resources Management (WRM). The discussion on WRM is presented in Chapter 4.

2.5.1 *Rural sub-sector*

The Rural Water Supply and Sanitation (RWSS) sub-sector covers all rural communities with populations up to 5000. The 2002 population census estimated the rural population at 21.04 million rising to 24.01 million by 2006 and 32.75 million by 2015. The sub-sector considers two divisions of communities, villages with populations up to 1500 and Rural Growth Centres (RGC) with populations between 1500 and 5000, which number approximately 850.

Generally RGCs are to be served via mechanised water supply systems that may include pumped supply from one or more sources, treatment, storage and limited distribution. Management of the RGC system is through private operators or community formed associations accountable to the District or Sub-county Governments with supervision by the Ministry of Water and Environment.

Water supply in smaller communities is generally via point sources, which consist of deep boreholes and shallow wells fitted with hand-pumps, springs, gravity flow schemes with public taps, and rain water harvesting tanks. The systems are community managed with support from the respective Local Governments and the Ministry of Water and Environment.

The biggest challenge facing the sector is how to serve the water stressed areas where the traditional rural water supply sources cannot easily be implemented. These districts / Sub-counties are lagging behind in coverage and require more expensive technological option which cannot easily be met in the grant. More area specific programmes must now be designed to address this need.

2.5.2 *Urban sub-sector*

The urban water supply and sanitation sub-sector is made up of large towns managed by the National Water and Sewerage Corporation (NWSC), all other small towns and Rural Growth Centres managed with support from DWD.

Large towns are classified as those with populations of 15,000 or more. There are 22 large towns gazetted for operation by National Water and Sewerage Corporation. These are Kampala, Jinja/Njeru/Lugazi, Entebbe, Tororo/Malaba, Mbale, Masaka, Mbarara, Gulu, Lira, Fort Portal, Kasese, Kabale, Arua, Bushenyi/Ishaka, Soroti, Mukono, Malaba, Lugazi, Iganga, Mubende, Hoima, and Masindi.

Small towns are all towns with populations of 5,000 to less than 15,000, all gazetted district headquarters and towns with populations greater than 15,000 that are not yet gazetted for water supplies operation under National Water and Sewerage Corporation service areas.

The Ministry of Housing and Urban Development has started on the process of gazetting urban centres as Town Boards (small towns and rural growth centres) to control the development process and guide the planning process. The Town Boards will require service provision, including improved water supplies and sanitation/sewerage facilities to match their urban status.

2.5.3 *Water for Production*

Water for production is considered to be an area of increasing importance for Uganda's future development of the agricultural sector in line with the Plan for Modernization of Agriculture (PMA).

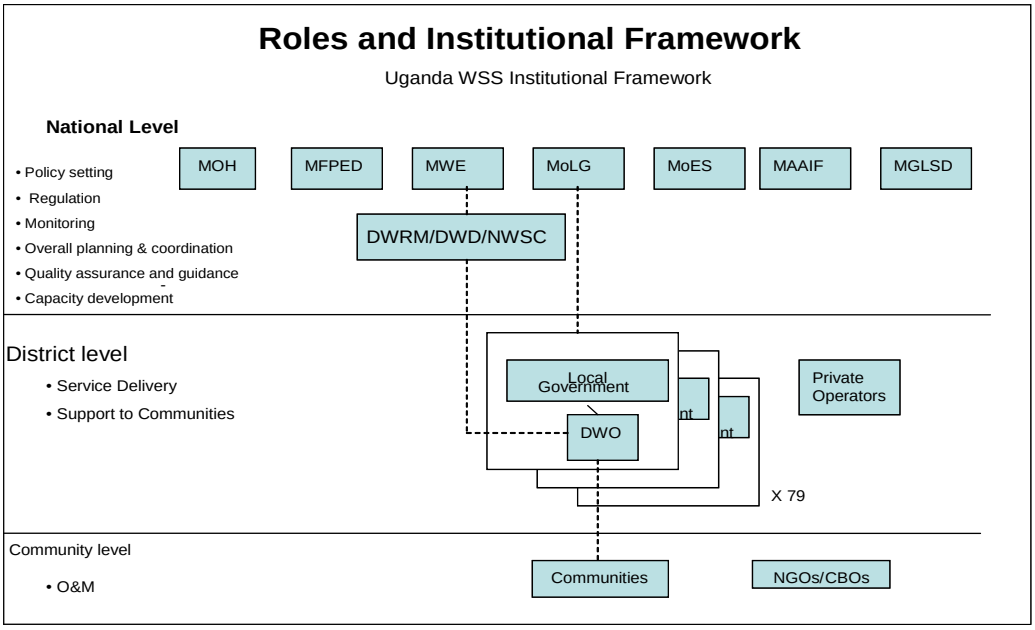
The institutional arrangements for Water for Production have been discussed at different fora. A Department of Water Production has been approved by cabinet and established in MWE/DWD. Water for Production remains a shared responsibility between MWE, Ministry of Agriculture, Animal Industry & Fisheries (MAAIF) and Ministry of Trade and Industry. The MWE is to concentrate on development of reservoirs for multipurpose use and bulk water transfer. This will be made operational under the next MTEF. District Local Governments will implement construction of valley tanks and smaller surface water reservoirs of less than 10,000 m^3 capacity.

2.6 INSTITUTIONAL FRAMEWORK

2.6.1 *Overview*

The institutional framework for the sector comprises a number of institutions that participate directly in the provision of water and sanitation services at the national, district and community levels as indicated in Figure 2.1.

Figure 2.1 Water and Sanitation Sector Institutional Framework



2.6.2 *National Level*

The **Ministry of Water and Environment (MWE)** has the overall mission: "To promote and ensure the rational and sustainable utilisation, development and effective management of water and environment resources for socio-economic development of the country". The ministry has three directorates: Directorate of Water Resources Management (DWRM), Directorate of Water Development (DWD) and the Directorate of Environmental Affairs (DEA).

MWE has the overall responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. It also monitors and evaluates sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery.

The newly created **Directorate of Water Resources Management (DWRM)** has a mandate to "promote and ensure rational & sustainable utilization, effective management and safeguard of water resources for social and economic welfare and development as well as

for regional and international peace". It is responsible for managing, monitoring and regulation of water resources through issuing water use, abstraction and wastewater discharge permits. The directorate comprises three departments namely Department of Water Resources Monitoring and Assessments, Department of Water Resources Regulation and Department of Water Quality Management.

The **Directorate of Water Development (DWD)** is responsible for providing overall technical oversight for the planning, implementation and supervision of the delivery of urban and rural water and sanitation services across the country, including water for production. MWE is responsible for regulation of provision of water supply and sanitation and the provision of capacity development and other support services to Local Governments, Private Operators and other service providers. DWD comprises three Departments; Rural Water Supply and Sanitation; Urban Water Supply and Sanitation and Water for Production.

The National Water and Sewerage Corporation (NWSC) is a parastatal that operates and provides water and sewerage services for 22 large urban centres across the country including Kampala City. NWSC's activities are aimed at expanding service coverage, improving efficiency in service delivery and increasing labour productivity. Key among its objectives is to plough back generated surpluses towards infrastructure improvements and new investments.

A number of other line ministries have important roles in the sector. **The Ministry of Health (MoH)** is responsible for hygiene and sanitation promotion for households through the **Environmental Health Division (EHD)**.

The Ministry of Education and Sports (MoES) is responsible for hygiene education and provision of sanitation facilities in primary schools. It also promotes hand washing after latrine use in the schools.

The Ministry of Gender, Labour and Social Development (MGLSD) is responsible for gender responsiveness and community development/mobilisation. It assists the sector in gender responsive policy development, and supports districts to build staff capacity to implement sector programmes.

The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) spearheads agricultural development. This includes the on-farm use and management of water for production (irrigation, animal production and aquaculture).

The Ministry of Finance, Planning and Economic Development (MFPED), mobilises funds, allocates them to sectors and coordinates development partner inputs. MFPED reviews sector plans as a basis for allocation and release of funds, and reports on compliance with sector and national objectives.

The country has considerable **Development Partner** support for the development budget. These include ADB, Austria, BADEA, DANIDA, DFID, EU, France, Germany, JICA, UNICEF and Sida.

The **NGOs** working in the sector are coordinated at the national level through **UWASNET**, Uganda Water and Sanitation NGO Network an umbrella organization, which is largely funded by the MWE. The present support to UWASNET ends in December 2007. An evaluation of UWASNET is to be done before the end of the year to recommend strategic way forward for long-term sustainability of the organization.

A draft Local Government and NGO Strategic Framework has been developed for District-NGO cooperation. It is intended to enable districts to easier utilize the DWSCG to outsource software activities through selective bidding involving NGOs and CBOs (locally based). Negotiations regarding the adoption of the framework are still ongoing with Public Procurement and Disposal of Assets Authority (PPDA).

2.6.3 *District Level*

Local Governments (Districts, Town Councils, Sub-Counties) are empowered by the Local Governments Act (2000) for the provision of water services. They receive funding from the centre in the form of a conditional grant and can also mobilise additional local resources for water and sanitation programmes. The Local Governments, in consultation with MWE/DWD also appoint and manage private operators for urban piped water schemes that are outside the jurisdiction of NWSC.

2.6.4 *Private Sector*

Private Sector firms undertake design and construction in the sector under contract to local and central government. Private hand pump mechanics and scheme attendants provide maintenance services to water users in rural and peri-urban areas. Private operators manage piped water services in small towns and rural growth centres.

2.6.5 *Community Level*

Finally, **Communities** are responsible for demanding, planning, contributing a cash contribution to capital cost, and operating and maintaining rural water supply and sanitation facilities. A water user committee (WUC), which is sometimes referred to as a Water and Sanitation Committee (WSC) should be established at each water point.

2.7 SECTOR COORDINATION

2.7.1 *The Sector Wide Approach*

The Sector Wide Approach (SWAP) is a crucial part of sector coordination. The SWAP framework for the sector was adopted in September 2002. The SWAP is a mechanism whereby Government, civil society and development partners support a single policy, development plan and expenditure programme, which is under Government leadership and follows a common approach. It de-emphasizes donor-specific project approaches but promotes funding for the sector through general, sector earmarked budget support or through basket funding. Rural water and sanitation is the most advanced sub-sector in terms of SWAP implementation.

2.7.2 *Sector Coordination*

Two committees, **"The Water Policy Committee (WPC)"** and "**The Water and Sanitation Sector Working Group (WSSWG)** have been established at national level to formulate policies and provide technical guidance to facilitate development of the Water & Sanitation Sector. They are central in managing the Sector Wide Approach (SWAP).

The functions of the **Water Policy Committee** are stipulated in the Water Statute (1995). The membership includes government ministries, and representatives from district local governments, private sector and NGOs. The WPC advises on water policy, standards for service delivery, and priorities for water resources management. The WPC also advises on revisions to legislation and regulations for water resources and also coordinates formulation of international water resources policy

The **Water and Sanitation Sector Working Group (WSSWG)** provides policy and technical guidance for the sector. The WSSWG is made up of representatives from MWE, NWSC, MoH, MoES, MoLG, MFPED, Development Partners, NGOs (represented by UWASNET) and Local Governments (to be represented by ULGA). The WSSWG has two sub-sector working groups, responsible for Water for Production and for Sanitation.

At district level, **District Water and Sanitation Coordination Committees (DWSCCs)** have been established in some districts. The DWSCC membership consists of administrative and political leaders, technocrats and NGO/CBO representatives at district level. The role of the DWSCC is to oversee the implementation of WSS programmes,

strengthen collaboration and coordination with other sectors (health, education, social development and agriculture) and other players (private sector, NGO and CBOs and civil society).

Non-Government Organisations (NGOs) and Community Based Organisations (CBOs) are active in the provision of water and sanitation services (construction of facilities, community mobilisation, training of communities and local Governments, hygiene promotion as well as advocacy and lobbying. There are over 200 NGOs and CBOs currently undertaking water and sanitation activities in Uganda. NGOs and CBOs are involved in point source protection and in borehole drilling and rehabilitation especially for institutions and in the emergency areas. They are coordinated by UWASNET.

2.8 FUNDING SOURCES

The water and sanitation sector has three main sources of funding, Donor funding (loans and grants), Government funding (from the Treasury) and internally generated funds (specifically referring to revenue generated by the provision of water and sewerage facilities). The Government's ranking of donor support modalities, in descending order of preference is:

- General budget support – provides government with the maximum flexibility in allocating resources according to GoU strategic objectives and priorities
- Budget support earmarked to the Poverty Action Fund – mutually agreed upon between Government and donors, taking into account aggregate expenditure ceilings
- Sector budget support (also called basket funding) – donor funds pooled together as "Partnership fund" to implement agreed activities in an attempt to reduce transaction costs and simplify reporting procedures
- Project aid – address particular cases, e.g. large urban water projects.

NGOs and CBOs operate outside the GoU sector ceiling and generally access donor funding independently from Government. In general NGOs/CBOs have experienced difficulties in accessing GoU grant funds for the implementation of water and sanitation activities. The existing Local Government procurement guidelines do not have any provision for NGOs to access these funds.

2.9 STATUS OF 2006 JOINT SECTOR REVIEW UNDERTAKINGS

This section provides an overview of progress on the undertakings adopted by the 2006 Joint Sector Review (JSR).

2.9.1 *Undertaking No. 1 – Water resources management*

"Prepare and test a framework for participatory IWRM in one pilot catchment by September 2007." This undertaking has partly been achieved. A framework has been developed but not yet been tested. Key actions taken to implement the undertaking were the following:

- A pilot catchment was selected (River Rwizi)
- An institutional framework for a catchment management plan was developed
- Rules of Procedure for the Interim Catchment Management Committee were prepared and the committee inaugurated
- The framework, however, has not yet been tested

Future actions required:

- The developed framework to be piloted for at least two years for meaningful lessons to be learnt before it is fully rolled out.

- To facilitate implementation of the IWRM framework, funds have to be sent to the implementing districts under a dedicated budget line under the district grants.

2.9.2 *Undertaking No. 2 - Sanitation*

"Investigate the best way to introduce an integrated sanitation and hygiene budget line/grant to local Governments (urban and rural) for health, education and water sector (MoH, MoES, & MoWE) by March 2007 and if found feasible lobby the relevant authorities and initiate implementation of the process."

This undertaking has been substantially achieved. Key actions taken to implement the undertaking were the following:

- Ministries of Education and Health were successfully lobbied to adopt a similar undertaking at their respective Joint Sector Reviews.
- A study to investigate the best way to introduce an integrated sanitation and hygiene budget line/grant to local Governments (urban and rural) under the health, education and water sectors, (MoH, MoES, & MoWE) is on-going (draft final report expected by end of October 2007).
- The Permanent Secretary/Secretary to Treasury, MFPED has directed the Accountant General (MFPED) to create a line item for sanitation and hygiene promotion.
- The sector guidelines have been further revised. The sector guidelines to local Governments from the MoH emphasized the prioritization of sanitation. MoH area support teams have also given further guidance/support. Best practices have been documented and dissemination has started e.g. through the annual DHI's conference.
- In a bid to raise latrine coverage, Health Assistants in their Annual Assembly adopted a resolution to raise latrine coverage to 100% by October 2006. Progress on this resolution is reviewed annually across the three sectors (Water, Health and Education).

Future actions required:

- Finalisation of the study to investigate the best way to introduce an integrated sanitation and hygiene budget line/grant to local Governments
- Implementation of the agreed recommendations from the study

2.9.3 *Undertaking No. 3 – Good Governance*

"Develop, improve and implement the frameworks for Procurement and Contract Management Quality Assurance for water and sanitation service delivery that will lead to a reduction in O&M and investment costs." Key actions taken to implement the undertaking include:

- Most of the recommendations in VFM/tracking studies from 2004 and 2005 implemented by concerned agencies/offices within DWD/MWE.
- Consultancy on investment cost analysis for small towns and rural water supply in districts on-going.
- Framework for NGO and LG collaboration prepared and proposal under discussion with PPDA.
- Feed-back mechanisms (information to bidders) aiming at enhanced transparency in procurement at centre and districts agreed with Procurement Committee of MWE
- Training and re-orientation of procurement/contracts committee and users conducted.
- Committee for approval of designs for UWSD and RWSD established in MWE/DWD.

- All district designs for piped water supply systems approved by MWE/DWD at the centre before implementation commences.
- Contract Ledgers for all contracts instituted within MWE/DWD to curtail cost overruns.
- Inspection of works by MWE/DWD officers and monitoring intensified to avoid poor quality of construction

Future actions required:

- Completion of consultancy assignment for detailed analysis of investment costs for Small Towns, RGCs and District Local Governments (DWSCG) and quantify the cost factors will have to be completed, and recommendations discussed and adopted by the sector.
- Revision of MWE/DWD design manual to minimize excesses in design of piped water supply schemes.

2.9.4 *Undertaking No. 4 – Sector Performance*

"Revise sector performance measurement framework, the criteria and the way it defines, establishes, validates and harmonizes information regarding access to and use of safe water and sanitation in Uganda".

The undertaking has been implemented with the major output being a list of specific recommendations with regard to revision of definitions, calculation methods and data arrangements for Golden Indicator 1 (access to water), 2 (functionality), 4 (access to sanitation), 7 (equity), 8 (handwashing) and a number of related areas (including data continuity, urban/rural boundaries, data collection, household surveys). The final report is available. To kick-start implementation of the revision, each specific recommendation has been accompanied by an action plan for F/Y 2007/8-2008/9. The new definitions and calculations will run in parallel to the existing ones for a period of two years after their nationwide introduction. If found appropriate, the Sector Performance Measurement Framework (SMPF) will be revised after the test period.

Future actions required:

- Implementation of recommendations according to the developed action plan
- Revision of the SPMF after two years of testing and approval by the WSSWG

2.9.5 *Undertaking No. 5 – Finance*

"Allocate funds for 2007/8 based on SIM model to all sub-sectors meanwhile ensuring an increasing decentralization (e.g. greater share to the DWSCG) and adhering to policy loyal adjustment given the funding constraint and taking into account the primacy of attaining targets in rural WSS, WfP, the post conflict districts with low coverage."

The SIM-model was used for the initial sub-sector allocation of funds in the Sector Budget Framework Paper (BFP) for FY 2007/8. The BFP was subsequently approved by the WSSWG. However, thereafter adjustments were made in the BFP following comments received from Ministry of Finance, Planning and Economic Development and Cabinet as follows:

- The conditional grant for rural water and sanitation was increased by 5 billion (from 40 billion 2006/7 to 45 billion 2007/8). The extra amount was allocated to Districts with a coverage below 50%.
- In line with national priorities, the budget for WfP was increased from 5 billion in 2006/7 to 15 billion in 2007/8.

- The budget for water supply and sanitation for Internally Displaced People in the North was increased from 1.7 billion in 2006/7 to 4.2 billion in 2007/8 to take care of water and sanitation needs for resettlement areas.
- 2.5 billion was allocated to NWSC for rehabilitation of Gulu water supply to cater for the significant population increase in the town.

Future actions required:

- There is a need for a fully consultative budget process at all levels involving all sector stakeholders (primarily through the WSSWG) up to the finalisation stages of the Sector Budget Framework Paper.
- A consolidated Sector Investment Plan is being prepared to incorporate emerging policy issues (including bulk water transfer under WfP, WSS for resettlement in the North, underserved district and sanitation).

2.9.6 *Undertaking No. 6 – Water for Production*

"Mobilise, in partnership with all stakeholders, community and private sector funding for WfP so that at least 30% of the investment comes from the beneficiaries for schemes constructed from now on."

Key actions taken to implement the undertaking were the following:

- Level of investment deemed proportionate to capacities created. Current level of private contribution established through a baseline survey covering 5 districts (Abim, Apac, Isingiro, Masindi and Nakasongola). Current level of private contribution identified at 28% in surveyed districts (earth dams have been excluded in this analysis since their investment cost can hardly be covered by communities and private stakeholders).
- Procurement of construction equipment initiated using part of the WfP for 2007/8 and funding proposals for procurement of additional units prepared. The equipment will support the local authorities, individual farmers as well as the private sector in terms of construction of small volume water reservoirs, an activity that will enhance private sector investment in WfP facilities.

Future actions required:

- Institutional arrangements for management of the equipment are to be formulated in FY 2007/8.
- Finalization of procurement of equipment.

2.10 SECTOR PERFORMANCE REPORT 2006 RECOMMENDATIONS

A number of recommendations were made in last years Sector Performance Report. Some of them formed the basis for the formulation of undertakings. Annex 2-2 provides the progress on the recommendations that were not taken up as undertakings.

CHAPTER 3
Sector Investments

"From a human development perspective, the real question is not whether the world can afford to achieve the [safe water] Millennium Development Goal target. It is whether is can afford *not* to make the investment" (UNDP, 2006).

Domestic Roofwater harvesting in Kaproron Sub-county, Kapchorwa District

3.1 INTRODUCTION

This chapter sets out sector finance and analyses sub-sector investment and investment costs. Data, trends and analysis with respect to the golden indicator for investment in rural and urban water supplies is also presented. The investment/value for money indicator is "*Average investment Cost per beneficiary of new water and sanitation schemes*".

Box 3.1 provides an international perspective on the importance of investing in the Water and Sanitation Sector drawn from the 2006 United Nations Development Report, which focused on Water and Sanitation.

Box 3.1 Why Invest in Improving Water and Sanitation?

Drawing on extensive research, the 2006 Human Development Report (HDR) provides global and regional perspectives and those from Uganda. It states that the estimated cost of the current water and sanitation deficit[7] for sub-Saharan Africa is 5% of GDP (US$ 23.5 billion). This figure exceeds the total flows of aid and debt relief of 2003.

The economic rate of return in saved time, increased productivity and reduced health costs for every $1 invested in achieving the MDG target is $8. Total economic benefits of achieving the MDG target for sub-Saharan Africa would be just under 2% of GDP. The UNDP report adds that conservative estimates indicate that allowing the water and sanitation deficit to continue would cost nine times more than resolving it.

Worldwide, diarrhoea kills about 4,900 people daily, and in 2004, one third of deaths in sub-Saharan Africa were children under-five. Diarrhoea, caused by inadequate water and sanitation represents the second largest killer after acute respiratory tract infection. Globally, diarrhoea kills more people than tuberculosis, malaria or HIV/AIDS. It has been found that universal access to the most basic water and sanitation facilities would reduce the burden on the health systems in sub-Saharan Africa by 7% to 12%.

Research carried out for the 2006 HDR found that in Uganda, "access to an improved water source reduces the risk of infant mortality by 23%." Access to improved sanitation has an even greater effect. Given the slow progress of reducing child deaths in developing countries, progress in water and sanitation is vital to get the world (including Uganda) back on track

Repeated bouts of diarrhoea before the age of one contribute to vitamin deficiency and malnutrition. This further increases the likelihood of suffering longer bouts of diarrhoea in the future. In Uganda, it has been found that diarrhoea impedes infant weight gain. Water related diseases also disadvantage children due to reduced cognitive potential, absenteeism, attention deficits and early dropout. These continue to affect them into adulthood.

Almost half the people in the world are suffering from one or more of the main diseases associated with lack of adequate sanitation or water supply at any given time. These diseases fill half of the hospital beds in developing countries, never mind the out-patient care. In addition, bouts of sickness can drive vulnerable people into destitution. Trachoma, for example has been called a passport to poverty.

Education of girls is essential to empower women to participate as decision makers, and they are more likely to have smaller, more educated families. Research in Tanzania found that attendance levels for girls rose by 12% when they live 15 minutes from a water source. Girls, in particular those after puberty, are less likely to attend classes if there are not adequate hygiene facilities and parents may withdraw them if there are no separate toilet facilities. One study estimated that about half of the girls who drop out of in sub-Saharan Africa do so because of poor water and sanitation facilities.

3.2 SECTOR FINANCE

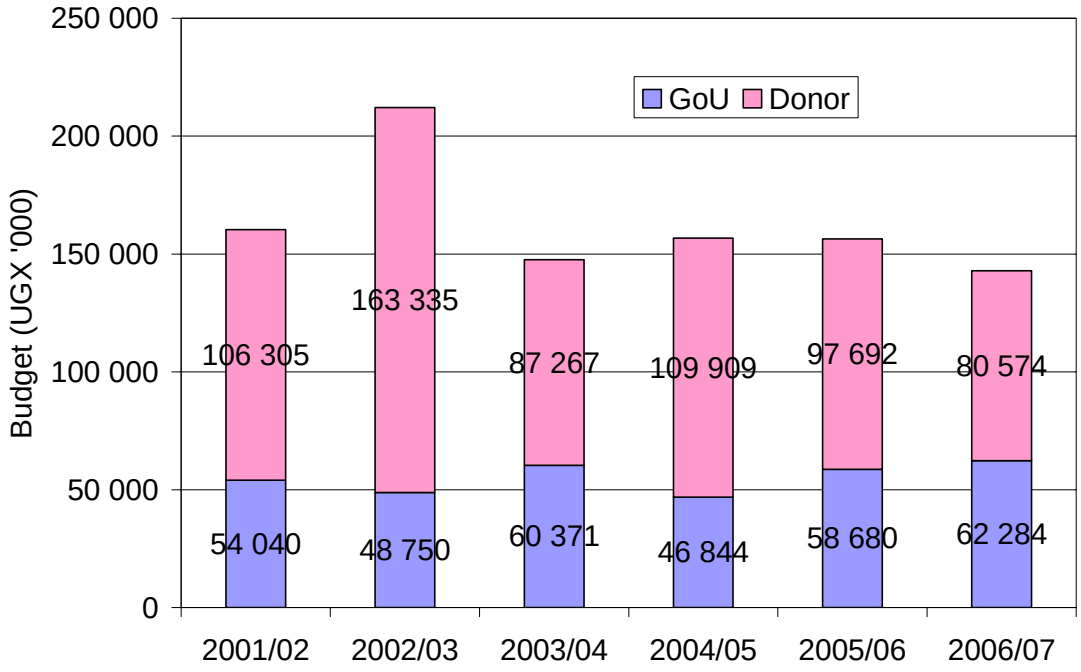
The sector is financed by Government, bilateral and multilateral development partners, (grants and loans), community contributions to investment costs, and internally generated funds (i.e. revenue from water sales and provision of sewerage facilities) and NGOs.

7 Deficit is the difference between current and universal coverage.

3.2.1 *Budget Allocation Trends*

Figure 3.1 presents the sector budget allocation trend for the sector from FY 2001/2 to 2006/7. The annual budget allocation peaked in 2002/3 and has subsequently remained fairly constant at about UGX 150 billion.

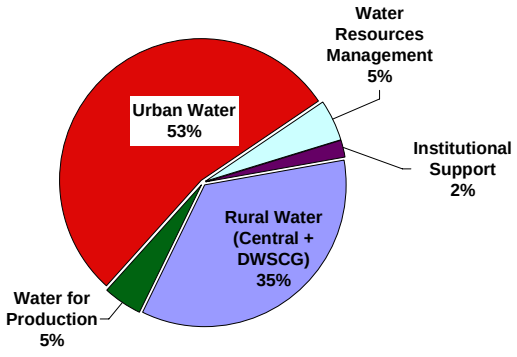
Figure 3.1 Water & Sanitation Sector Allocated Budget Trend



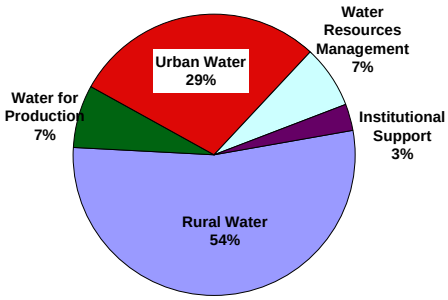
3.2.2 *Sub-Sector Budget Allocation*

Figure 3.2 sets out the sub-sector budget allocation, (including and excluding the NWSC donor funds) between the sub-sectors. Figure 3.2b on the right presents allocation under the Medium Term Expenditure Framework (MTEF).

Figure 3.2 Total Sub-Sector Budget Allocation (UGX million) for 2006/7



3.2a All Sector Allocation (Including NWSC Donor Funds): Total = UGX 143 billion



3.2b Sub-Sector Allocation (Excluding NWSC Donor Funds): Total = UGX 95 billion

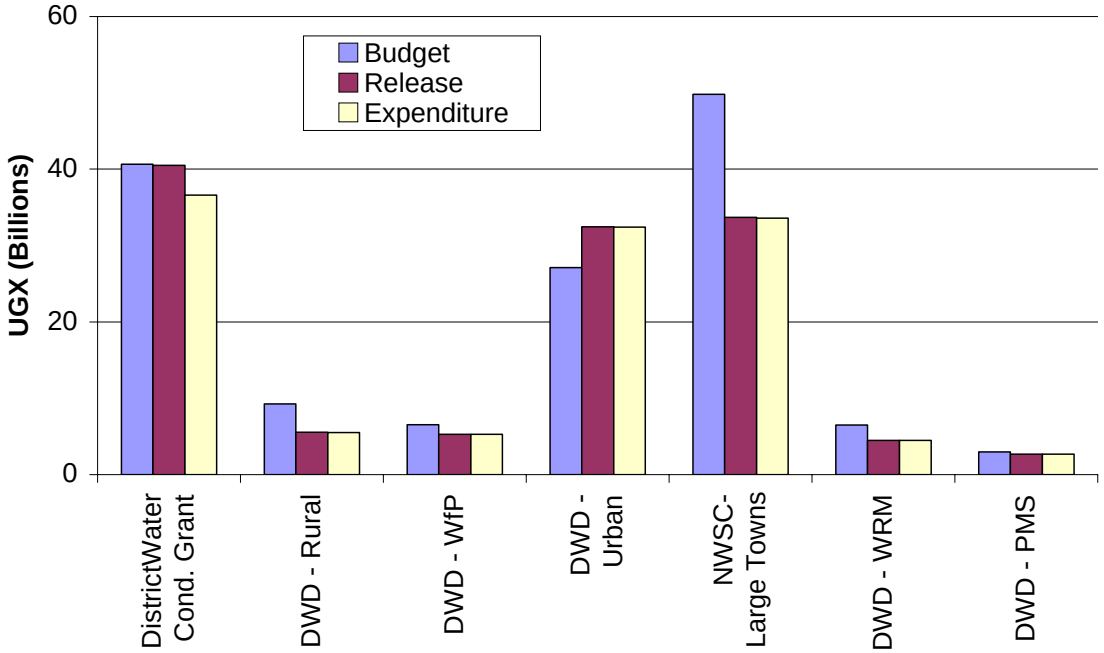
3.2.3 *Budget Performance*

In 2006/7, a total of UGX 143 billion[8] was budgeted for water and sanitation activities (both donor and local funding) (Table 3.1 and Annex 3-1). Figure 3.3 shows the allocation, releases and expenditure for the sub-sectors. The total budget allocation to the sector under the MTEF was approx UGX 95 billion.

Table 3.1 Water and Sanitation Sector Budgets, Releases & Expenditure (FY 2006/7) (UGX million)

	BUDGET		RELEASED		EXPENDITURE	
Sub-Sector	**GoU**	**Donor**	**GoU**	**Donor**	**GoU**	**Donor**
District Water Conditional Grant (DWSCG)	40,660	0	40,502	0	36,620	0
DWD - Rural	3,241	6,043	2,972	2,586	2,942	2,586
DWD - WfP	5,241	1,306	5,209	53	5,204	53
DWD - Urban	7,545	19,560	7,135	25,314	7,094	25,314
NWSC-Large Towns	2,360	47,458	2,360	31,319	2,250	31,318
DWD - WRM	2,477	3,995	2,202	2,305	2,158	2,305
DWD - PMS	760	2,212	676	2,017	669	2,017
Totals	62,284	80,574	61,056	63,594	56,936	63,593
Grand Total	**142,858**		**124,650**		**120,529**	

Figure 3.3 Budget Performance (GoU and Donor) 2006/7, UGX billions



The total release was approximately UGX 125 billion and actual expenditure was approx 120 billion. Figure 3.3 shows the budget performance by sub-sector. The figure shows under expenditure of approximately UGX 4 billion for the DWSCG. This was mainly due to procurement delays which resulted from delays in appointment and approval of Contract

[8] Includes approximately UGX 56 billion donor funds for NWSC which is off- budget (outside the medium term expenditure framework.)

Committees in some district Local Governments. This delayed the award of contracts at the district level. Most of the districts were however allowed to retain the funds after provision of evidence of contractual commitment in the form of signed agreements.

There was significant under-expenditure (of almost 30% of the budgeted funds under the Joint Partnership Fund, JPF) for the rural water and sanitation activities at the centre. This was because of the delay caused by the process of advertising and recruitment of the staff for the eight regionally based Technical Support Units (TSUs).

In DWD-Urban, the apparent expenditure over budget was due to the late disbursements of donor funds for the ADB project. These funds were carried over from last financial year.

3.3 NUSAF INVESTMENTS

In 2006/7, a sum of UGX 6.33 billion was invested through the Northern Uganda Social Action Fund (NUSAF) in the construction of 388 sub-projects[9] in northern Uganda. Annex 3-2 shows the breakdown of sub-projects per district.

3.4 NGO/CBO INVESTMENTS

NGOs and CBOs have continued to improve on their data collection on investment and implementation. A total of 84 organisations (65 out of 150 UWASNET members and 19 out of 54 WASH cluster members) reported on their outputs and investments for the Sector Performance Report 2007 as listed in Annex 3-3 and Annex 3-4.

UWASNET NGO/CBO members reported investments of UGX 9.72 billion between Jan and Dec 2006 and WASH Cluster NGO/CBO Members (who provide emergency water supply and sanitation in the north) reported that they invested UGX 24.45 billion between Jan 2006 and Aug 2007. The increase on last years figure is a due to the fact that more organisations have provided information this year.

Only 38 of the 65 UWASNET member organisations were able to segregate their expenditure into Water Supply and Sanitation components representing 66% of the UWASNET member expenditure. This expenditure comprises UGX 5.33 billion on water supply (Table 3.2) and UGX 1.10 billion on sanitation (Table 3.3).

The proportion of expenditure on overheads and community sensitisation activities is not given. Although NGO reporting to the sector (through UWASNET and the WASH cluster) has improved considerably over the years, more clarification is still required. The average unit costs in Table 3.2 cannot be readily compared with DWSCG figures. This is because the costing methods used by the different NGOs have not been given, and they are likely to differ.

Table 3.2 Breakdown of NGO Water Supply Investments (2006) by 36 NGOs/CBOs[10]

Sources	Investment (UGX)	No. of Facilities	Average Unit Cost (UGX)
Boreholes	624,709,258	40	15,617,731
Rehabilitated Borehole	52,520,000	47	1,117,447
Shallow Well	1,413,438,400	423	3,341,462
Shallow Well Rehabilitation	103,624,000	52	1,992,769
Spring	473,351,055	239	1,980,548
Spring Rehabilitation	10,911,000	14	779,357

[9] These sources have not been included in calculating access due to the fact that it was not clear whether all of these sources have actually been completed

[10] Source: UWASNET, 2007

Sources	Investment (UGX)	No. of Facilities	Average Unit Cost (UGX)
Tapstands	1,843,222,828	190	9,701,117
Rainwater Tanks	695,366,963	1,792	388,040
Filters	68,120,000	215	316,837
Water collection containers	44,400,000	630	70,476
Total	**5,329,663,504**		

Table 3.3 Sanitation & Hygiene Outputs by 36 NGOs/CBOs

Facility	No.	Amount (UGX)	% Expenditure
Household Latrines	5,578	268,798,750	25%
Public Latrines	260	243,773,307	22%
HH Hand washing facilities	12,243	33,740,050	3%
Garbage pits	2,309	13,888,250	1%
Sanplats	1,485	33,752,100	3%
Dish (Drying) Racks	12,446	7,523,000	1%
School Latrines	277	260,413,600	24%
Ecosan toilets	75	40,736,600	4%
School HWFs	373	37,098,406	1%
Home Improvement Campaigns	7	10,700,000	3%
Pick axes	1,067	14,400,000	1%
Drainage Channels	2km	15,600,000	1%
Training science Teachers in Hygiene promotion	369	13,726,000	1%
Training of Health Clubs (Village and School)	246	38,404,760	4%
Others	n/a	63,432,478	6%
TOTAL		**1,095,987,301**	**100%**

3.5 WATER RESOURCES MANAGEMENT

The water resources sub-sector reform study has estimated the financial requirements for implementation of water resources activities over a 10-year period (2005 to 2015) at US$ 60.71 million. This translates to a funding requirement of UGX 10 billion per year. Currently, the sub sector gets an average of UGX 6.5 billion per year, which is only 7% of the total sector budget.

While funds from donors for WRM have gone down, releases from Government have been irregular and have varied considerably. Due to competition for inadequate financial resources, annual resource allocation within WRM sub-sector depends on sub-sector priorities for a particular year. Prioritising funds for some activities affects the implementation of other activities. Permit issuance and compliance monitoring were prioritised[11] in 2006 as a result of the 2005 undertaking on regulation thus boosting the level of these activities in 2006. In 2007 priority shifted to groundwater mapping and IWRM where a large percentage of human resources and funds were allocated.

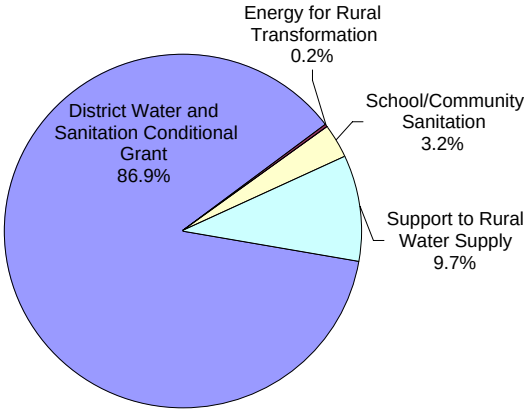
[11] During the midyear workplan review in 2006, 18% (400 million) of WRMD's budget was allocated for the undertaking on Regulation but Regulation was allocated 5% in 2007.

3.6 RURAL WATER SUPPLIES AND SANITATION

3.6.1 *Overview*

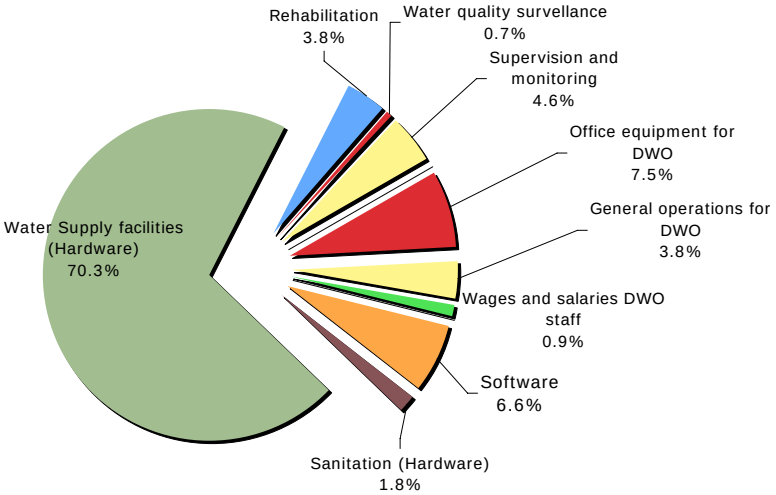
Figure 3.4 shows how the funding to the rural sub-sector was spent, with 86.8% of funds for the DWSCG in FY 2006/7. The total expenditure in FY 2006/7 was UGX 42.1 billion (DWSCG + Support to rural water + School/community sanitation/IDP + energy for rural transformation). The population served through the DWSCG was 643,826, resulting in an overall cost per new person served of UGX 65,390 (US$ 38). This is within the target figure of US$40.

Figure 3.4 2006/7 Rural WSS Expenditure Breakdown (Total = UGX 42.1 billion)



In FY 2006/07, Government allocated UGX 40.7 billion to local Governments in form of the District Water and Sanitation Conditional Grant (DWSCG). UGX 40.5 billion was released to districts by MoFPED, out of which UGX 36.6 billion was spent by end of June 2007 in 78 districts. Figure 3.5 provides expenditure details categorised according to the newly introduced reporting formats. Details for each District are given in Annex 3-5.

Figure 3.5 Proportion of DWSCG Expenditure on Different Items[12]



[12] Data has been categorised in line with new reporting formats issued in 2006/7 to enable improved comparative analysis.

Analysis of the sector investment shows that funds allocated to the districts under the DWSCG have been increasing over the last five-year period (2002/3 to 2006/7) and has resulted in the population served as shown in Table 3.4.

Table 3.4 DWSCG Expenditure (02/03 to 06/07) and Proportion Spent on Facilities

Item	2002/03	2003/04	2004/05	2005/06	2006/07
Total Budget	24,481,861	25,420,325	27,986,786	27,736,116	40,502,835
Released	24,127,033	25,300,352	27,856,204	27,601,535	40,520,000
% Released	98.55%	99.53%	99.53%	99.51%	99.96%
Total Expenditure (June 30)	22,070,381	24,159,847	26,955,596	25,063,792	36,620,551
% of DWSCG Spent	91%	95%	97%	91%	90%
Water Supplies Facilities Expenditure	17,863,082	19,285,938	21,085,955	19,065,920	25,760,751
% Spent on Water Facilities by June 30th	81%	80%	78%	76%	70%
Expenditure on springs, boreholes, shallow wells, RWH, GFS.	16,117,149	17,557,125	17,861,996	14,840,715	20,802,846
Proportion of DWSCG spent on springs, boreholes, shallow wells, RWH, GFS (that contributed directly to new persons served).	73%	73%	66%	59%	57%
Number of people served	895,498	742,942	743,817	607,738	643,826
Cost per new person served (based on total DWSCG expenditure)	24,646	32,519	36,240	41,241	56,880
Cost per new person served (based on expenditure on springs, springs, boreholes, shallow wells, RWH, GFS)	17,998	23,632	24,014	24,420	32,311
Cost per new person served (based on expenditure on springs, springs, boreholes, shallow wells, RWH)**	16,205	21,197	21,858	22,321	27,101
** GFS and RGC costs and people served have been removed due to the fact that these schemes are constructed over multiple years and thus distort annual costs					

Table 3.4 (above) shows the average cost per person served based on the total DWSCG. The following subsections analyse the reasons for this apparent increase.

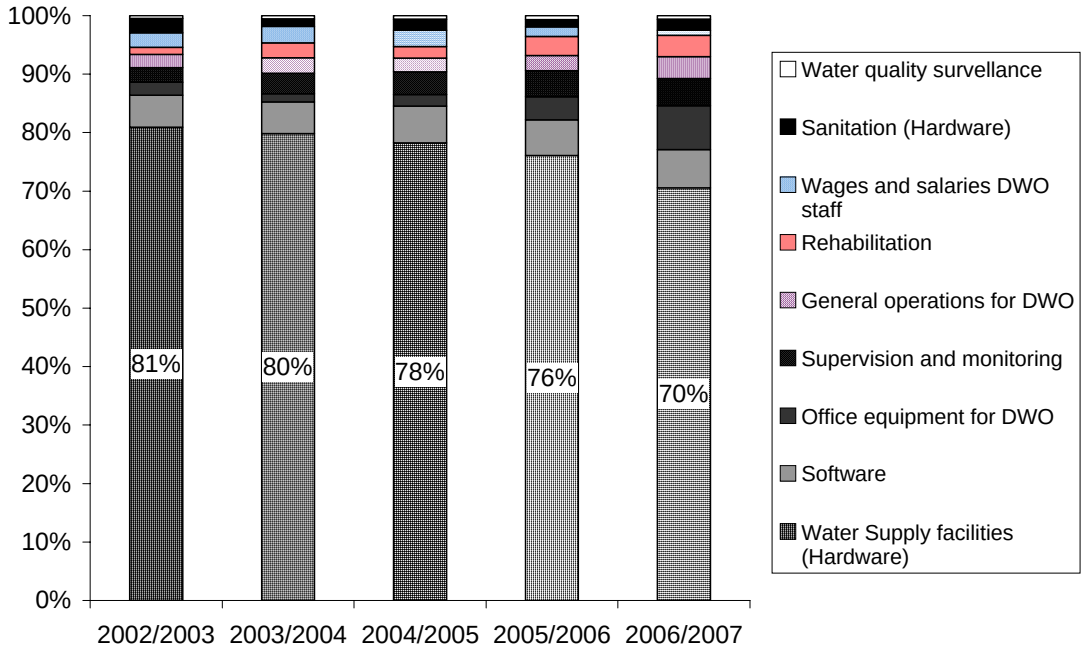
3.6.2 *Non-Hardware Costs*

At the beginning of the DWSCG in FY 2000/01, most district Local Governments were in a position to finance their own running costs for the District Water Office. These costs covered water quality testing, staff wages, sanitation and hygiene promotion, general office operations, rehabilitation of facilities, supervision and monitoring, other software activities, and office equipment. From FY 2002/3, the DWSCG funded substantial office construction and equipment including vehicles in a number of the newly created Districts. The situation was worsened by creation of more districts (FY 2004/5 to 2006/7) for which the cost of start up of the respective water offices was met from the DWSCG. These costs grew from 22% in FY 2002/03 to 30% in FY 2006/07 (Figure 3.6). This meant the proportion of the DWSCG available for water supply facilities has reduced from 81% to 70% over the last five years. The

removal of graduated tax as a major source of local Government revenue has worsened the situation.

Figure 3.6 shows that expenditure on office equipment increased from 2% in FY 2002/03 to 7% in 2006/2007. This is primarily due to the increase of districts from 56 in FY 2003/4 to 64 in FY 2004/5 to 79 in FY 2006/07.

Figure 3.6 Expenditure per budget line (2002/03 to 2006/07)



Expenditure on software activities has increased from 4% in the FY 2002/03 to an average of 7% in the FY 2006/07. The sector has been advocating for more emphasis on software activities to improve sustainability (Districts are allowed to use up to 12% of the grant for software activities).

Expenditure on supervision has increased from 2% of the DWSCG in the FY 2002/03 to 5% in the FY 2006/07. As reported in the private sector study (2003), 2% for supervision of field activities was not enough for the water office; this was later on increased to 4% as given in the Water Sector schedules. This guideline was however not strictly adhered to by all districts thus leading to the higher expenditure of 5% in the districts of Bukedea, Mityana, Kaabong, Namutumba, Lira, Kitgum, Jinja, Kiruhura, Kisoro, Bugiri, Mukono, Mubende, Busia, Bugiri, Nebbi, Kiboga, Kapchwora, Moyo, Kotido, Mbale, Ntungamo.

In FY 2006/7, the 23 new Districts created spent 36% of their funds in district start-up activities (i.e. office equipment, office structures, vehicle purchase and general water office operation costs). In comparison, 5% was spent by the 56 old districts. This has resulted in lower investment in water supply facilities (i.e. 57% compared with 73% in FY 2003/4 for the old 56 Districts). This affected the cost per person as shown in Table 3.5.

Table 3.5 Analysis of Investment Costs in New Districts

Item	2005/06	2006/07
Funds Spent ('000 UGX)	2,560,158	7,264,537
Number of people served	44,940	81,990
% of DWSCG spent on Water Supply Facilities for NEW Districts	59%	58%
% of DWSCG spent on Water Supply Facilities for ALL Districts	76%	70%
Average cost per Person served in NEW Districts	56,968	88,603
Average cost per person served for ALL Districts	46,127	56,616

In order to counteract this trend, MWE has provided guidelines and set a minimum percentage of 70% for local Government investment for water supply facilities for subsequent years. No work plan is approved by MWE if less than 70% is planned and budgeted for water supply facilities in any financial year. This is also crossed checked with the district annual reports. MWE will explore the possibility of taking sanctions on those districts that spend above the agreed percentages.

3.6.3 *Hardware Costs*

Table 3.4 shows that the apparent *cost per new person served* (based on expenditure on springs, springs, boreholes, shallow wells, RWH, GFS) by the DWSCG has increased over the years from UGX 17,998 to UGX 32,161. This is primarily due to the following reasons:

- Problems in reporting annual new people served by RGCs and GFS, which are constructed by the districts over multiple years.
- Changes in the technology mix towards more expensive technology options.
- Increases in cost of inputs (cement, fuel, steel).

Figure 3.7 shows that the proportion of the DWSCG spent on RGC scheme construction grew from 3% in FY 2002/03 to 10% in FY 2005/6 and then fell to 6% in FY 2006/7. Unfortunately RGCs have not been included for the past five years when calculating the annual investment costs for the DWSCG. This is because RGC schemes and GFS are constructed over several years due to limitations of funds available (expenditure is incurred for construction of a reservoir and pipeline in one financial year but will not result into increased coverage). The scheme will be completed in the subsequent financial year and then reported to be serving the intended beneficiaries. This leads to a distortion in average costs of serving new persons. However district reporting formats have been improved from 2007/8 to cater for this.

Expenditure on water supply facilities for the last five years has been varying as given in Table 3.6. Valley tanks are not considered as serving people with safe water supply. The amount spent on the category of "other water facilities" (valley tanks) that do not directly influence safe water coverage increased from 7% in FY 2002/03 to 17% in FY 2005/06 and fell to 13% in FY 2006/7.

Table 3.6 Breakdown of Expenditure on Water Facilities (% of Total District Water and Sanitation Conditional Grant)

Facilities	2002/03	2003/04	2004/05	2005/06	2006/07
RGC/WSS	3%	3%	7%	10%	6%
Valley Tank	2%	2%	2%	2%	2%
Others	0%	1%	1%	2%	0%
Retention	2%	2%	2%	3%	5%
Sub-Total of Facilities that have not generated new people served	**7%**	**7%**	**12%**	**17%**	**13%**
Facilities that contributed to new people served	68%	73%	66%	59%	57%
Total	**76%**	**80%**	**78%**	**76%**	**70%**

The less-costly option of springs has been reducing over the years while expenditure on the more costly options of boreholes and GFS has increased. This has lead to less water points constructed for a given grant. The breakdown of expenditure and population served by technology is summarised in Table 3.7. Although in 2006/7 shallow wells constituted 17% of expenditure on water facilities, they actually covered 46.4% of the total new persons served. In contrast, borehole expenditure was 34% but served 26.1% of the total new persons served due to the higher unit cost.

Table 3.7 Breakdown of Expenditure on Water Supply Facilities (06/07)

Technology	Unit Cost	% of total expenditure	% Population served by Technology
Small spring	1,715	1%	4.2%
Medium spring	1,773	3%	12.5%
Large spring	2,637	1%	2.0%
Shallow hand dug well	4,447	13%	36.7%
Shallow well hand augered	3,013	1%	3.7%
Shallow well motorised	6,513	3%	6.0%
Borehole	15,867	34%	26.1%
Rainwater Harvesting System	2,268	7%	0.7%
GFS Tap	14,079	18%	8.0%
RGC/WSS	n/a	9%	0**
Valley tank	n/a	5%	0
Retention	n/a	6%	0
Total	**n/a**	**100%**	**100%**

*** The current reporting format does not capture the population served by RGCS unless the entire scheme is complete.*

Boreholes have a higher cost per capita than shallow wells. This partly explains the reason for preference by Local Government for shallow wells as they can serve more people out of the available funds.

Table 3.8 Trends in Cost per Person Served for Different Water Supply Technologies

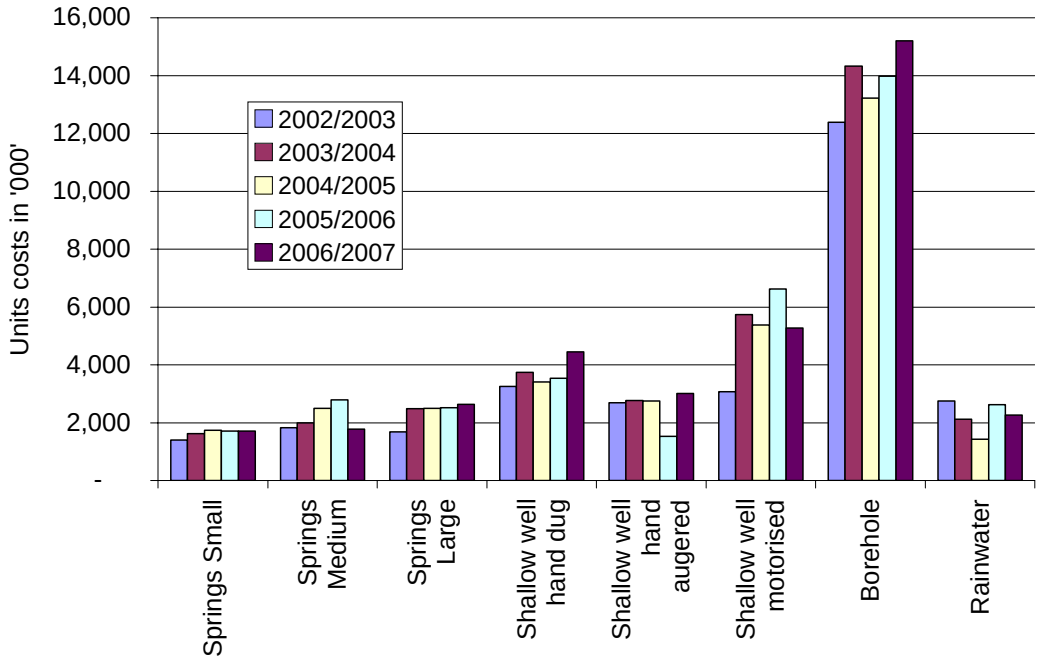
Technology	2002/03	2003/04	2004/05	2005/06	2006/07
Small Spring	6.99	8.12	8.66	8.56	8.57
Medium Spring	9.10	9.94	9.21	12.46	8.86
Large Spring	8.40	12.43	12.47	13.98	13.18
Shallow well hand dug	10.83	12.47	11.37	12.76	14.82
Shallow well hand augered	8.97	9.20	9.18	6.06	10.04
Shallow well motorised	10.25	19.11	17.92	22.07	17.56
Borehole	41.27	47.76	44.09	46.59	50.67
Rainwater Harvesting Syst.	348.83	310.68	250.18	412.79	385.15
GFS Tap	36.29	45.86	40.71	36.56	93.86*
* This is due to distortion of data, brought about by construction over multiple financial years					

Table 3.8 shows the trends on "cost per person served for different water supply technologies" and Figure 3.7 shows the trend in unit costs.

Borehole costs increased from an average of UGX 12.4 million in 2002/3 to UGX 15.9 million in FY 2006/07. This could be a result of increased costs of inputs like cement, fuel and hand pumps, which have increased over the years[13]. Inflation has also increased costs.

Due to the high costs of rainwater harvesting systems at institutions (primary schools and health centres) and the difficulties of rationing water from the tanks in the dry season, with effect from FY 2007/08, the DWSCG can only be used on support to domestic roofwater harvesting (DRWH) at household level, particularly in areas where the other technologies are not feasible. DRWH has higher unit costs than the other technologies, however the service level is **much** higher. This is a strategic way of addressing the problems of inequity in the least served areas and sub-counties in Uganda.

Figure 3.7 Trend of Unit costs for the water supply technologies



[13] A bag of cement in the 2002/03 was at an average cost of UGX 16,000 and in the FY 2006/7 increased by 56% to UGX 25,000. Hand pumps increased from an average of UGX 1.45 million in FY 2002/03 to approximately UGX 1.93 million in FY 2006/7.

The average cost of the individual technology varies considerably from district to district (Annex 3-6).

With respect to boreholes, the districts sunk production boreholes with unit costs ranging from UGX 19 million in Kaabong, UGX 22 million in Maracha and UGX 28 million in Mubende. Iganga District's borehole unit cost of UGX 21 million included consultancy costs for siting and supervision while in Nebbi, carry over of funds for borehole drilling from one financial year to another led to a distortion of costs (Box 3.2).

Box 3.2 Case Study of Borehole Costs and Reporting in Iganga and Nebbi

Case study 1: Iganga. Payment to the contractor was based on actual quantities of work done (using Bills of Quantities). Contract for drilling only of 12 boreholes in the FY by Royal Techno Limited was costed at UGX 140,234,551. The average was UGX 11.66 million. Siting was at an average of UGX 1.7 million while casting and installation was at an average of UGX 1.3 million. This gives the total cost of a finished borehole at UGX 14.63 million. However on reporting, the average cost for a finished bore hole is UGX 21million. On further inquiry from the water office, it was found out that the all costs related to borehole, including their mobilisation, supervision plus construction are added up as boreholes costs.

This shows distortion of the costs due to amalgamation of supervision costs related to boreholes within borehole construction costs. This needs to be closely sorted out as there was no defendable reason for amalgamating the costs.

Case study 2: Nebbi. In Nebbi district, there was a case of distortion of figures brought about by the carry forward of funds under the drilling contract. A total of UGX 196.2million was carried forward for drilling of boreholes in the FY 2005/06 which was posted on the bore hole expenditure of the FY 2006/7 leading to the unit cost for a single borehole to go up to UGX 68,023,000. The corresponding physical outputs were not reflected in the FY 2006/07 and this lead to distortion of the unit costs.

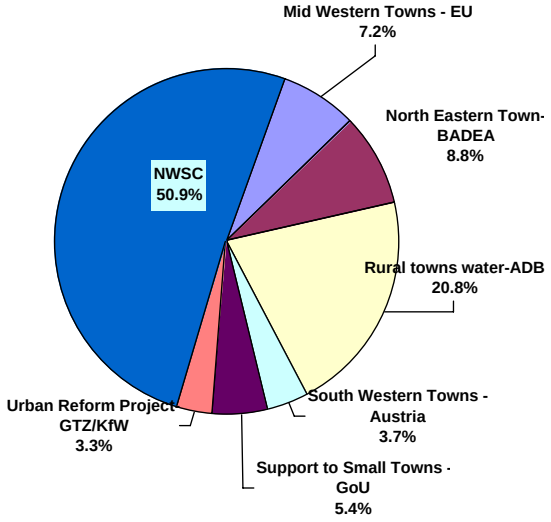
The increases in the proportion of the DWSCG being spent on higher cost technologies (particularly boreholes) has had a significant impact on the cost per person served.

3.7 URBAN WATER SUPPLY AND SANITATION

3.7.1 *Overview*

Figure 3.8 provides the expenditure breakdown for the urban water and sanitation sub-sector.

Figure 3.8 Urban sub-sector Expenditure Breakdown (Urban Total = UGX 66 billion)



3.7.2 *Large Towns under National Water & Sewerage Corporation*

The NWSC budget performance for F/Y 2006/07 (Table 3.9) was mainly affected by the low allocation from the Government for earmarked donor funded projects. Out of a total requirement of UGX 9 billion from the GoU, funds allocated amounted to only UGX 2.4 billion. This impaired the implementation of projects and resulted in a number of unpaid certificates for contractors.

Table 3.9 NWSC Project Budget Performance (FY 2006/07) UGX '000,000

Project	Donor	Budget		Released		Expenditure	
		GoU	*Donor*	*GoU*	*Donor*	*GoU*	*Donor*
Kampala Network Rehabilitation	KfW	0	4,660	0	2,011	0	2,011
Entebbe Water Supply Expansion	KfW	110	17,206	110	10,159	0	10,159
Gaba III Water	KfW	992	7,240	992	11,211	992	11,211
Urban Poor Projec	GoU/KfW	0	5,500	0	186	0	186
IT Project	GTZ	0	752	0	0	0	0
Lake Victoria Environmental Management (LVEM)	IDA	0	0	0	0	16	0
Transmission mains for Gaba	KfW	1258	12,100	1,258	7,752	1,242	7,752
Offshore pipeline Gaba	GoU	0	0	0	0	0	0%
Total		**2,360**	**47,458**	**2,360**	**31,319**	**2,250**	**31,319**

Despite Government funding shortfalls, Gaba III and Entebbe Water Supply Projects were completed during FY 2006/07, a key milestone in expanding service delivery. The production capacity in Kampala increased by 80,000 m^3 of water per day, while in Entebbe, it increased by about 12,000 m^3 per day. These two projects are the first phase of improvement in water supply for Kampala and Entebbe. The second phase will entail the restructuring and expansion of the network. One of the reasons for the continued intermittent supply in some areas in Kampala is the fact that the second phase has not yet been started. However, stop-gap measures were taken to minimise the intermittent supply especially in the north eastern Kampala areas of Namugongo and Kyaliwajala.

3.7.3 *Operational Financial Performance of National Water and Sewerage Corporation*

NWSC's turnover for 2006/07 was UGX 69 billion, of which approximately UGX 45.5 billion was operating expenditure leaving an operating profit of UGX 23.5 billion before depreciation (see Table 3.10). NWSC was able to plough back about UGX 11.8 billion into investment within the Corporation. It should be noted that the investment comes from collected revenue rather than billed revenue.

Table 3.10 NWSC Financial Performance (2006/7) in UGX Billion

SOURCE	Budget	Outturn	%
Billed Revenue[14]	74.1	69.0	93%
Recurrent	45.3	45.5	100%
Investment Self	16.5	11.8	72%
Donor	49.2	31.3	63%

[14] This represents billed income as opposed to collections.

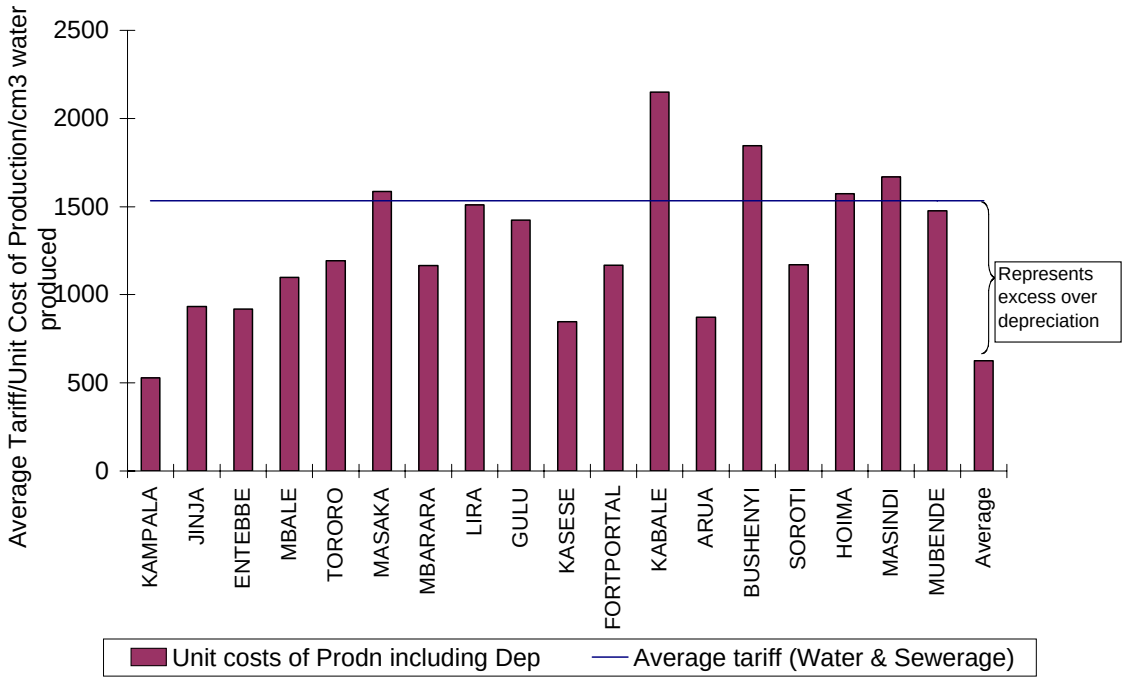
The NWSC uniform tariff structure across all its towns serves the purpose of ensuring equity in supply and pricing for all its consumers. Table 3.11 shows the current tariff structure, which has a lower cost per m^3 for public standposts.

Figure 3.9 shows cross subsidies within the NWSC operational framework. This arrangement within the NWSC towns allows for the less able with higher unit costs to access the NWSC services at a subsidised price. The towns of Masaka, Mbarara, Lira, Gulu, Kabale and Bushenyi have higher unit costs than the average tariff. The average unit cost of production is lower than the average tariff thus enabling NWSC to cover its operating costs plus depreciation leaving an operating profit.

Table 3.11 NWSC Tariff Structure 2006/07

Customer Category	Tariff Ush/m^3
Public Standpipe	688
Domestic	1,064
Institution/Government	1,310
Commercial < 500 m3/month	1,716
Commercial 500-1500m3/month	1,716
Commercial ≥ 1500 m3/month	1,496
Average Commercial	1,643
Average Water tariff	1,245

Figure 3.9 National Water and Sewerage Corporation Average Tariff versus Cost of Production (including depreciation) 2006/7



3.7.4 *Small Towns Capital Investment Costs*

In FY 2006/07, piped water supplies for a total of 9 small towns and RGCs were completed at a total cost[15] of UGX 7,171,636,741 (USD 4,218,610[16]) to serve a design population of 71,135. 89% of this investment was for schemes in small towns. Table 3.12 provides an overview of the per capita investment costs for each town.

Table 3.12 Per Capita Investment Costs in Small Towns (2006/07)

Town	Initial Population	Design Population	Expenditure (UGX)	Per Capita Cost (UGX)	Water Source
Sembabule	4,130	10,000[17]	2,295,748,594	229,575	Kyogya swamp
Nagongera	5,678	7,484	980,588,732	131,025	2 BHs
Kangulumira	8,480	11,396	1,248,299,415	109,534	2 BHs
Kitwe	5,292	9,579	725,000,000	75,690	Spring
Nyakagyeme	6,458	11,689	410,000,000	35,076	Borehole
Rwentobo	3,432	6,212	467,000,000	75,178	Borehole
Rwerere	3,623	6,558	252,000,000	38,429	Borehole
Bwizibwera Extension	1,985	3,593	336,000,000	93,519	NWSC Mbarara
Katete	2,555	4,625	457,000,000	98,820	Spring
Total	**41,633**	**71,135**	**7,171,636,741**		
Average				**98,538**	

The average per capita investment cost[18] for the piped schemes completed in FY 2006/07 was UGX 98,538 (US$ 5816). This was within the target per capita investment cost of UGX 127,500 (US$ 75) for the fiscal year. The per capita investment ranged from UGX 229,575 (US$ 135) in Sembabule to UGX 35,076 (US$ 21) in Nyakagyeme town (Figure 3.10). The high per capita costs was due the fact that water for Sembabule is sourced from Kyogya swamp, which is 14km away and requires full conventional treatment plant hence the relatively high investment cost (Figure 3.11).

[15] Costs include borehole drilling and the construction. For Sembabule, Kangulumira and Nagongera water supplies, the cost are inclusive of construction supervision as well.
[16] USD 1 = Ushs 1,700
[17] The design was reviewed to accommodate the community living in the neighbourhood of the water treatment works.
[18] Calculated as total investment cost divided by design population. Design population considers domestic population only.

Figure 3.10 Per Capita Investment Cost for piped water supplies completed in 2006/7

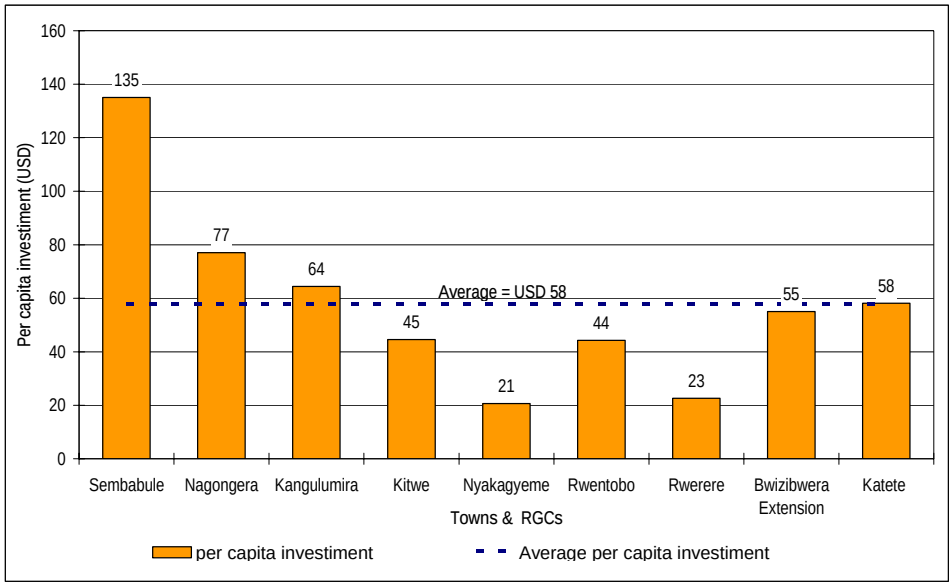


Figure 3.11 Sembabule Piped Water Supplies

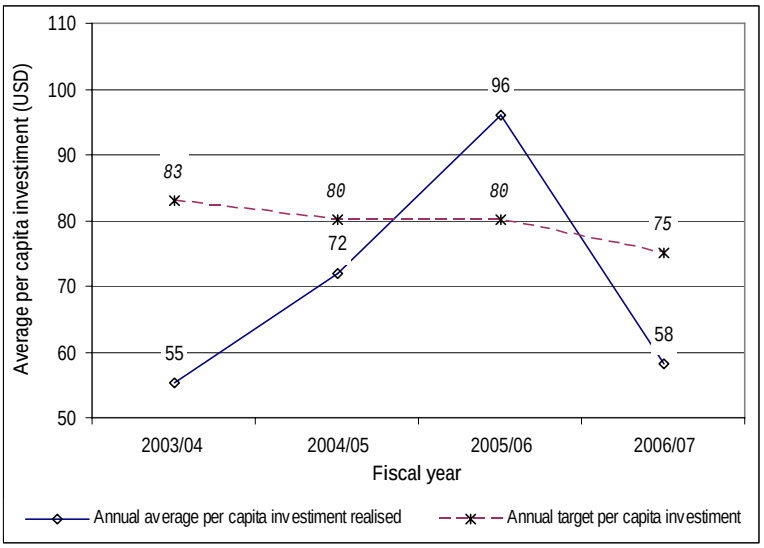
Sembabule water treatment works

Sembabule water intake works

3.7.5 *Small Towns Per Capita Investment Trends*

Figure 3.12 summarises the variation in per capita investment from the fiscal year 2003/04 to date. Except for the fiscal year 2005/06, the average per capita investment was within the target. The high average per capita investment realised in FY 2005/06 is attributed to the complexity of developing Mubende town water supply system. The downward trend is highly attributed to the simpler types of technologies developed in the towns completed during the reporting period.

Figure 3.12 Annual average per capita investment costs for small towns



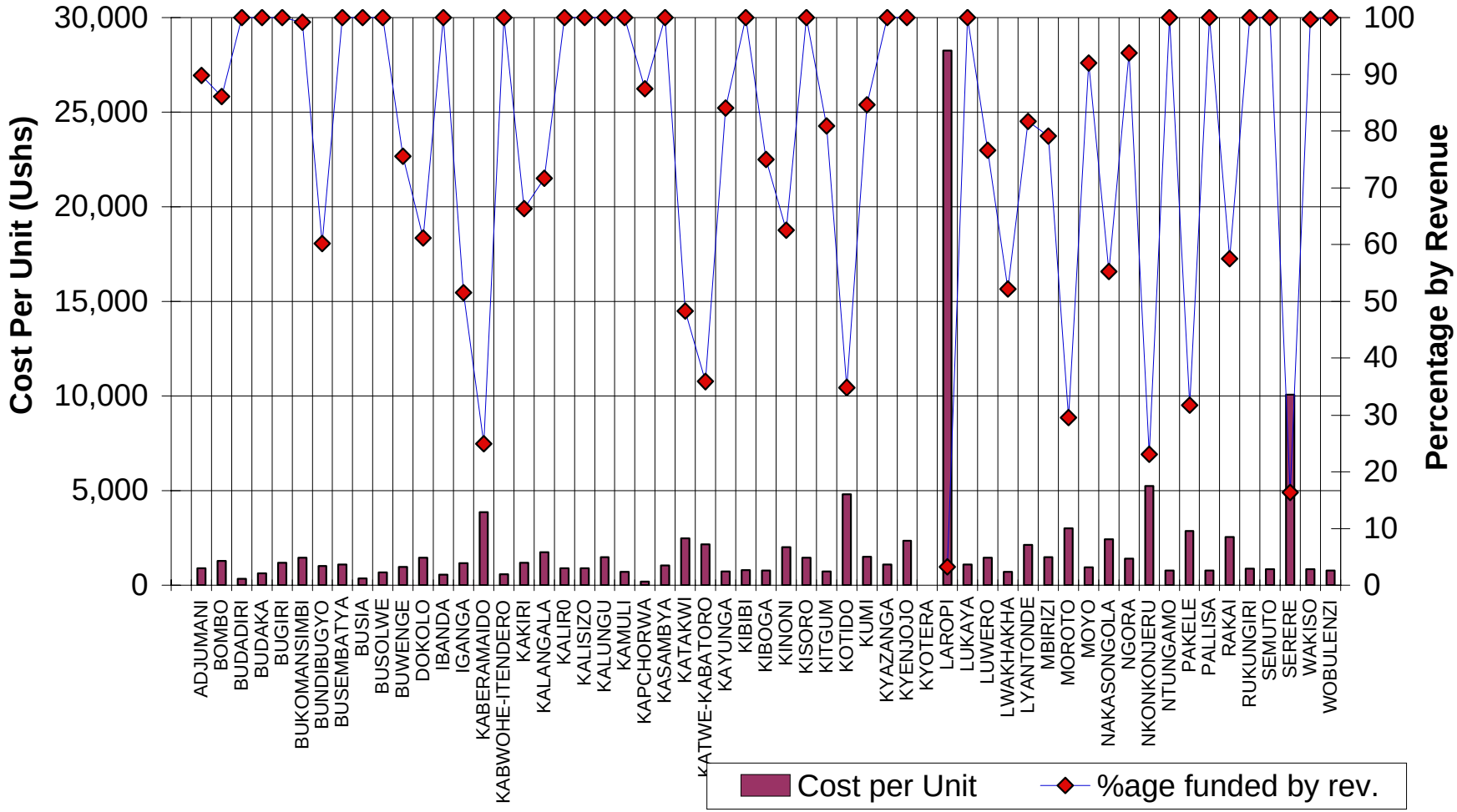
3.7.6 *Operational Financial Performance in Small Towns*

Figure 3.13 shows the cost of producing water in the 57 small towns that are run by private operators and under the Water Authorities Division (MWE/DWD). The average unit cost of production for the small towns is UGX 2,057 per m^3, and varies from UGX 348 per m^3 in Budadiri to UGX 28,260 per m^3 in Laropi. The two extreme cases of Laropi and Serere distort the average unit cost considerably. Excluding them would give an average cost of UGX 1,250 per m^3. The high cost of production in these two towns is caused by the expensive technology option and the limited number of connections with an indicator of 103 staff per 1000 connections in Laropi and 80 staff per 1000 connections in Kaberamaido. The electrical equipment has had to be replaced several times at Serere.

However, there are other problems related to reporting, data management, financial audits, procurement and capacities of both water boards and private operators (Watasa, 2007). Annex 5-4 provides a summary of a recent study of these issues.

The average unit cost has steadily risen from UGX 1,282 per m^3 in 2004/5, UGX 1,711 per m^3 in 2005/06 to UGX 2,057 per m^3 in 2006/07. The rising cost in unit operating cost is partially attributed to the power crisis, but also attributed to the need for more stringent regulation of Local Government/Water Authorities activities.

Figure 3.13 Small Towns - Cost per unit of Water Produced



During the financial year 2006/07, GoU provided UGX 1.5 billion as Conditional Grants to Town Councils as an investment subsidy towards operation and maintenance of the water systems, including expansions, renewals and providing accessibility (connections) to the urban poor.

In 2006/7, each piped water supply system was granted an amount in the range of 1.2% - 2.4% of the total annual grant. The amount given per town ranged from 1.2 % - 8% of the total. Annex 5-5 provides a summary of grant allocation and expenditure for 2006/7.

3.8 WATER FOR PRODUCTION INVESTMENTS

The investment analysis below has been divided into three sections; 1) analysis based on central Government investment, 2) analysis based on investment through the District Water and Sanitation Conditional Grant and 3) analysis based on data collected through the pilot baseline survey.

3.8.1 *Central Government Investments*

Table 3.13 summarises the WfP achievements between 1999/2000 and 2006/07 with focus on Water for livestock.

Table 3.13 WfP achievements between 1999 and 2007 with focus on water for livestock

Indicators	1999/0	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	Total
Investment (USh bn)	1.96	3.133	3.971	2.59	3.671	3.665	2.8	5.177	2.97
Dams/valley tanks constructed	2	6	0	6	43	_	10	2	69
No. of dams/valley tanks rehabilitated	_	_	1	1	1	_	1	0	4
Volume of storage created ($x10^6$ m3)	0.497	0.617	1.1	0.2	0.515	_	0.31	0.052	3.291
No. of animals served (4 months) x 1000)	158	196	349	63	163	_	100	12	1041
Cumulative storage capacity (x 10^6 m3)	11.27	11.89	12.99	13.19	13.7	13.702	14.01	14.06	14.06
% cumulative storage capacity	37.5	39.6	43.3	44	45.7	45.7	47	48	48

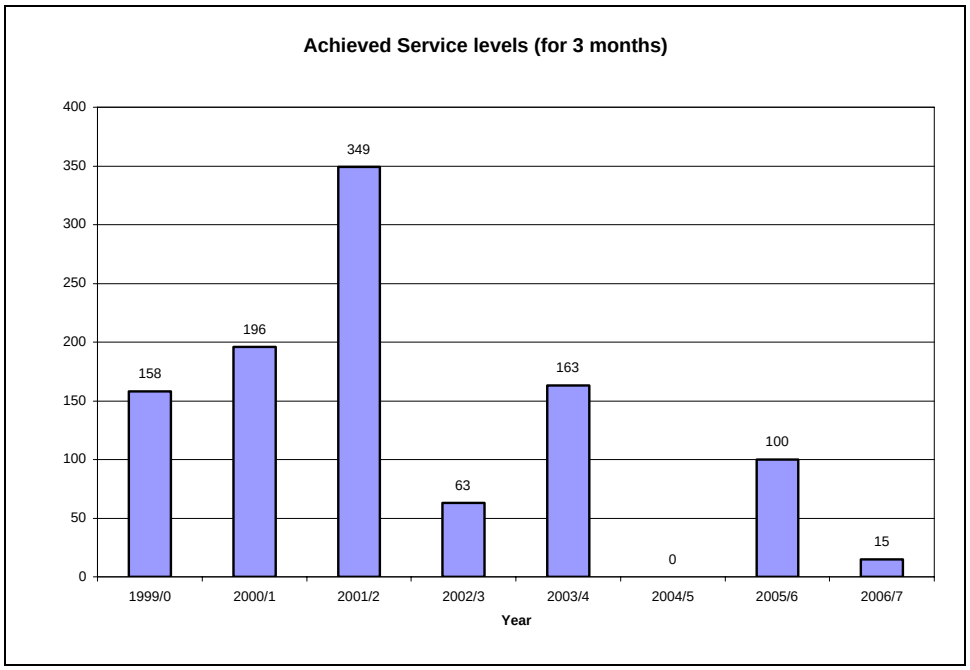
Major investments during the FY 2006/7 have been:

- Detailed feasibility study and design of one pilot scheme for bulk water
- Detailed design and construction supervision for emergency water supply and multipurpose water supply from R. Katonga for Kisozi
- Design and construction supervision of Nshenyi valley tank in Ruhaama and an Earth dam in Rubaare, Ntungamo district
- Ongoing rehabilitation of Kakinga Dam in Sembabule District
- Ongoing rehabilitation of Kailong dam in Kotido district

- Ongoing drilling of four (4) production wells in Kisozi, Mpigi District.

Figure 3.14 presents the trend of achieved service levels in terms of additional animals served over the past 7 years.

Figure 3.14: Annual achieved service levels



The average investment cost per cubic metres of storage created in 2006/07 was **USh 18,155** for storage created by construction of valley tanks (Sembabule) and **USh 6,630** for storage created by construction of dams (Karamoja). This is with the investment target as estimated in the Water for Production Strategy and Investment Plan where average cost of storage by construction of valley tanks and dams was estimated at US$ 10 per cubic meter and US$ 5 per cubic meter respectively.

3.8.2 *District Water and Sanitation Conditional Grant Investments in Water for Production*

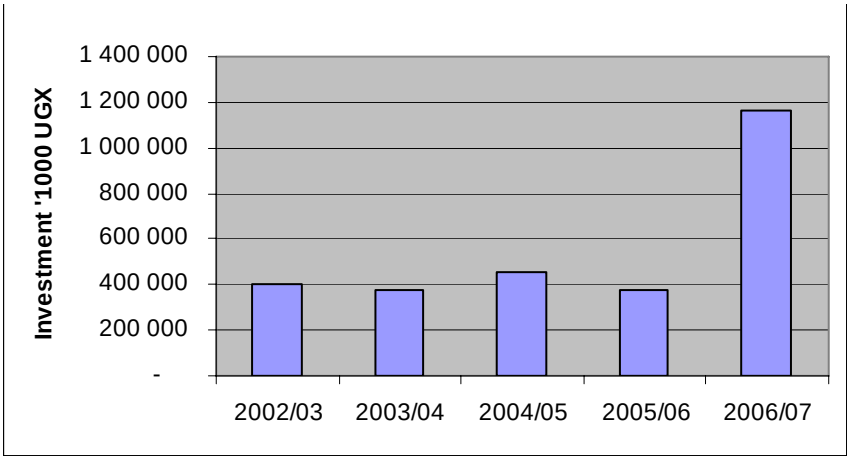
The new WfP Strategy proposes to decentralise WfP activities to enable districts to construct specific facilities for livestock watering as well as for other productive purposes.

Some of districts have already utilised part of the DWSCG to construct small surface water reservoirs (up to 3,000 cubic metres) for both domestic use and for livestock watering. In addition, some districts and sub-counties have constructed similar facilities under the LGDP and NUSAF programmes. Table 3.14 shows the utilisation of the DWSCG for construction of valley tanks up to a volume of 3000 cubic meters and Figure 3.15 shows the investment in WfP facilities over the years. The average investment cost per cubic meter for facilities constructed under the Conditional Grant during the year of 2006/7 is UGX 28,000.

Table 3.14 Utilisation of DWSCG for construction of valley tanks 2002/3-2006/7[19]

Financial Year	Volume created/m³	Cumulative storage/m³	Investment '1000UGX	No of facilities	Average investment/m³
2002/03	36,000	36,000	398,423	12	11,000
2003/04	18,000	54,000	377,691	6	21,000
2004/05	24,000	78,000	451,074	8	19,000
2005/06	21,000	99,000	377,526	7	18,000
2006/07	42,000	141,000	1,160,796	30	28,000

Figure 3.15 Investment in Valley tanks through the DWSCG



3.8.3 *Private Investment*

In order to work towards achieving JSR 2006 Undertaking 6 (*Mobilise, in partnership with all stakeholders, community and private sector funding for WfP so that at least 30% of the investment comes from the beneficiaries for schemes constructed from now on*), information regarding current private contributions is required. Box 3.3 provides information regarding current private contribution based on data collected in a pilot baseline survey covering five Districts.

[19] Source; District Report Compilation Database

Box 3.3 Information on private investments in Water for Production Facilities

Information about investment costs is difficult to collect, particularly regarding facilities constructed a long time ago as well as those funded by private stakeholders and NGOs. Consequently, the approach used has been to estimate the investment costs from storage created by private stakeholders, Government and NGOs respectively. For each facility, information on source of funding was collected and investment estimated based on the volume of water in the facility. In many instances land is donated from private stakeholders, communities or institutions. However, land donations were not included in the analysis.

Figure A shows the source of funding based on current storage in the five districts. It includes storage in earth dams, valley tanks and fish ponds although the latter is insignificant (< 0.5%). Government funded 79% of the current storage. Private stakeholders financed 15% and NGOs contributed 6% of the total current storage.

It should be noted that the volume of water in earth dams is considerably higher than that of valley tanks. This has an implication on the cost of construction. Private stakeholders can hardly cover full investment costs for an earth dam. Earth dams are large strategic reservoirs for multipurpose use, planned, usually financed and implemented by central Government. Including earth dams in the analysis aiming at establishing the level of private contribution is therefore not appropriate and a breakdown of the proportions of source of funding between valley tanks and earth dams is required.

Figure B shows the source of funding based on current storage in valley tanks only. The proportions of GoU, private and NGO contribution then changes considerably compared to the proportions presented when earth dam storage is included. The level of private contribution is 28 % and the NGO contribution is 19%, whereas the proportion of GoU funded storage is only 53 %.

Figure A

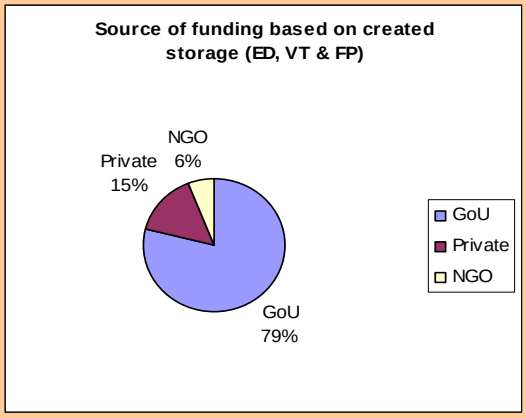
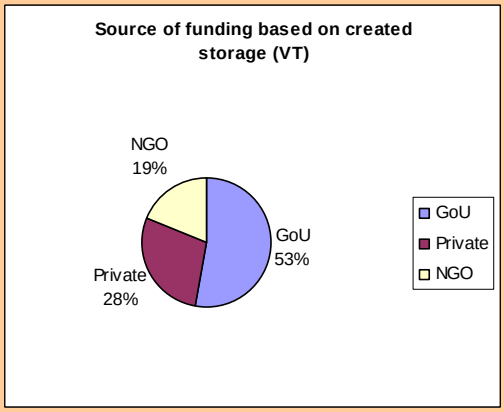


Figure B



CHAPTER 4

Water Resources Management

Presently, Uganda seems to be well endowed with water resources but recent trends indicate impending water scarcity if current practices do not change.

Eutrophication at Kagungu Landing Site, Lake Victoria 2007

4.1 INTRODUCTION

This chapter provides an overview of the achievements and concerns with respect to water resources management in Uganda. The key issues of water resources availability and Lake Victoria levels are discussed. Water quality issues, however, are set out in chapter 9, which examines this golden indicator in more detail.

4.2 TARGETS AND ACHIEVEMENTS

Table 4.1 sets out the targets and achievements for the water resources sub-sector. Performance of the first four sub-sector indicators for 2007 was lower than 2006 and 2005. During 2007 the level of funding for WRMD was very low. SWRMD phase II is in its final year and the level of funding from donors has gone down. Groundwater mapping had a separate budget (30%), which was protected. This reduced further funds for other WRMD activities and impacted negatively on physical output of other activities.

Table 4.1 WRMD Performance against sub-sector indicators

Sub-sector Indicator	Annual target	Achievement		
		2004/5	2005/6	2006/7
Permits Issued	100	64	123[20]	69[21]
No of permit holders monitored for compliance	110	72	255[20]	102[21]
Water samples received & analysed	1,200	1394	884	769
No. of water resources monitoring stations operated	885	389	478	297
Ground water data received, quality assured & entered into database	3,600	1240	2203	852
Surface water data received, quality assured & entered into database	1440	770	1308	507
Water quality data records quality assured & entered into database	1,200	3927	800	758
Meteological data received[22]	600	0	0	0
No. of assessment studies completed	4	2	3	1

The main achievements of the sub-sector based on thematic areas were:

Institutional: The department was uplifted to a Directorate of Water Resources Management (DWRM). Modification and refurbishment of the library was undertaken and two Water Policy Committee meetings were held. Capacity building through attendance of courses continued. Collaboration with other institutions was strengthened through signing MoUs.

Water Resources Management tools: Modelling for assessment of water balance, water quality and pollution loading is being piloted in the pilot IWRM catchment of River Rwizi.

Water Resources Regulation: The low water levels at Jinja persisted for much of the year and therefore release at Jinja Power dam was kept constant at 750 cumecs. Environmental Impact Assessment (EIA) for Bujagali hydropower complex was reviewed and comments were disseminated formally including a public hearing in Jinja. Other EIAs reviewed included EIA for 7 smaller Hydropower schemes to be developed on rivers mainly in Western Uganda.

As set out in Table 4.1, 69 new water permits were issued between Sept. 2006 and June 2007 (compared to 123 between Sept 2005 and August 2006). Number of permit holders monitored reduced from 225 to 102 during the same period. On average there has been a

[20] August 2005 to September 2006

[21] September 2005 to June 2007

[22] Although an MoU was signed with the Meteorological department to obtain meteorological data, the MoU is not operationalised due to financial constraints.

50% reduction in regulatory activities this year. Permit issuance and compliance monitoring were prioritised[23] in 2006 as a result of the undertaking on regulation thus boosting the level of these activities in 2006. In 2007 priority shifted to IWRM and groundwater mapping where a large percentage of human resources and funds were allocated.

DWRM collected approximately UGX 80 million as non-tax revenue from processing of permits, annual fees levied on polluters and laboratory services.

Water Quality: One dissemination workshop for the National Water Quality Management Strategy was held in Mukono where officials from 11 districts, various line ministries and private water operators were represented. Implementation of the recommendations of the strategy has started with development of a Water Safety Plan for Kyejonjo water supply. Biological indicators are being developed by DWRM in collaboration with Makerere university (Zoology department), National Fisheries Research Institute and the MoH Vector Control Unit for water quality monitoring. The *Inter-Sectoral National Technical Committee for Water Quality Management* has been formed. The committee will among other tasks oversee implementation of and review of the strategy, coordinate reviews, harmonisation and development of Water Quality standards, identify interventions for water quality deterioration in the country, oversee development and implementation of meta databases for ease of data exchange and sharing information on water quality.

Water Resources Monitoring and Assessments: A total of 297 monitoring stations out of 885 were operated and 507 surface water, 852 groundwater data were collected through integrated[24] network monitoring and 769 water samples were analysed. Data collected was processed and information disseminated to stakeholders. Some of the results are depicted in the section on water quality.

EIA studies for the planned Lake Kyoga restoration have been completed. The study combined both the determination of the appropriate restoration level and associated EIA and recommendations are summarised in Box 4.1.

Box 4.1 Recommendations for Lake Kyoga Restoration

- Clearance carried out so far at the Lake Kyoga outlet has not restored the hydrological regime of the lake to the pre-blockage state and remains susceptible to flooding in case of extreme catchment flows.
- A recommendation (scenario) has been made for the appropriate lake Kyoga restoration level (dredging of sudds out of the lake outlet) that would result in reduced risk of flooding and at the same time conserve the environment
- Further assess the benefit of having a regulated lake Kyoga raised by 1.2 meters
- Directorate of Water Resources to develop supervisory capacity for the recommended restoration (dredging). This should include continued evaluation of the hydrological effects during the progressive restoration work to avoid the risk of excessive draining of the lake.
- Development of flood maps to guide infrastructure developments and settlements around the flooding region.
- Development of landing sites should be guided, to ease accessibility of the lake by the population.
- A permanent monitoring and surveillance programme should be developed by DWRM for sudds movement and therefore control further blockage.

Ground water mapping: Groundwater mapping activities are being undertaken in 16 districts[25] in Eastern and Western Uganda. A set of six maps comprising (i) water sources location, (ii) groundwater potential, (iii) hydrogeological characteristics, (iv) water supply

[23] During the midyear workplan review in 2006, 18% (400 million) of WRMD's budget was allocated for the undertaking on Regulation but Regulation was allocated 5% in 2007.

[24] Integrated monitoring stations are stations where both water quantity and quality parameters are measured.

[25] Soroti, Kamuli, Bukedea, Kumi, Kaliro, Jinja, Kayunga, Mukono, Masaka, Rakai, Lyantonde, Mbarara, Kiruhura, Ibanda, Sembabule and Isingiro.

technology options, (v) water supply coverage and (vi) groundwater quality maps have already been developed for 6 districts[26] in West Nile. Box 4.2 provides more details.

Box 4.2 Groundwater Mapping and its use in Uganda

Groundwater mapping activities started as a pilot in 2001 with RUWASA data. 90 water resources maps were produced and disseminated for 12 districts[27]. Another 30 water resources maps were produced for 5 districts in West Nile using data collected by WRMD as part of its routine groundwater monitoring and assessment activities. In 2007, groundwater-mapping activities were up-scaled in 16 districts[25] in the Eastern region and South Western Uganda. The activity has been outsourced to two local consultants and capacity building is offered by two international short-term consultants for the local consultants, staff of the Directorate and other stakeholders in the districts. A district Groundwater Resources Manual will be prepared to explain how each thematic map category can be used as follows:

- **Water Supply Technology Options Map** – to assist districts to obtain information on the feasible water supply technology options to consider in various areas.
- **Groundwater Potential map, Groundwater Quality map and Water Supply Coverage map** - to help the districts to obtain information on areas with low groundwater potential and hence low water supply coverage and areas of poor water quality.
- **Location map, Groundwater Potential map, Hydrogeological Characteristics map,**– to guide the districts and other stakeholders to construct cheap water supply technologies in areas where they are applicable.
- **Water Sources Location map** - to help districts with the lowest water supply coverage to bargain for equitable share of government resources.

Trans-boundary Water Resources: The 15th Nile Council of Ministers (Nile-COM) meeting was held in Uganda where the Minister for Water and Environment, Uganda was elected chairperson of the Council. A meeting for all the Presidents in the Nile Basin countries is scheduled to take place sometime this year in Uganda to conclude the negotiations on the Nile Basin Cooperative Framework.

The Lake Victoria Basin Commission was inaugurated and a new release regime policy for the Nile is being debated. Uganda is also the chair of the council of ministers for NELSAP (Nile Equatorial Lakes Subsidiary Action Program), which is made up of eight countries[28].

4.3 TREND IN WATER RESOURCES AVAILABILITY

Presently, Uganda seems to be well endowed with water resources but recent trends indicate impending water scarcity if current practices do not change and measures are not established to mitigate impacts of climate change (Box 4.3).

Box 4.3 Summary of the effects of global warming

Global warming has lead to rise in surface temperatures. Increased temperatures generally result in higher rates of evaporation leading to increased water loss from open water bodies, especially over the lakes. Global warming has also lead to reduced rainfall in some places and floods in others. A reduction in precipitation, accompanied by high inter-annual variability - could be detrimental to the hydrological balance of the region and disrupt various water-dependent socio-economic activities. Variable rainfall regimes may also render the management of water resources more difficult. In the context of groundwater resources, change in temperature and precipitation patterns affect groundwater recharge rates.

Decrease in precipitation amounts due to global warming lessens groundwater recharge thereby producing a variety of impacts on wetlands, groundwater supply potential and low flows. With regard to wetlands, decrease in recharge may cause the groundwater levels to recede turning a "wetland" into a relatively "dryland". High surface temperatures decrease groundwater recharge by increasing evapo-transpiration rates, implying that groundwater discharge into rivers may drop drastically.

[26] Arua, Nebbi, Adjumani, Moyo, Yumbe and Koboko

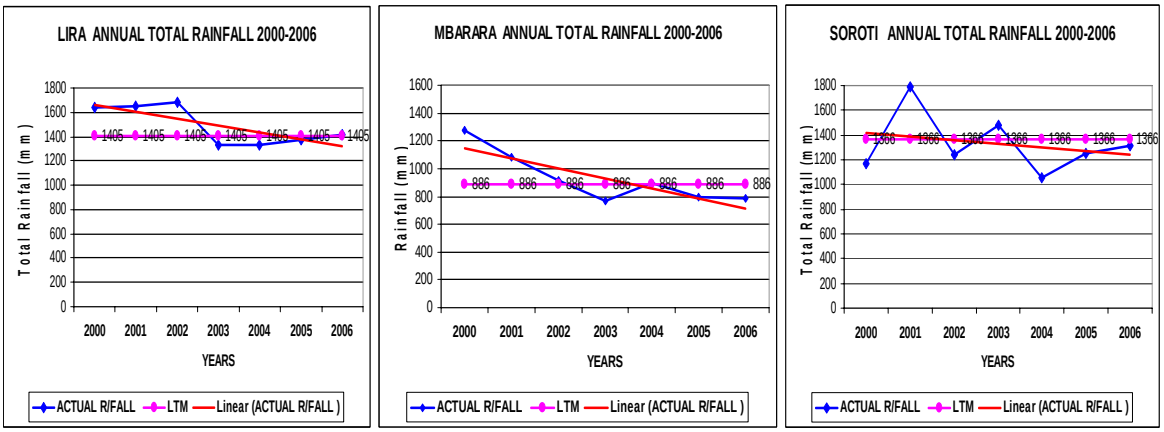
[27] Pallisa, Busia, Mbale, Tororo, Iganga, Mayuge, Bugiri, Sironko and Kapchorwa in Eastern Uganda and for 3 districts: Luwero, Nakasongora and Mpigi in Central Uganda.

[28] Kenya, Uganda, Tanzania, Rwanda, Burundi, DRC, Sudan and Egypt

Water Resources Trend in Uganda. Figure 4.1 shows the trend in annual total rainfall from selected stations in three different regions of Uganda over a five-year period. Compared to the Long-Term-Mean (LTM)[29], the three districts of Arua, Jinja and Tororo show a slight increase in rainfall amounts but a decreasing trend is shown by the seven Lira, Masindi, Mbarara, Ntuusi, Entebbe, Namulonge and Soroti.

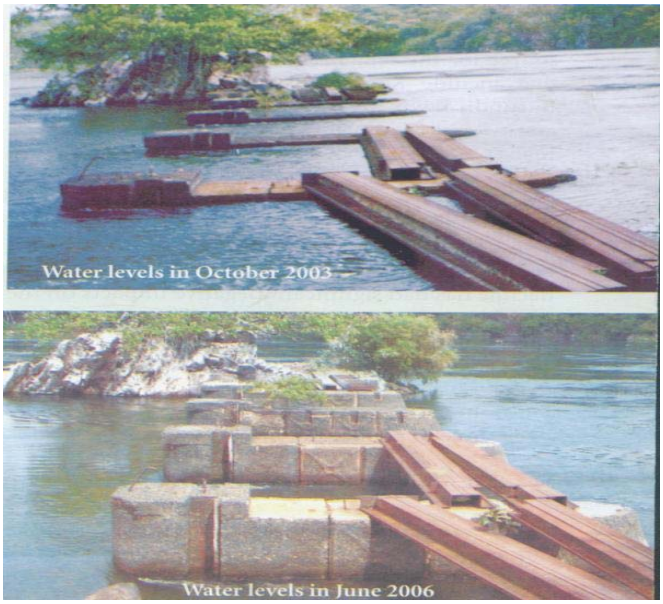
Rainfall is transformed into runoff and eventually into streams and rivers which feed lakes. A reduction in rainfall leads to a corresponding reduction in stream flows and water levels in water bodies, reduction in groundwater recharge and reduction in yield of springs, boreholes and gravity flow schemes.

Figure 4.1 Total Annual Rainfall from Different Regions of Uganda based on data from three meteorological stations.



Preliminary analysis suggests that there is a relationship between the falling water levels in the lakes throughout the country and reduced precipitation. Figure 4.2 shows the falling levels of L. Victoria at the Owen falls dam in Jinja between 2003 and 2005.

Figure 4.2 Water Levels at Owen Falls Dam, Jinja, 2003 (top) & 2006 (bottom)



A desk study using available discharge data was undertaken to compare the Lake Victoria water levels with that of the non-Nile systems for the same period revealed reduced river

[29] LTM in this case is the mean for the period 1971 - 2000

inflows into all the lakes resulting into low water levels in all water bodies in Uganda (See figures 4.3 and 4.4). It was thus concluded that the falling water levels experienced at the Owen falls dam in Jinja from 2002 – 2006 was due to a reduced net basin supply[30] for Lake Victoria as a result of reduced rainfall in the catchment coupled with increased evaporation from the lake.

Figure 4.3 Dropping Water Levels for Lake George (2002 -06)

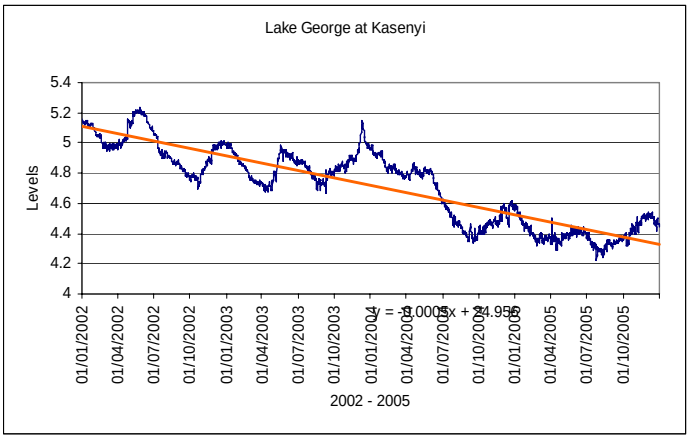
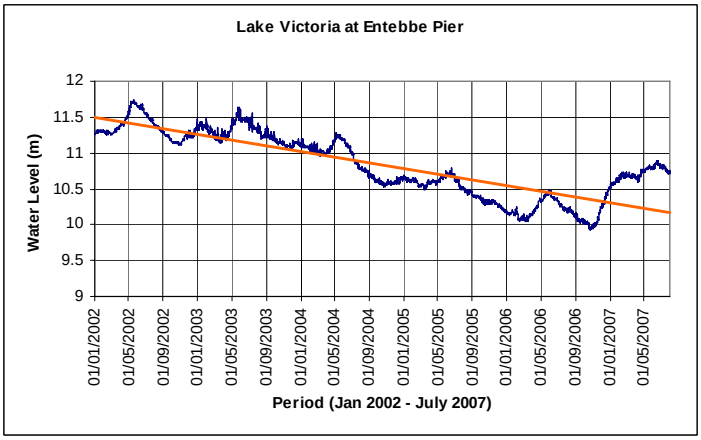


Figure 4.4 Dropping Water Levels for Lake Victoria (2002 -06). Long Term Average: 1134.35)



The above suggests illustrations that the water resources in Uganda have been on a declining trend from 1999 to 2006. Declining water availability has been reported worldwide but analysis of trends over a longer period is required for Uganda to confirm the observed trend. This situation calls for prioritisation of water resources management at the national level at the present in order to mitigate the negative effects of water scarcity for the future generations.

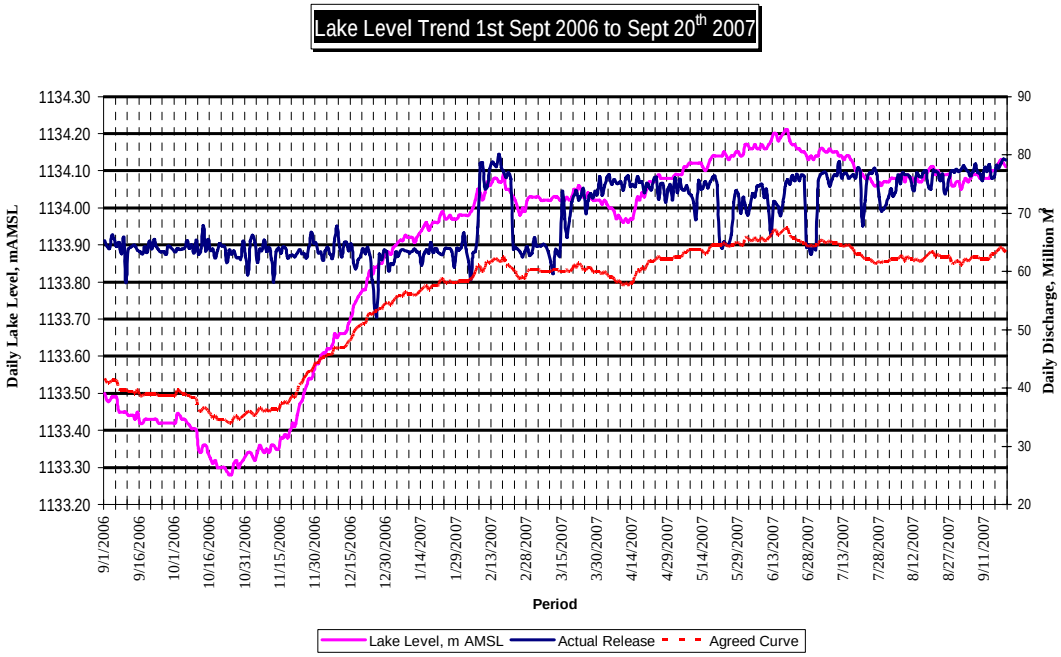
Due to the heavy rainfall, which started in August 2007, the water resources situation in the country has changed. There was extensive flooding in North and North-Eastern Uganda at the time of printing this report (September 2007).

[30] Net Basin Supply is the sum of rainfall plus tributary inflows into the lake from the basin less evaporation from the Lake. It is determined from a total sum of the outflow (release through the dam at Jinja and the storage of the Lake within a given period).

4.4 UPDATE ON LAKE VICTORIA LEVELS

The current water level of Lake Victoria is still below the long-term average of 1134.45 Meters above mean sea level (M amsl). Figure 4.5 shows that the lake level reached 1133.29 M amsl, on the 25th of October 2006, which is the second lowest recorded level in over 100 years. The lowest ever recorded level is 1133.19 M amsl, which was experienced in 1923.

Figure 4.5 Lake Victoria Levels between 1 July 06 and 30 June 07



From October 2006, the lake level rose by 85 cm to 1134.14 M amsl by end of June 2007 and has since dropped slightly below this value by 7cm reaching a value of 1134.07 amsl as at the beginning of August 2007. Between August 2006 and August 2007, the net gain in lake level was only 80 cm. The fluctuations in lake levels during this period (Figure 4.5) are directly attributed to the rainfall and dry spell patterns within the lake basin as explained below.

1. The period June – October 2006 realised negative Net Supply due to absence of rainfall on the lake and high evaporation resulting in the continued fall in lake levels.
2. November 2006 – January 2007 realised higher than normal rainfall over the lake but this did not result into a corresponding rise in water levels because the lake had dropped to very low levels and therefore the contributions of two months rainfall was insignificant in terms of rise in lake level.
3. The months of March – April 2007, realised less than normal rainfall over the lake.
4. Between June and August 2007, there was a drop in lake level of 7cm. Although the month of July 2007 was exceptionally wet, the other two months were relatively dry.

Releases from Lake Victoria for Hydropower Generation. Regulation of Lake Victoria outflow at Jinja continued to be a challenge because small increments in rainfall and lake levels do not automatically translate into more electricity generation as is expected by the general public. The release at Jinja is controlled by an agreed curve and the need to sustainably manage water demand by other sectors such as Drinking Water Supply, Fisheries and Transport, all of which rely on the same lake. Releases at the Owen Falls Complex therefore was regulated on to a constant value of 750 cumecs irrespective of the small increments in rainfall and lake level. The demand for power, which relies on Owen Falls Dam complex for 90% has continued to be a challenge. Maintenance of the regulated level is often varied upwards to address short term concerns. This situation is hoped to be resolved with more installation of thermal capacity in the short term and the coming on of Bujagali in

the medium and long term. According to the agreed curve, at the current lake level, the release should have been 740 cumecs while the actual release is 908 cumecs that has been varied upwards for the month of October 2007.

The Water Policy Committee had directed MWE to ensure a return to the Agreed Curve Policy in the release at Jinja. This was implemented through a gradual decrease from 1160 cumecs in July 2005 to the current value of 750 cumecs which is still slightly above the Agreed Curve Policy value.

4.5 ALGAL BLOOMS ON LAKE VICTORIA

Massive algal blooms have appreared on the shorelines of Lake Victoria since February 2007. Bays affected include Kitubulu, Kigungu and Nakiwogo in Entebbe and Murchison in Kampala (Figure 4.6)

Figure 4.6 Recent Algal Blooms on Lake Victoria

Murchison Bay, Kampala Aug 2007

Kitubulu, Entebbe, April 2007

Algal blooms are a symptom of eutrophication. They tend to become more frequent with global warming as a result of climate change (Box 4.3 and 4.4). Several studies conducted on Lake Victoria have concluded that it has reached eutrophic status in the sheltered bays.

Box 4.4 An explanation of Eutrophication and Algal Bloom

Eutrophication is the enrichment of lake or river waters with plant nutrients mainly phosphorus and nitrogen. Symptoms of eutrophication include algal scums (blooms), massive infestation of aquatic plants such as water hyancinth, and depletion of oxygen in the water. Plant nutrients originate from several sources. Changes in the catchment of the lake such as deforestation, poor agricultural practices and destruction of riparian wetlands leads to excessive loading of soil-bound nutrients into the lake. Bush burning contributes nutrients into the lake through atmospheric deposition. Other sources of nutrients into the lake are untreated waste from industries and municipal discharges and internal loading from the sediment under certain conditions.

The algal blooms were dominated by blue greens also known as cyanobacteria some species of which are known to release toxins. Algae clog filters at a water treatment plant thus increasing water treatment costs. Algal blooms also pose taste and odour problems in drinking water. Decaying algae results in increased bacterial activity which use up oxygen. When the dissolved oxygen in the water decreases other aquatic organisms such as fish may die.

There are two main categories of control strategies for eutrofication. Those concerned with: (i) reduction of nutrient loads into the lake and (ii) managing the existing high nutrient state within the lake. Methods for management of already eutrophic lakes are expensive and have been applied only in the developed countries. In a developing country like Uganda, methods that minimize nutrient loads into the lake are recommended. These include, awareness raising, enforcement of wastewater regulation, establishment of wastewater treatment plants by all industries and municipalities, increasing sanitation coverage, proper catchment management through establishment of Catchment Management Plans and Integrated Water Resources Management.

CHAPTER 5
Water and Sanitation Development

"Research for the [2006 Human Development] Report shows that access to safe water reduces child death rates by more than 20% in Cameroon and Uganda."

A school girl fetching water from a Solar Powered Piped Water System in Nebbi District

5.1 INTRODUCTION

This chapter sets out the plans and achievements for the three sub sectors of rural water supplies and sanitation, urban water supplies and sanitation and water for production. Sub-sector initiatives and other key activities (eg guidance and support to District local Governments) are also included. The chapter also provides an overview of human resources, training and capacity building activities and progress on mainstreaming HIV/AIDS in the sector. This year, all gender related activities are presented in chapter 13.

5.2 RURAL WATER SUPPLY AND SANITATION

5.2.1 *Water Supply Targets and Achievements*

Table 5.1 sets out the 2006/7 targets and achievements for the District Water and Sanitation Conditional Grant (DWSCG). A total of 3,299 water points were constructed out of the 3,785 planned for the year. The target could not be achieved due to late release from MFPED and delays in setting up procurement committees in the new Districts.

Table 5.1 DWSCG Target and Achievements for Water Supply Facilities

Type of Source	Planned 06/07	Achieved 06/07	% Achieved
Spring Protection	643	591	92%
Shallow Well	1,016	1,007	99%
Deep Borehole Drilling	652	572	88%
GFS Taps	342	335	98%
75m3 Tank	6	6	100%
50m3 Tank with Roof cathment	14	12	86%
50m3 Tank Underground	2	-	0%
30m3 Rain water tank with roof catchment	16	12	75%
20m3 Ferro cement tank	64	58	91%
10m3 Tank HDPE for Pri. Sch	267	211	79%
7.5m3 Tank Ferrocement (Training purposes)	763	495	65%

Table 5.2 summarises the achievements under the District Water and Sanitation Conditional Grant (DWSCG), for 65 UWASNET member NGOs and the 19 WASH cluster members. This reporting is a considerable improvement from last year, and the first time that the WASH Cluster NGOs have reported to the sector in a consolidated manner. The sector standard assumptions for: number of users (Box 6.1, Chapter 6) has been used throughout, apart from NGO rainwater tanks, which have been assumed to serve six people[31].

The facilities constructed by WASH cluster NGOs have not been included when estimating service coverage (Chapter 6) because all facilities are in IDP camps, which are separately reported under section 5.5.

[31] This assumption has been made, as tank sizes are not given.

Table 5.2 Water Sources & Population Served[32]: District Water and Sanitation Conditional Grant (DWSCG (06/07) and UWASNET NGOs (Jan to Dec 2006)

Type of Water Source	No Facilities Achieved		Estimated Population Served	
New construction	**DWSCG**	**UWASNET NGOs[33] (Jan – Dec 2006)**	**DWSCG**	**UWASNET NGOs (Jan – Dec 2006)**
Springs	591	239	118,200	47,800
Shallow Wells	1007	423	302,100	126,900
Boreholes	572	40	171,600	12,000
Gravity flow scheme (GFS) Tapstands	335	190	50,250	28,500
Rainwater Harvesting Facilities	794[34]	1,792[35]	4,676	10,752
Total			**646,826**	**225,952**
Rehabilitation				
Springs	-	14	n/a	n/a
Shallow Wells	-	52	n/a	n/a
Boreholes	754	47	n/a	n/a

5.2.2 *Support and Guidance*

2006/7 saw the completion of a number of key guiding documents and approaches for District local Government as follows:

MWE/DWD prepared a **District Implementation Manual (DIM)** to enhance the capacity of local Governments/stakeholders to carry out water and sanitation activities especially in the rural water sector. The 100-page document (plus 28 annexes on CD-ROM), which is being disseminated, provides a comprehensive overview of the workings of the sector for stakeholders operating at District local Government level. It sets out the policy and institutional environment, stakeholder roles and responsibilities and outlines the procedures to be followed in the sector and is intended as a reference document. This is the first version of the manual to be issued and will continue to be improved with subsequent versions.

A Community Resource Book was prepared to provide communities, and especially any active persons or group within communities (e.g. Water User Groups), with good knowledge in matters concerning the planning for, management and maintenance of water supply and sanitation facilities. The Resource Book also provides guidance on how to improve the hygiene and sanitation practices at community and household level. In addition it outlines the roles and responsibilities of the respective communities, its leaders as well as key bodies and institutions that are involved in the process of implementing, rehabilitating and maintaining rural water and sanitation activities. The Resource book will be translated and made available in at least six of the main languages that are spoken widely in Uganda (Runyakitara, Lugbara, Luo, Ateso, Luganda and Swahili).

A **Participatory Tool Kit and a Training of Trainers Manual** was completed and field-tested and is ready for print. It will be used in community training and awareness-raising. This material focuses on sanitation and hygiene, gender and HIV/AIDs. Along with

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32 Assuming 300 for a borehole or shallow well, 200 for a spring and 150 for a GFS tap.

33 Data from 65 UWASNET members, for calendar year 2006.

34 Different tank sizes used – calculated as set out in Box 6.1.

35 Assumes 6 people per rainwater harvesting facility.

Participatory Monitoring and Evaluation (PM&E) methodologies it will be of use for Training of Trainers (ie district and sub-county extension staff) for community work.

DWD initiated **Drama Performances** in 12 districts between June 2006 and January 2007. The events sensitized communities on hygiene and sanitation awareness, HIV/AIDs and behaviour change. In order to enable Districts to replicate this work, two drama groups in each of the 12 Districts were trained to that they could continue with this method of sensitisation. A film (in Luganda) of was also made of the production for wider circulation (Omunaku Kaama).

Water Sector Technical Support Units (TSUs). In May 2005 MWE/DWD carried out a Mid-Term Evaluation (MTE) of the Technical Support Units (TSUs) as well as the support provided by DWD to the TSUs. The MTE findings revealed that district capacity has remarkably improved because of the support. Despite this, there were capacity gaps which the TSUs were yet to help the districts address at the time. More than 20 new districts and town councils have been created and needed technical support. The MTE noted the need for other sub-sectors (Water Resources, Urban Water and Water for Production) to embrace the concept of TSUs, and ensure that TSUs are the link between DWD and the districts/ towns. This will improve the performance of the sector at LG level.

In FY 2006/7, individual a total of 24 individual consultants were recruited to support the TSUs. Each of the eight TSUs has a Water and Sanitation Specialist, Public Health Specialist and Community Development Specialist. The TSUs are supporting the rural, urban and water for production sub-sectors. The change from use of consulting firms to individual consultants has significantly reduced the cost of providing technical support. The main challenge is the maintenance of the support during the transition period from December 2007 when JPF funding ceases to when the JWSSP starts to fully operate probably in the middle of the next calendar year.

During the Induction for Technical Support Units (TSUs), staff and consultants were provided with a *CD*-ROM of resource materials (policy documents, guidelines/handbooks, technical reports, the DIM) to assist with capacity development of District staff.

Initiatives were also undertaken to improve O&M of rural water supplies and are described fully in Chapter 7, which examines functionality.

5.2.3 *Appropriate Technology*

MWE/DWD carried out innovative developments and dissemination of appropriate technologies, with user involvement. These included:

- Constructing and evaluating pilot plants for iron removal (Chapter 9);
- Documenting the experiences of self supply initiatives. Government supported two NGOs (UMURDA and WEDA) to undertake a **Self Supply** pilot project. This project emphasises community members working for themselves to improve their own water sources, with very little external support.
- Piloting Rope Pump;
- Piloting rainwater-harvesting technologies, testing out the strategy and documentation. Box 5.1 sets out the lessons learned in the pilot.
- Promoting ecological sanitation including developing guidelines, demonstration toilets, development of a national training curriculum.
- Piloting solar pumping technology for small villages.

Box 5.1 Lessons learnt in the Rainwater Harvesting Pilot[36]

Two pilot projects were undertaken by two local NGOs; East Ankole Diocese in Isingiro and Acord in Bushenyi District with support from DWD. The pilot directly led to the construction of 385 dometic roofwater harvesting (DRWH) systems at household level.[37] The tank sizes in both project areas ranged from 5m^3 to 30m^3. The following key lessons were learnt from the pilot phase:

- **Use of existing structures** including community water committees and existent groups (Mbarara district) makes mobilisation of the communities much easier and faster than would have otherwise been if they were totally new structures.
- **Existent knowledge on Rainwater Harvesting** especially in the Isingiro project area led to the successful implementation of the pilot. The communities already had some knowledge of RWH from other initiatives, which made mobilisation easier and faster as the implementing NGO was 'preaching to the converted'.
- **Subsidy issues.** Through the pilot project it was generally recognised that with some support, people are willing to invest in rainwater harvesting as an alternative source of domestic water supply. This has been particularly evidenced by people's willingness and ability to contribute up to 40% of the total cost of smaller rainwater systems and even more for larger rainwater systems.
- **Support from the local leadership** is also instrumental in the success of the project. Both implementing NGOs enjoyed the support of the local leadership because they involved them right from the initial stages of mobilisation, selection of water-stressed parishes, identifying existing groups and monitoring activities.
- **Pre-financing by implementing NGO, and late disbursement of funds for project activities** led to unwarranted delays in implementation of project activities, which demoralised the communities and weakened the relationship already created between the implementing NGO and the community group. Because of such delays, the project, which should have ended in July 2005 ended six months later.
- **Availability and cost of construction materials** greatly undermined the success of the success and pace at which activities were implemented. Beneficiary households in Kitagata sub-county in Bushenyi district experienced difficulty in accessing sand, gutters and cement owing to the location of the sub-county. The cost of transporting sand ranged between UGX 80,000 and 120,000 per tipper depending on the location.
- **The wide area of intervention,** particularly the Isingiro project area caused difficulties in ensuring quality of the work and effective implementation in the required time period and with available financial resources. Moreover some selected parishes were remote, not easily accessible and far apart, which made consistent and close monitoring quite an undertaking.
- **Limited project duration and Resources;** the time allocated for mobilisation and group mentoring (two months) was very short.
- **Shortage of water for construction** was a big challenge as most of the rainwater systems were constructed during the dry season. Households were required to buy water for construction at about sh.500/= for a 20 litre jerricans. A tank of 6m^3 required about 25 jerricans of water, which was quite a strain on the households and led to some people compromising on the curing process of the tank.

5.2.4 *Sanitation Targets and Achievements*

Sanitation hardware achievements through the DWSCG are set out in Table 5.3. Note that these facilities are intended for rural growth centres and public places such as markets, and not for households. Districts only achieved 48% of the planned sanitation facilities partly because of insufficient funding to construct water supplies in rural growth centres from the grant.

[36] Extracted from URWA. 2006. Piloting Domestic Roofwater Harvesting in Bukanga ind Isingiro Counties if Mbarara District and Sheema South in Bushenyi District - End Of Project Report. Uganda Rainwater Harvesting Association, April 2006

[37] 108 systems, inclusive of 27 demonstration tanks were constructed in Bushenyi district and 277 rainwater systems, inclusive of 22 demonstration tanks were constructed in Mbarara district.

Table 5.3 Sanitation Plans and Achievements under the DWSCG

	Planned	Achieved	Cost (UGX)
5stance Public Latr.(Collapsing Soils)	8	10	69,000
5stance Public Latr. (Prefabricated mbrs.)	3	3	6,150
Public Latrines in Growth Centres	97	45	290,528
Eco-san Toilet	54	20	284,251
	162	**78**	**649,929**

NGO Activities. In 2006, NGO activities with respect to hygiene and sanitation comprised: community hygiene/education meetings, home improvement campaigns and radio talk shows. Activities were undertaken to improve household and school sanitation. Details for each District are given in Annex 5-2. The highest proportion of expenditure is on household and public latrines (25% and 22%).

NGOs provided financial support towards infrastructure construction. It is not clear on the extent to which NGOs/CBOs and communities each contribute to the construction of these facilities (UWASNET, 2007). This needs to be examined further given the importance of harmonising approaches in line with the Kampala Declaration on Sanitation.

The National Sanitation Working Group (NSWG) activities have include the following:

i) Sanitation Week 2007:

For the last three years, the NSWG has been working towards raising public awareness and igniting proactive decisions and actions towards improving hygiene and sanitation in Uganda. One of the ways is the celebration of the National Hygiene and Sanitation Week, every third week of March, culminating into the main celebrations on March 22 coinciding with the World Water Day.

The theme for this fourth year's celebrations was; ***"Total Sanitation: Is your neighbour killing you?"*** aimed at stressing the need for communal responsibility and to encourage all citizens to look at their immediate environment to identify and address possible areas of poor sanitation and hygiene. The celebrations were marked by different sanitation activities country-wide. Local Governments carried out activities in their areas as well as regional celebrations in Lira, Tororo, Rakai, and Kawempe division in Kampala. Other activities included:

- **Parliament Photo Exhibition:** A series of sanitation-centred photos (highlighting both good and bad sanitation practices) in a number of districts, was exhibited in the parliament library in the month of March 2007.
- **National Sanitation Song Competition:** A National Sanitation Song Competition was conducted through various local radio stations. A cash prize of UGX 5 milion was split between the winner and runner -up.
- **Student National Essay Competition:** In collaboration with the Wildlife Clubs of Uganda, an essay competition was held for both primary & secondary schools.
- **Special Sanitation Magazine publication (Under preparation)**

ii. Documentation of three Best of Practices in Sanitation:

The Best Operational Practices (BOP) in sanitation initiatives implemented in the districts of Busia (enforcement of by-laws), Gulu (community Health Clubs) and Rakai (community led sanitation) were documented. The report highlights the different BOP approaches as implemented by the different districts, the achievements registered as well as the operational challenges faced and the recommendations for scaling up and replication in other districts.

iii. Collect, Repackage and Simplify the Dissemination of Existing Information On Sanitation And Hygiene In Uganda

There is a lot of information on sanitation and hygiene, which is not in one place and not readily accessible. This activity is aimed at addressing this by information collection, repackaging of documented experiences (e.g. best practices), case studies and research on sanitation as well as relevant policies, strategies, guidelines, standards and tools. They have been made accessible through appropriate channels to national and local stakeholders in Uganda and beyond. These documents have been uploaded on the Uganda Water & Sanitation resource centre website http://www.watsanuganda.watsan.net.

iv. The Design of Financing Mechanisms for the Sanitation and Hygiene Sub-Sector in Uganda – investigate budget line for sanitation and Review of the sanitation Memorandum of understanding MoU

The objective of this work is to assist the sector to ensure that finance for sanitation and hygiene is both sufficient and effective. The focus is on the financing mechanisms, appropriate to Uganda's context, which can reduce any systemic gaps in financing the needs of sanitation. A critical consideration within this objective is the need to work within the on going decentralization reforms in the country.

Along side the budget line study, is also a study aimed at the institutional analysis for the delivery of sanitation and hygiene promotion and improvement of environmental health outcomes in Uganda. The study is examining existing institutional arrangements and accountability structures (both at the national and sub-national levels) that are in place to help implement the MOU.

v. Learning and sharing of Information and Knowledge on Sanitation and Hygiene in Uganda.

Many sector professionals attend international, local and regional conferences, symposia, seminars and workshops but there is no feedback or sharing mechanism to other stakeholders who did not attend. Some staff of organisations do not share information or documentation from such events with their colleagues who are in their learning curves. A learning and sharing event was held on September 6, 2007, and attended by over 35 participants from local governments, Technical Support Unit, NGOs central government officials and development partners. The intention is to hold such an event at least twice a year.

vi. National Hand Washing Campaign - Uganda

Scientific studies show that the simple act of washing hands with soap at key times can have the single greatest impact on reducing the infant mortality due to diarrhoea (by 47%) and Acute Respiratory Infections like pneumonia (by 30%).

A formative research carried out in 10 districts revealed that only 14% of mothers of children under five wash their hands with soap after visiting the toilet, 19% of the caregivers were observed to wash hands with soap after cleaning a baby's bottom and only 6% wash their hands before feeding a child.

A communication strategy for handwashing and soap has been developed and the campaign is being piloted in 5 districts of Kabale, Mbale, Kiboga, Lira and Kawempe division in Kampala.

In past year, Mukwano Industries joined the partnership of the campaign and pledged to contribute resources for two years. Initial funding (USD 740,000) was received from Danida and additional funding has since been received from DFID (USD 640,000) and UNICEF (USD 80,000).

The biggest challenge so far has been institutionalizing the campaign. There is an urgent need for Hand washing with soap to be incorporated in work plans of line ministries through all established structures at National, district, sub county, parish and village levels. There is also need for sector NGOs to incorporate handwashing in their work plans.

Institutionalization will be better aided by policy directives by central government, local Governments and donors (in the case of NGOs). Such directives most especially by donors of NGOs within the sector will assist in ensuring effective promotion and supervision of community based handwashing initiatives using already existing funding arrangements.

Additionally, efforts need to be made so that Ministry of Gender, Labour and Social Development becomes an active partner in this campaign as its structure which uses Community Development Officers (CDOs) has proved to be one of the key partnerships for implementation in some pilot districts like Mbale.

5.3 URBAN WATER SUPPLY AND SANITATION

5.3.1 *Targets and Achievements in Large Towns*

All targets set for the 2006/07 were actually achieved as set out in Table 5.4.

Table 5.4 Targets and Achievements for Large Towns

Item	Achievement June 2005	Achievement June 2006	Target (FY 2006/07)	Achievement (June 2007)
Coverage	68%	70%	71%	71%
NRW	33.8%	29.7%	32.0%	32.5%
Water works	n/a	n/a	n/a	n/a
Production wells drilled	n/a	n/a	n/a	n/a
New Connections	22,218	28,521	23,560	24,418
Total no. of Connections	123,046	152,138	175,698	180,697
Water Produced million m^3	58	58.1	60.0	61.2
Staff per 1000 connections	9	7	8	7
Metering Efficiency (%)	98%	99	99%	99%
Collection Efficiency[38] (%)	89%	90	93	93%
Water meters installed	n/a	n/a	n/a	n/a
Turnover Ushs billion	53.7	58.0	68.0	68.0
Mains Extensions (km)	294.5	104.2	76.4	56.4
Waterborne (flush) toilets	n/a	n/a	n/a	n/a
Ecosan toilets	n/a	n/a	n/a	n/a

5.3.2 *Targets and Achievements in Small Towns*

In FY 2006/07, piped water supplies for a total of 9 small towns and RGCs were completed at a total cost[39] of UGX 7,171,636,741 (USD 4,218,610[40]) to serve a design population of 71,100. 89% of this investment was for schemes in small towns, which currently serve an estimated 44,420 people and are designed for 62,900. The RGC schemes serve an estimated 4,500 people and are designed for a population of 8,200. Details are given in Chapter 3.

Table 5.5 shows the achievements with respect to small towns under the water authorities. Only 64% of the target of house connections was achieved. This is mainly because water supply works in the towns of Sironko, Soroti, Kaberamaido, Yumbe, Iganga, Mpigi, Mityana, Kigumba, Apac, Nebbi, Pakwach are still ongoing. In addition, construction works delayed due to negotiations and final documentation of the South Western Towns Water and Sanitation Project, which is developing into a Water and Sanitation Development Facility. The towns of Katerera, Kyambugimbi, Kitagata, Bikurugu, Rushere and Rugaaga were not completed as scheduled.

[38] Includes arrears

[39] Costs include borehole drilling and the construction. For Sembabule, Kangulumira and Nagongera water supplies, the cost are inclusive of construction supervision as well.

[40] USD 1 = Ushs 1,700

Table 5.5 also provides data on the performance trends with respect to operation and maintenance of 57 small towns that are monitored by the Water Authorities Division of MWE/DWD.

Table 5.5 Targets and achievements for small town water and sanitation projects

Outputs	Unit	Achieved 2005/06[41]	Achieved 2006/07	Planned 2006/07	% Achievement
Construction					
Treatment Works	m3/day	Data reported for first time 06/07	8,950	8,950	100%
Reservoir Capacity	m3	Data reported for first time 06/07	985	3,005	33%
GW Pumping Stations	No.	Data reported for first time 06/07	5	9	56%
SW Pumping Stations	No.	Data reported for first time 06/07	3	3	100%
Production Wells	No.	Data reported for first time 06/07	1	0	0
Pipelines Laid	Km	Data reported for first time 06/07	239.14	233.24	103%
Public Latrines/Toilets	No.	Data reported for first time 06/07	12	11	109%
Operation and Maintenance					
New Connections	No.	2,652	1,562	2,436	64%
Active Connections	No.	13,379	15,420	12,114	93%
Public standposts	No.	Data reported for first time 06/07	12	21	57%
Billing Efficiency	%	Data reported for first time 06/07	88%	90	98%
Collection Efficiency	%	82.6%	94%	94	100%
Unaccounted for Water	%	20.9%	22.2%	20	90%
Water Sold	m3	1,613,286	1,646,320		

The Urban Water Sub-sector aims at improving the health of the beneficiaries through provision of safe water and sanitation facilities in areas where implementation of water supply systems is being carried out[42].

Sanitation: On the issues of sanitation and hygiene the urban sub- sector is limited to development of public sanitary facilities and promotion of good practices of hygiene and sanitation in small towns and rural growth centres.

Sanitation and hygiene activities in small towns are implemented through construction projects for water supplies, of which the following achievements were registered in the reporting period:

- Construction of 43 public water borne toilets in Masindi, Mubende, Soroti, Sironko and Kaberaimaido, Iganga, Mpigi, Mitiyana, Kigumba, Apac, Pakwach, Hoima, Nebbi and Kyatiri, BujenJe and Bwijanga.
- Construction of Sewerage systems in Masindi, Hoima and Iganga.
- 11920 metres of storm water drainage in Masindi, Mubende, Iganga, Mitiyana, Nebbi and Pakwach.

[41] For purposes of comparison between 2005/6 and 2006/7, figures for Masindi, Hoima and Mubende have not been included. These town water supplies were handed over to NWSC in June 2006.

[42] The mandate of MWE regarding sanitation and hygiene activities is stipulated in the Memorandum of Understanding that was signed between the three line Ministries: MWE, MoES and MoH.

- Sanitation and hygiene campaign/ promotions with 28 sanitation seminars, 990 Home visits, 57 Sanitation plays /drama staged, 228 Radio spots aired, 2000 posters distributed to promote household, institutional sanitation, Ecosan plays staged and carried out baseline surveys
- A total of 178 Ecological sanitation toilets and pit latrine are undergoing construction in the towns of Iganga, Mpigi, Mitiyana, Kigumba, Apac, Pakwach and Nebbi.
- 5,600 Storm water drainage channels in the towns of Hoima and Iganga.

The key issues on with respect to sanitation promotion in small towns as follows:

- Lack of Urban planning in the towns.
- Limited space for construction of pit latrines in small towns due to rural urban migration.
- Limited returns to capital investments due to low cash flows from user fees.
- Lack of sustainable management of solid waste due to huge volumes of garbage in towns.

5.3.3 *Initiatives for the Urban Poor*

The urban sub-sector tried to address the water needs for the urban poor by providing water service through kiosks and public stand posts. However due to the high cost of providing and maintaining the public kiosks, the recent trend in the provision of water encourages house connections or yard taps as opposed to public stand pipes. However, stand-posts remain effective within the urban slum areas where there are very few permanent structures. In line with this during the FY 2006/2007, a total of 122 standposts were installed by NWSC.

Table 5.6 Trend of Public Standposts/kiosks Installed

Year	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007
New Kiosks	277	382	269	1,255	122
Total Kiosks	2,962	3,344	3,613	4,868	4,990
% Growth	-	13%	8%	35%	2%

Within the framework of the Kampala Water Supply and Sanitation expansion programme NWSC has now established a Community Management Unit (CMU) operating mainly under the urban poor project. It has been able to document some information such as the number of connections in the urban poor settlements, which number 6,092. It is envisaged that in future, the CMU will evolve to cover all urban poor centres within the Corporation. Another project called Water Supply and Sanitation in Kagugube is on-going. The purpose of this project is to improve water supply in the slum Areas.

5.3.4 *National Water and Sewerage Internal Strategies*

The following internal strategies were developed by the National Water and Sewerage Corporation within the reporting period to improve performance:

Internally Delegated Area Management Contracts (IDAMC) Phase II: During the financial year 2006/07, the NWSC Management launched the second phase of the IDAMC's. The emphasis of the new contracts is to further increase operational autonomy, accompanied by the quest for innovation, improve service reliability and the distribution of services within the various areas. One of the key changes in the contracts was the emphasis on performance based pay; an indication of risk transfer and accountability to the areas. Furthermore, penalties for failure to achieve targets and misreporting of performance were included.

The Simplified Sewer Connection Policy: In order to bolster the number of new sewer connections, the NWSC Board approved the implementation of a new sewerage connection policy, which became effective from 1st July 2006. The guidelines are: i) all customers whose premises are within a distance of 60 meters from NWSC sewer mains are covered ii) the NWSC provides all materials for installation of sewer lines and iii) customers are required to pay for the connection fee only.

Customer Care Improvements: During the year, NWSC management continued with its emphasis on improving customer care and ensuring that services are delivered efficiently. The Corporation continued to enhance the performance of the Customer Call Centres and continued to partner with various Commercial Banks in the promotion of the Direct Debit Payment System and Over- the Counter Bill Payments.

Reinforcing Performance Standards through the Checkers System: In line with the implementation and consolidation of the IDAMCs, NWSC developed the "checkers system" to enhance the monitoring role of the Head Office and to improve efficiency in the operations of the Areas. The checkers system was devolved downwards to the Kampala Area and has undergone refinement to make it more effective. Guidelines for the monitoring process were reviewed, while the checking teams were reconstituted by putting in place multi-disciplinary teams to monitor area operations.

External Services Expansion: During 2006/7, the Corporation continued with benchmarking and collaborating with other utilities within the region. Through the External Services Unit (ESU), professional management/operational advisory services were offered to Nairobi City Water and Sewerage Company Ltd and Dar-es-Salaam Water and Sewerage Corporation (DAWASCO). During the same period, training programmes were carried out for various water practitioners from within and outside Uganda. They benefited the local water private operators, the Technical Support Units (TSUs) under DWD, and MWE staff within the Urban Water Services Division.

ISO Certification: Another key milestone was the ISO certification of nine areas, namely, Jinja, Tororo (certified in 2003), Entebbe, Mbale, Masaka, Soroti (certified in 2006), Kampala, Gulu, and Lira (certified in 2007). ISO Certification refers to the adoption of acceptable and respected standards of a business unit.

5.3.5 *Initiatives for Small Towns*

The following internal strategies were developed by the Small Towns Water and Sanitation programmes within the reporting period to improve performance:

Output Based Aid (OBA) involves performance-based subsidies to improve access to basic services for the poor. The Global Partnership on Output Based Aid (GPOBA) is a multi-donor trust fund administered by the World Bank. This specific OBA project aims to improve access to Uganda's poor living in specific small towns and RGCs. Private Operators will be competitively selected to extend and expand existing systems in the case of small towns, or build RGCs. The private operators will be compensated on an output-basis, after designated results have been achieved. The private operators will hold 5 to 10 year contracts with local water authorities to provide sustainable services of agreed quality to paying consumers. A total of 10 small towns and rural growth centres have been selected.

The **Water and Sanitation Development Facility (WSDF)** is a funding mechanism for water supply and sanitation facilities for rural growth centre schemes, small towns piped water supplies and large gravity flow schemes. It intends to promote a demand responsive approach where rural growth centres and small towns to be served must apply through their respective District Water Offices. All applicants will be subject to a selection process. The successful applicant towns/RGCs are assisted by the staff of WSDF to develop piped water supply systems utilising low cost technologies as far as possible. The funding mechanism has been started and piloted in the South West (WSDF–South Western Branch), and if successful will be subsequently rolled out to other areas of the country.

A total of 25 small towns and rural growth centres in the 17 Districts of south-western Uganda have been selected and approved for piped water supplies from the facility[43].

5.4 WATER FOR PRODUCTION

5.4.1 *Targets and Achievements*

Table 5.7 presents the achievements for WfP in 2006/7. Capacity building activities were undertaken for the communities in all windmill sites in Karamoja. Achievements of water storage capacity are presented in chapter 10.

Table 5.7 Water for Production Achievements (2006/7)

	Indicator	Achievement	Plan	Achieved	Perf. (%)	Remarks
Construction	Windmill-powered systems	6 windmill powered borehole based watering systems installed in Karamoja	7	6	86%	7th site in-accessible due to heavy rain
	Valley tanks	2 VTs in Sembabule district	2	2	100%	
	Dam reconstructed	Reconstruction of Kailong dam in Kotido district ongoing	1	0	70%	Works suspended due to insecurity
Training	Training of trainers	Training of trainers for the 8 completed faclities in Mbarara/Kyenjojo district	1	1	100%	
	Training of water user committees	Training of 8 water user committees for constructed facilities in Mbarara district	8	8	100%	Snag rectification not completed
Study and Design	Feasibility study report	Studies completed - bulkwater supply: Nakasongola, Rakai	4	3	75%	Draft reports submitted
	Feasibility study report	Study completed for design of livestock watering facilities under NLPIP	1	1	100%	
	Design report	Designs for rehabiliation of dams under NLPIP	8	8	100%	Draft final designs submitted
	Design reports	Design: Nshenyi & Rubare valley tanks; Bwanalaki dam, Kakinga; multipurpose water supply development from River Katonga	5	4	80%	Draft final designs for river Katonga have been submitted
WfP component	MoU	Signing of WFP Component and MoU Addendum for JPF	1	1	100%	
	TA procured	Procured consultant for TA for inception phase.	1	1	100%	
	Pilot sites selected/ verified	Initiation of site identification and verification process	8	6	80%	In progress

[43] Rwamabondo, Ibanda, Kilembe, Matete, Kibiito, Isingiro, Hima, Bwera, Kyegegwa, Kasensero, Rwimi, Kazo, Rubindi, Gasiiza, Natete, Kagashe/Nyakibaale, Kikagati, Rwenshaka, Rubona, Kakuuto and Kiruhura Town Council. This will be in addition to those prior identified centres of Kitwe, Nyakagyeme, Rwentobo, Kitagata, Katerera, Kyabugimbi, Rugaaga, Bikurungu, Rushere, Kanungu, Kabira, Mutara, Bwanga/Kiyenje, Omungyenyi, Kagarama, Nyakyeera, Kanyabwanga, and Butare

5.4.2 *Private sector and NGO activities*

In a bid to increase public and private sector involvement in water for production activities, MWE has initiated procurement of construction equipment for construction of dams and valley tanks by private sector and local authorities in Kiruhura, Isingiro, Mbarara and surrounding areas. The equipment will eventually enable local authorities and the private sector to undertake construction of small volume water reservoirs. This will enable farmers to construct private facilities.

Currently, four (UWASNET member) NGO's are actively involved in development, research, training and sensitization activities related to Water for Production[44]. In addition UWASNET reported that two valley-tanks were constructed in Mbarara district (Ankole Diocese) at a cost of UGX 115 million and four valley tank management committees were trained in Arua distirct. It should be noted that cases have been observed of GFS water being utilised for dairy farming and to expand charcoal stove production in Kabale (UWASNET, 2007).

5.4.3 *Information Management*

In recent years, lack of information on WfP facilities has affected ability to plan, monitor and measure performance of the sub-sector. In order to fulfil its responsibilities, MWE is setting up structures for information management by (i) undertaking a comprehensive assessment of existing facilities and operational status and (ii) developing a database[45].

5.4.4 *Preparation of a bulk water transfer strategy*

In order to accelerate the water storage and the reliability of services, a bulk water transfer strategy has been developed. Ideally, these schemes will be constructed in various areas to ensure easy access to water for productive purposes. It is planned to initiate construction of bulk water schemes to transfer water in large quantities from places where water exists in plenty to places suffering from water scarcity.

5.5 NORTHERN UGANDA[46]

5.5.1 *Status*

The 22-year old Lord's Resistance army insurgence led to the displacement of over 2.2 million people from their homes into Internally Displaced Persons (IDP) camps in Amuru, Gulu, Lira, Oyam, Apac, Kitgum and Pader Districts. Since the onset of the conflict, the international community has responded with emergency aid including the provision of food, as well as health, education, water and sanitation infrastructure and hygiene promotion.

With the onset of peace talks in Juba at the beginning of 2006, and the signing of the Cessation of Hostilities in August 2006, some IDPs have returned to their original villages, and others to transition sites. So far, 2007 has witnessed an accelerated return process as a result of improved security, greater freedom of movement and increasing access to land.

In the Acholi sub region (Amuru, Gulu, Kitgum and Pader), the majority IDPs are leaving the 'mother camps' to transit locations. Most (80%) have not returned all the way 'home'. In the Lango sub region (Apac, Lira, Oyam), the majority (82%) of IDPs who have left the mother camps have returned to their original homes.

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[44] World Vision: active in central and western regions; World Food Programme: active in northern region; FIRD: active in Kotido District; Water for Production Relief: active in Isingiro and Sembabule Districts.

[45] In 2006/7 a pilot baseline survey of 6 Districts of Abim, Apac, Ingiro, Kiruhura, Nakasongola, Masindi was carried out.

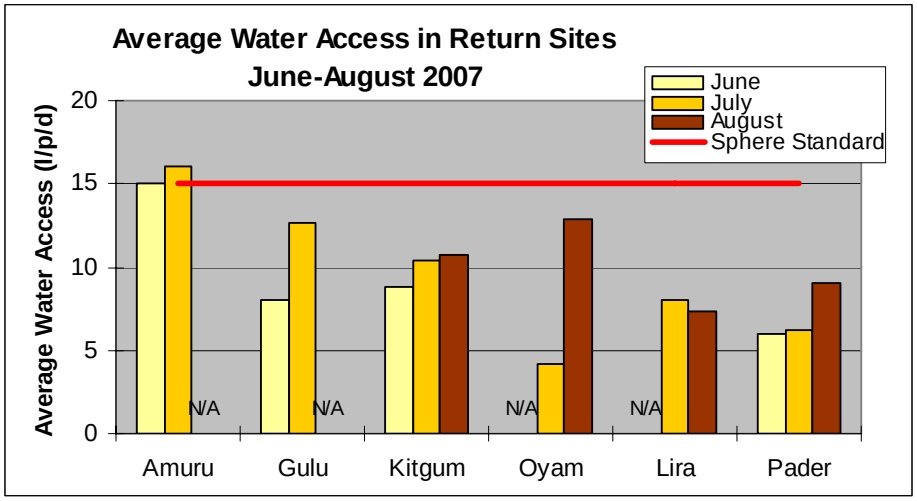
[46] Section adapted from WES Sector Performance Report – Northern Uganda Humanitarian Response (UWASNET, 2007)

In both sub-regions, the provision of basic services has been insufficient to keep up with movement of the population, while the number of transit and home locations is increasing. As of July 2007 approximately 380 transit locations had been added to the 120 mother camps in Acholi sub region alone.

5.5.2 *Access to Water and Sanitation in IDP Camps and Return Areas*

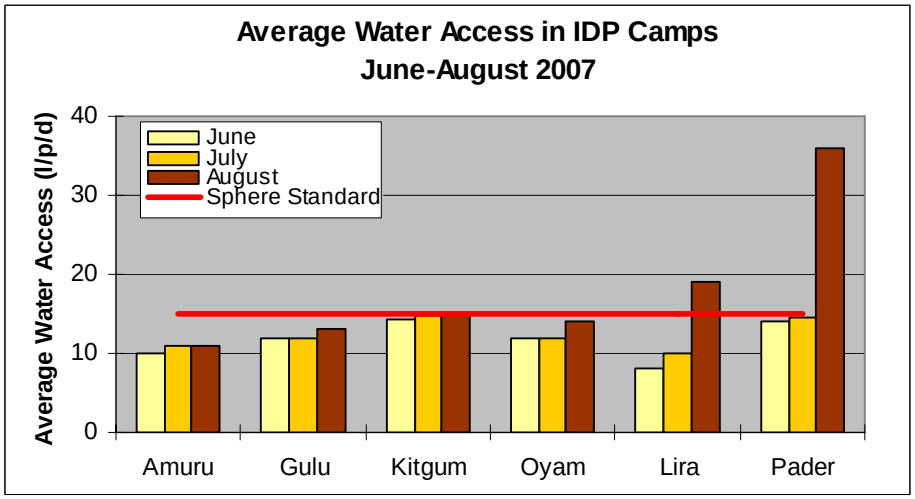
The SPHERE standards stipulate that in an emergency situation the distressed persons require the provision of 15 litres of water per person per day and there should be mo more than 20 persons per latrine stance. Although the water situation in the return sites is still inadequate, substantial improvements were recorded in Oyam district, with an average water supply increased to 4-13 l/p/day and it improved in Pader from 6 to 9l/p/day (Figure 5.1).

Figure 5.1 Average water access in return sites, June – August 2007



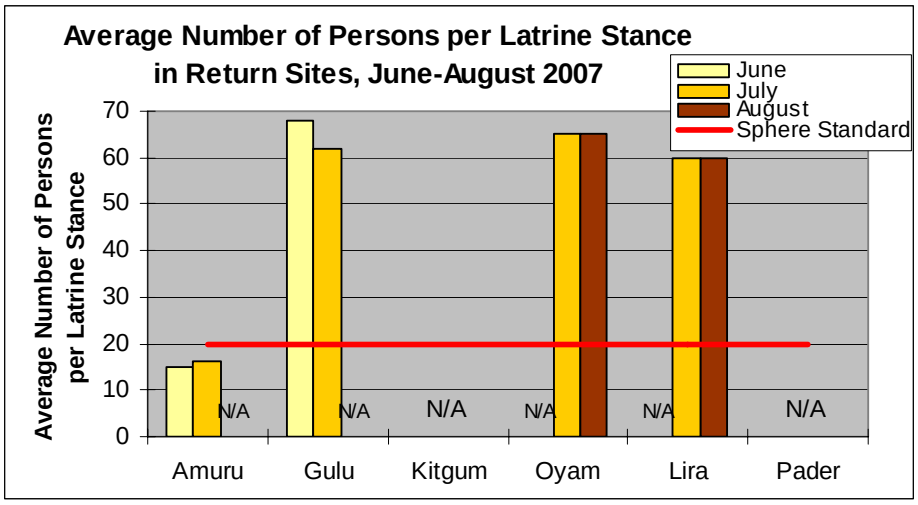
Water Situation in Original IDP Camps. Implementation of Water activities continues actively in IDP camps. In August, Pader district recorded a very high increase, approximately 50 percent increase from 15 to 36l/p/day, due to completed boreholes and decreasing populations in the camps. Moderate increase were reported in other districts (Figure 5.2).

Figure 5.2 Average water access in IDP camps, June – August 2007



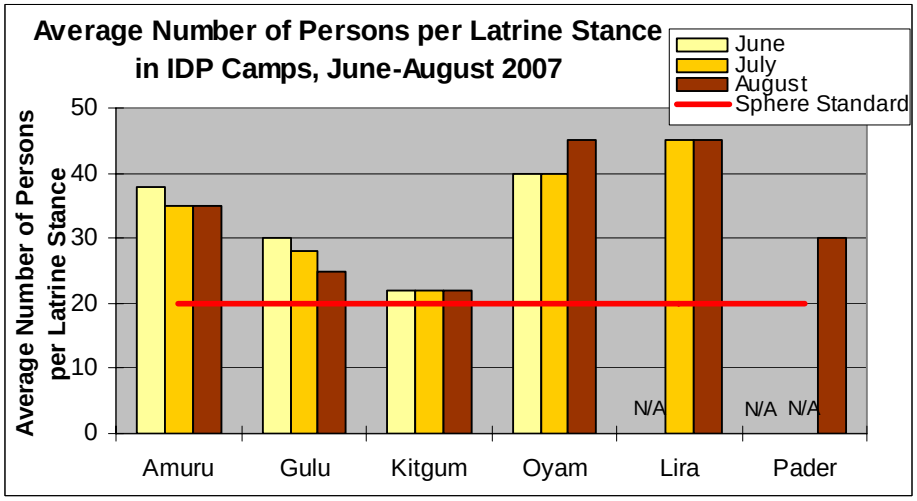
Access to latrines is a major problem in the return sites as shown in Figure 5.3.

Figure 5.3 Average number of persons per latrine stance in return sites, June – August 2007



Sanitation Situation in Original IDP Camps: Access to sanitation facilities in the IDP camps, seems to be stagnating (Figure 5.4). No improvements were recorded in Amuru, Kitgum and Lira districts and Oyam district actually witnessed a worsening scenario from 40 to about 45 persons per latrine stance.

Figure 5.4 Average number of persons per latrine stance in IDP Camps, June – August 2007



In order to minimise the supply of contaminated water from deep and shallow wells in the IDP camps, and respond to the O&M short falls of hand pumps, Government has continued to support the installation of Motorised Reticulated Water Supply Systems in areas where people are displaced.

Table 5.8 Summary of piped water schemes in IDP camps completed in 2006/07

District	Camp Name	Design Population	Contract Price (UGX)
Kitgum	Palabek Kal	28,000	575,225,418
Pader	Porogali	2,173	365,957,187
Gulu	Awere	4,665	321,687,858
Kaberamaido	Anyara & Idamakan	5,021	497,199,589
Lira	Aloi	60,000	459,437,302
Masindi	Bweyale	8,000	537,721,682

5.5.3 *WASH Cluster*

The Inter-Agency Standing Committee (IASC) cluster approach was established in Uganda as part of the UN Reform Agenda in 2005 in order to improve co-ordination of organisations and stregthen partnerships. UNICEF was requested to assume the leadership role for the Water and Sanitation (WASH) Cluster in Uganda. The Uganda WASH Cluster embraces over 50 members from largely UN agencies and International NGOs under its umbrella.

Humanitarian response in Northern Uganda is jointly implemented by the WASH cluster Members and their partners (ICRC, MSF, District local Governments, Central Government, Local NGOs, community and religious leaders). Activities are largely supported with funds from International donors. Annex 5-6 provides an overview of donor contributions.

5.5.4 *Functionality in IDP Camps*

"Due to the high concentration of people in the IDP camps, and the need to provide potable water to a minimum of 15l/p/day, boreholes were drilled and reticulated systems were put in place. These systems were either diesel driven or solar powered. NGOs trained and paid pump mechanics to maintain the pumps; provided essential spare parts and fuel in the case of diesel systems. However, as NGOs shift their focus of activity into return settlement sites or leave the districts, the systems are being progressively handed over to the Local Governments to run them. It is estimated that by the end of the year 2007, a total of 54 diesel driven systems and 16 solar systems will be handed over to the Local Governments and an estimated UGX 42 million (Table 5.9) will be required monthly as running costs, which the Government will have to fund. Table 5.10 below depicts a summary of the systems and expected maintenance costs per districts" (WASH Cluster Extract, UWASNET, 2007).

Table 5.9 Mechanised Water Systems to be handed over to Districts in 2007

District	Number of Solar Systems	Number of Diesel Systems	O&M Cost (UGX/Month)
Amuru	0	11	9,251,025
Gulu	2	10	8,720,750
Pader	5	18	10,130,700
Kitgum	8	7	4,849,200
Lira	1	8	9,364,700
Total	**16**	**54**	**42,316,375**

5.5.5 *NGO Investments and Achievements*

Table 5.10 shows the contribution made to the sector by WASH Cluster members in terms of water supply facilities. The overall contribution by NGOs to IDP areas in north and north-eastern Uganda in 2006/7 was UGX 24 billion. This includes service delivery and project support costs (Annex 5-6).

Table 5.10 Water Sources by WASH cluster NGOs (Jan 2006 to Dec 2007)

New construction	(Jan – Dec 2006)	(Jan – Aug 2007)
Springs	20	
Shallow Wells	15	
Boreholes	41	333[47]
Gravity flow scheme (GFS) Tapstands		
Rainwater Harvesting Facilities		
Motorised reticulated systems	41	

[47] 69 boreholes in IDPs and 264 boreholes in resettlement areas

5.6 PAF MONITORING

PAF monitoring is the periodic appraisal of sector activities, and it is a sector requirement, by Government since 1999. The activity is intended to facilitate early identification and onspot correction of sector policy, operational and management issues, in order to enhance efficiency and effectiveness in the delivery of sector services. PAF monitoring is guided by the issues extracted from the various district and project reports on one hand, and the demands of the sector performance measurement framework (2004), which emphasizes the 10 golden sector indicators.

During the year, the Ministry visited a total of 31 districts. The information gathered has been used to beef-up various sector documents, including the Ministerial Policy Statement, Sector Budget Framework Papers, Ministerial Contribution to the Budget Speech, the Quarterly performance reports/workplans required by the MFPED and the OPM, as well as this report.

Staffing - The District Water Office structure recommended by the Public Service Commission is lean. The recommended structure provides for just 2-3 key positions in the District Water Office. Even then, only 11 out of 16 districts (68.8%) do have substantive DWOs and only 11 out of the expected 32 substantive Engineering Assistants (34.4%) are in place. To ameliorate the staffing situation, MWE has advised CAOs to second and/or recruit at least 3 officers to strengthen the planning, mobilization and sanitation functions in the District Water Offices and also secure County Water Officers (one per county).

Office Accommodation and Equipment - Apart from the new districts (such as Bullisa, Oyam and Namutumba) which started during the FY 2006/07, the rest of the districts have good and spacious water office blocks with good furniture and reasonable basic equipment to enable them perform. The new districts were given start-up funds to secure improved office space and construction work was already in progress in Oyam.

Financial and Physical performance – Generally, districts received the funds budgeted and released under the DWSDCG and the funds for the O&M of small town water supplies. The Performance data from other development partners (esp. NGOs and other government programmes such as LGDP and NUSAF) is not readily accessible, by both the districts and the monitoring teams.

Water Source Functionality - While functionality is reported to be generally improving (from 80% in 2004 to 83% in 2006/07), there are districts (such as Nakapiripirit, Sembabule Masaka. Bullisa, Gulu, Pader, Kitgum, and Oyam) where the situation attracted the attention of the monitoring teams. Functionality rates were: Nakapiripirit (49.6%), Sembabule (62.7%) and Masaka (67.7%). In Busembatia Town Council, 34% of the connections were reported inactive at the time of spot check. The key factors put forward to explain system failure, include unfavourable geological conditions, poor water quality, difficulties in accessing spareparts, low community involvement and poor siting and supervision of construction works.

5.7 TRAINING AND CAPACITY BUILDING

The sector continued to invest in training and capacity building for both the central Government and local Government personnel involved in the implementation of Water and Sanitation activities at various levels. These include short tailor made courses, graduate and post graduate academic programs at local universities, and field attachments for fresh graduates of engineering and social sciences (Figure 5.5).

Figure 5.5 Expenditure on training and capacity building programs (2006/07) (UGX)

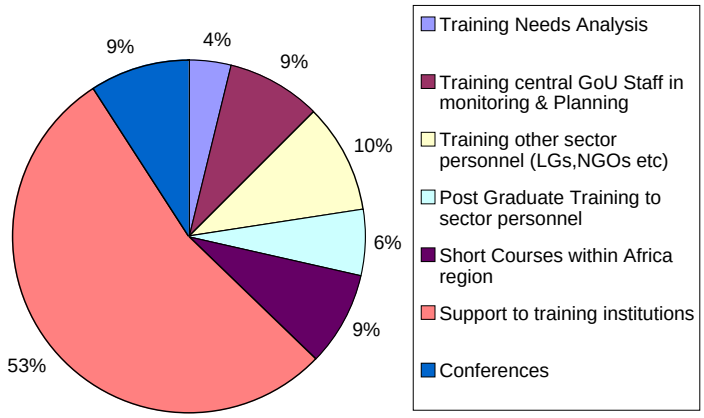


Table 5.11 Staff trained by sector FY 2006 – 2007

	Short Courses	Masters Degrees	Bachelors Degrees	Conferences
DWD/MWE	38	2	4	9
Local Government/Private Sector	28	2	3	2
Total	**66**	**4**	**7**	**11**

Training Needs Assessment (TNA) was concluded for MWE and DWRM.

WAVE Pool training and Capacity Building program: is a new training programme in Kenya, Uganda, Tanzania and Zambia (period 2007-2010) which focuses on professional advances/continued training, innovative approach: interactive, participatory, self-guided by regional partners and learning teams, the content is addressing selected managerial aspects to improve the performance and competence of mid-management staff.

The objective of the WAVE Pool is to establish a regional Pool of regional experts and qualified trainers/lecturers in close cooperation with partner institutions.

In FY 2006/7 WAVE Pool members have designed a draft practically oriented training module on Non Revenue Water to be used for training of private water operators and members of the water boards.

UMI Course: In line with the MoU signed with Uganda Management Institute (UMI) in 2004, MWE supported UMI to run the course on *Planning and Management of Water and Sanitation Technologies for Low Income Communities.* The course is primarily attended by, staff from the local governments, NGOs/CBOs and the private sector. MWE remits funds to UMI annually to cover tuition fees and administrative costs. This is the last year MWE will support UMI to run this course, thereafter it is expected to be streamlined as one of the standard courses.

The sector has continued to experience challenges in training and capacity building for the local government personnel. These include among others the high staff turn over and unclear or temporary working terms for most of the staff due to delays in filling of the staff positions by the districts. This was confirmed by the PAF monitoring report for the FY 2006/07.

5.8 MAINSTREAMING GENDER AND HIV/AIDS

In 2006/7, MWE mainstreamed cross cutting concerns (gender and HIV/AIDs) in the District Implementation Manual and Community Resource Book to develop capacity and improve performance of district local Government services to communities. further details of gender mainstreaming activities are given in Chapter 13.

DWD in 2003 developed a strategy for mainstreaming HIV/AIDS. In 2006/7 an HIV/AIDS workshop was held for MWE and MWE staff. It raised issues related to vulnerability of male and female staff at the workplace. MWE took up the fight against HIV/AIDS at its very doorstep by organizing tests for staff, in collaboration with AIDS Information Centre (AIC). Only 48 staff members (8%) used the opportunity to be tested. It remains a challenge to encourage more staff members to undergo testing.

Routine monitoring of implementation at district level by MWE staff found out that in Pallisa district, HIV/AIDS messages were integrated in all software activities in the sector as required. In Masaka district it was found that HIV/AIDS activities were only handled while constructing valley tanks. During an HIV/AIDS session at community level in Sembabule District in October 2006 the vulnerability of pastoralist dominated communities in terms of acquiring HIV/Aids was discussed. Clearly, HIV/AIDS needs to be fully integrated in the water for production sub sector. A situational analysis should be undertaken together with learning from other organizations regarding the socio-cultural context of pastoralist societies and impact of HIV/AIDS on community management of water for production facilities.

In conclusion, the HIV/AIDS Strategy need to be disseminated to districts and simple guidelines on how to integrate HIV/AIDS in the sector activities are required.

5.9 JOINT WATER & SANITATION SECTOR PROGRAMME SUPPORT 2008–2012 (JWSSPS)

The Government of Uganda, together with the present Sector Development Partners[48] and NGOs, recently concluded the process of formulation of a Joint Water and Sanitation Sector Programme Support (JWSSPS) for the period 2008 – 2012. The preparation process started early 2006 and was completed in July 2007.

The objective of the Joint Water and Sanitation Sector Programme Support (JWSSPS) programme is "*To support the water sector to improve its fiscal and physical effectiveness so as to more efficiently achieve its targets and contribute to poverty eradication and better health for Ugandans.*" This objective is fully aligned to the sector objectives and to pillar 2 and pillar 5 of the Poverty Eradication Action Plan (PEAP).

The expected outcome will be a significant contribution to the achievement of sector targets, including increased cost-effectiveness (lower unit cost for quality services and hence more coverage per investment); increased functionality of facilities; improved sub-sector allocations leading to more equitable distribution of services; increased private sector involvement (plus related leveraging of additional resources and higher efficiencies); improved environmental performance especially related to the adoption of Integrated Water Resource Management (IWRM); and, potentially increased future budget allocations to the sector as it demonstrates its efficiency and cost effectiveness in poverty alleviation and thus justifies an increasing share of the national poverty expenditure.

This JWSSPS represents a corner stone in harmonizing Development Partners' support worth 150 Million USD to the Ugandan Water and Sanitation sector based on the Ugandan Joint Assistance Strategy (UJAS) and the Partnership Principles combining different funding modalities ranging from:

i. Sector Budget Support,
ii. Basket Funding (JPF) and

[48] Signatory DPs to the JWSSPS were DANIDA, Sida, DFID, German Government, AfDB, Austria and EU.

iii. In-kind support for technical assistance.

Furthermore it crosses over line ministries (e.g. for sanitation and hygiene: Health, Education, Water) and includes collaboration with NGOs in critical areas. This is certainly very unique in the development co-operation landscape in Uganda and the Programme could emerge to become an outstanding model-case within Uganda and for the Region as a whole.

The JWSSPS has a very strong focus on sanitation and hygiene and puts emphasis on challenges in the area of Water Resource Management emerging from climate change and population growth. There are 7 component areas under the JWSSPS, reflecting the division of responsibilities and nationally identified programmes in the national sector framework that will be supported by the present donors:

i. Rural water supply and sanitation - RWSS
ii. Small towns water supply and sanitation - STWSS
iii. Large towns water supply and sanitation - LTWSS (only capacity building/urban reform)
iv. Sanitation
v. Water Resources Management - WRM
vi. Sector Programme Support - SPS (only capacity building/sector reforms)
vii. Water for Production – WfP

In total, an equivalent of 1,410,000 people in rural areas, 373,000 people in rural growth centers, and 155,000 people in small towns, will be directly served with water and have access to basic sanitation and hygiene facilities.

A very elaborate chapter of miles and benchmarks describes clear checks and balances for the implementation of the JWSSPS and is the basis for a clear monitoring framework which is to be made operational in the inception phase of the Programme. This is the key element and shall be the basis for shifting funding modalities gradually towards Sector Budget Support.

Under the JWSSPS framework, some critical programme management improvements have been agreed. The important ones are the following:

- The current Joint Partnership Fund arrangement with designated component managers will be changed and aligned to Government systems with existing reporting lines for relevant component areas.
- The current Programme Management Committee for the JPF will be dissolved and responsibility will be taken over by the Water and Sanitation Sector Working Group (WSSWG) with its sub-committees.
- Reporting formats during the inception phase will be aligned with the Government quarterly reporting formats and therefore ease the administration burden.
- Fund flows will be aligned to the GoU financial year system.

The above arrangements call for rigorous and disciplined monitoring and follow-up by the sector and a highly effective functioning of the WSSWG including all its sub-committees.

The JWSSPS has been formulated with flexibility for inclusion of future support to the sector. New financial resources will be needed especially after 2009 when ADB and Sida funding will be ending. It is desirable that all the future/additional support to the sector shall be under the JWSSPS framework. This will require commitment and negotiation discipline from both sides, from Government of Uganda and from Development Partners in order to strive for increased aid effectiveness as set out by the Paris Declaration on aid effectiveness.

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CHAPTER 6
Access

Access to improved water facilities is essential to reduce the burden faced by women and children, improve health, facilitate economic development and alleviate poverty.

Director of Water Development with two children at commissioning of Kaberebere Piped Water Supply System

6.1 INTRODUCTION

The golden indicator for access[49] is defined as **% of people within 1.5km (rural) and 0.2km (urban) of an improved water source.** As it is not possible to physically measure this indicator for the whole country, proxy figures are used. Box 6.1 sets out the assumptions used to estimate access in the case of rural and urban water supplies. Access in urban areas is sub-divided into small and large towns.

Box 6.1 Service criteria used to estimate access to safe water supplies in Uganda

Improved water sources (ie: protected springs, deep boreholes and shallow wells fitted with handpumps, rainwater harvesting facilities and piped water supplies) are defined as safe.

Rural water supplies assumes the following number of users per source:

- Protected springs – 200;
- Shallow well with handpump – 300;
- Deep borehole with handpump – 300;
- Gravity flow scheme, or other piped water supply tap – 150.
- Coverage based on rain water harvesting is captured based on an approach developed in 2006 which relates a tank volume to a number of users as outlined below

Tank size (l)	5,000	6,300	7,500	10,000	20,000	24,000	30,000	50,000	75,000
Estimated no. of users	3	4	4	6	11	13	17	28	42

The 'total number of people served by all the improved sources' is divided by the 'total population' (based on UBOS projections). The calculation is done at sub-county, District and national levels.

Urban water service coverage: For gazetted towns, the population figures for computation of coverage are derived from the 2002 Uganda Population and Housing Census (UBOS, 2005). For small towns where data is not available from the census the figures are based on population records at MWE (obtained from pre-feasibility/feasibility studies and design reports).

Service coverage within the small and large towns is based on the total number of connections and the following number of persons per connection:

Domestic - 6 Persons (1 household)

Yard taps - 24 Persons (4 households)

Standpipe/kiosks – 150 Persons (25 households)

Point sources (protected springs and deep boreholes) - 150 (25 households)

Institutions in small towns - 24 Persons per connection

Institutions in large towns – 1,000 Persons per institution

District local Governments and Town Councils provide data on the improved water facilities to generate the national, district, town and sub-county access figures. The Poverty Action Fund (PAF) monitoring by MWE undertakes some verification of this data. Alternative methods of analysis and case studies are used to augment the golden indicator data and provide more in-depth understanding. Survey data from the Uganda Bureau of Statistics (UBOS) on **access** as well as **use** of improved water supplies is also analysed and used for analysis and comparison.

Access to improved water supplies in the IDP camps and return areas of Northern Uganda are reported in section 5.5.

[49] The terms **access** and **coverage** both refer to the percentage of people with access to an improved water source.

6.2 ACCESS TO RURAL WATER SUPPLIES

6.2.1 *National Access*

Three different approaches are used by MWE to estimate access to rural water supplies (Box 6.2), thus enabling comparisons to be made and providing better insights for planning.

Box 6.2 Three approaches to estimating access to rural water supplies

1. The DWD-MIS Standard Approach. The last national survey of improved water sources was undertaken in 1991. Most new sources constructed under Government and some under NGO programmes have been added annually to the baseline information. The database was validated by GIS mapping (covering groups of districts) in 1999, 2000, 2001 and 2002. ***Access*** is estimated by assuming a fixed number of users for each source (Box 6.1), and dividing by the projected district rural population[50]. Due to problems of data update, partly caused by the splitting of Districts, the national access figure using this approach is no longer broken down to District level. This approach assumes that all sources are functional.

2. The District Situation Analysis Approach uses data submitted by local Governments in their Annual District Situation Analysis Reports. Each improved source is multiplied by a set number of users as defined in (Box 6.1). The total number of users per sub-county is divided by the rural sub-county population. An upper limit of 95% access is set for each sub-county to avoid high figures in one sub-county compensating for low figures in another. This approach considers (i) 100% functionality and (ii) functional sources only.

3. The Walking Distance Approach[51] is different from (1) and (2) above as it estimates the effect on access of assuming different walking distances. It assumes a uniformly distributed population and water sources in each sub-county, and calculates how many people would live within a given radius of an improved water source (1.5 km, 1.0 km and 0.5 km). Maximum attainable access is limited to 100% of the projected population for each sub-county and assumes all improved water sources are functional.

Table 6.1 Estimated Access to Improved Rural Water Supplies (June 2007)

	Coverage June 2006	Coverage June 2007
1. MWE – MIS Standard Approach (assuming 100% functionality)	61%	63%[52]
2. District Situation Analysis approach Assumes that a water source in a given sub-county or district cannot serve people in another sub-county/district (coverage limited to 95% in each sub-county).		
i. 100% functionality	58.5%	60.2%
ii. Coverage based on functionality[53]	51.6%	53.1%
3. Walking Distance Approach (assuming 100% functionality)		
1.5 km	51.7%	59.2%
1 km	48.9%	56.1%
0.5 km	33.8%	39.0%

[50] In preparing the 2005 sector performance report, a number of inconsistencies in previous *DWD-MIS* data from 1991 up to 2004 were removed. The data presented in this report uses this data, referred to in the 2005 SPR as *DWD-MIS (Revised 2005)* data.

[51] The 2005 Sector Performance Report referred to this as the "Density Approach"

[52] Calculated as follows: 2006 DWD-MIS Figure of 61% served: 15,104,045 users. Assumed increase for 2006/7: 643,826 for DWSCG (06/07); and 225,952 for UWASNET NGOs (Jan to Dec 2006). Total Rural Population for June 2007 = 25,313,834.

[53] Calculated using the GoU standard estimated number of water users for each functional water source as reported by District Government divided by the total rural population. Due to lack of data RGC schemes are assumed to be 100% functional.

Table 6.1 sets out the figures for access to an improved water source in rural areas using the three approaches described in Box 6.2. The national safe water coverage figure for rural water supply is 63%. The national target for 2006/07 of 62% has been achieved. The DWD-MIS and District Reported figures indicate an increase of 2% and 3% respectively in access to safe water in rural areas.

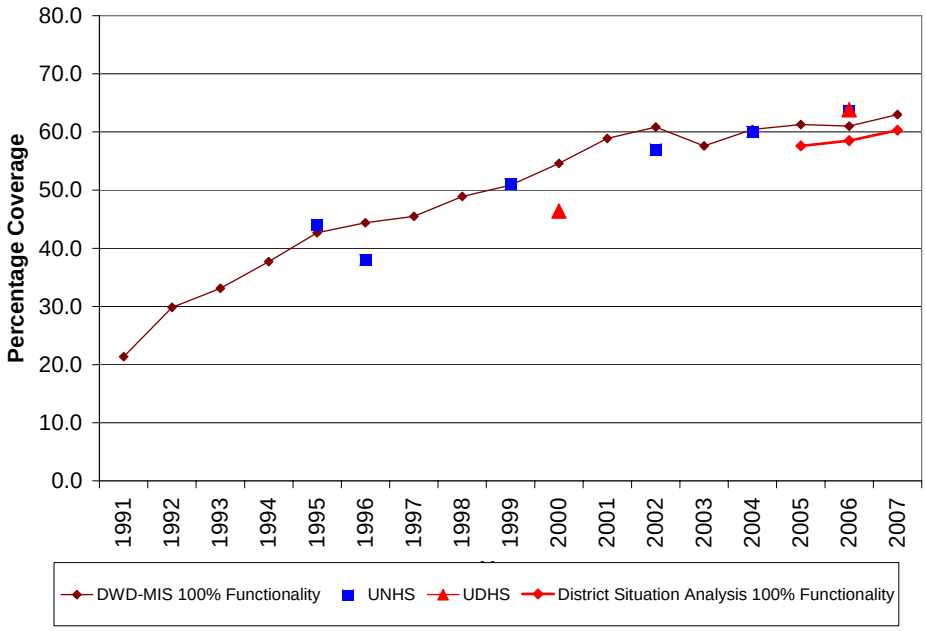
According to the District Situation Analysis Approach (based on District reports), access has risen from 58.5% (June 2006) to 60.2% (June 2007). The June 2007 access figures for walking distance indicate an increase in coverage of 7.5% (1.5km); 7.2% (1km) and 5.2% (0.5km) from June 2006. Coverage for 1km walking distance is 56.1 %, a difference of 4.1% from the current situation analysis figure of 60.2%.

6.2.2 *Trends*

Figure 6.1 provides the trends since 1991 and incorporates survey data of UNHS, UDHS and district situation analysis as well as DWD-MIS data. All data sources show a positive increment. UNHS and UDHS figures for 2006 are not significantly different from the District Reported Figure or the DWD-MIS figure. Further analysis of the data shows:

- The National Average Coverage figure for rural water supplies is 63% (**DWD-MIS)**. Based on the **District Situation Analysis**, the average district coverage has increased to 60.2% from 58.5% in 2006. Improved data capture by district Local Governments and other support agencies have contributed to this increase.
- **The Uganda Bureau of Statistics (UBOS)** released the 2005/6 Uganda National Household Survey (UNHS) in December 2006. The survey found that 63.6% of rural households had access to safe water (defined as improved water supplies in line with Box 6.1, but excluding rainwater harvesting facilities); an increase of 6% from the 57.6% reported in 2002/3 (UNHS).
- **The Uganda Demographic and Health Survey (UDHS),** published in 2006 states that 63.8% of the rural population use improved water sources (as defined in Box 6.1, and including rainwater harvesting).

Figure 6.1 Trend in Access to Improved Rural Water Supply (1991 to 2007)



6.2.3 *Distance to Water Sources and Collection Time*

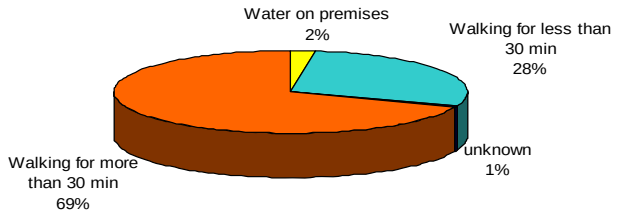
Table 6.2 presents the findings from the UNHS (2005/6) on distance to a water source. 72% were within a 1km radius of it and 28% within 1 to 5 km. The average distance is 0.8km and the average waiting time 28 minutes. Northern region has an average walking distance of 0.8km but has a waiting time of 53.8 minutes implying very long queues at the sources.

Table 6.2 Uganda National Health Survey (2005/6) Data on Distance to a Water Source

	2005/6					
	Kampala	Central	Eastern	Northern	Western	**Uganda**
< 1km	95.9%	72.3%	67.9%	72.7%	67.5%	**71.6%**
1 – 5 km	4.1%	26.7%	31.1%	26.6%	31.7%	**27.6%**
> 5km	0%	1.0%	1.0%	0.7%	0.8%	**0.8%**
Ave dist.	0.2km	0.8 km	0.8 km	0.8 km	0.8 km	**0.8km**
Ave waiting time	10.0 min	16.0 min	32.6 min	53.8 min	18.1 min	**28.0 min**

The sector was unable to conduct field assessment of time taken to collect drinking water, however analysis shown in the UDHS (2006) report indicates almost 70% of rural populations still take more than 30 min to fetch water (Figure 6.2).

Figure 6.2 Time to Rural Source of Drinking Water (Source: UDHS, 2006)



6.2.4 *District Access and Trends*

Figure 6.3 shows the variation in District access to safe water supply (June 2007), which ranges from to 12% in Kaabong to 95% in Kabale. Annex 6-1 summarises the District Situation Analysis Reports. A total 35 districts (44%) are above the average coverage. The top 10 districts with the highest coverage are Kabale, Kanungu, Rukungiri, Ntungamo, Koboko, Kaberamaido, Kamwenge, Busiki (Namutumba), Bushenyi, and Kasese. Figure 6.5 shows that the cheaper technologies of springs and GFS taps are the predominant technology for the best-covered districts of which eight are in the south and south western region.

The 10 least covered Districts with protected drinking water (coverage less that 40%) are Kaabong, Yumbe, Kotido, Isingiro, Kiruhura, Bugiri, Kisoro, Mayuge, Manafwa, Nakapiripit. Seven of the least served (Kaabong, Yumbe, Kotido, Bugiri, Kisoro, Mayuge, Nakapiripit) were among the least served in 2005/2006 FY and three districts (Isingiro, Kiruhura, Manafwa) were created in 2006/7. Figure 6.6 in shows that the costly technologies of deep boreholes are the predominant technology in the least covered districts.

The success rate of borehole drilling in the water stressed districts is poor (<60%), which makes water source development more expensive. In order to meet the water needs in these water stressed districts there is need for change of approach which entails design of specific programs to enable them move upwards.

National access figures hide the disparity between Districts. Likewise District access figures hide the disparity between sub-counties. Table 6.3 shows the wide variation in sub-county access. 45 sub-counties have coverage figures of below 20% (not changed over two years).

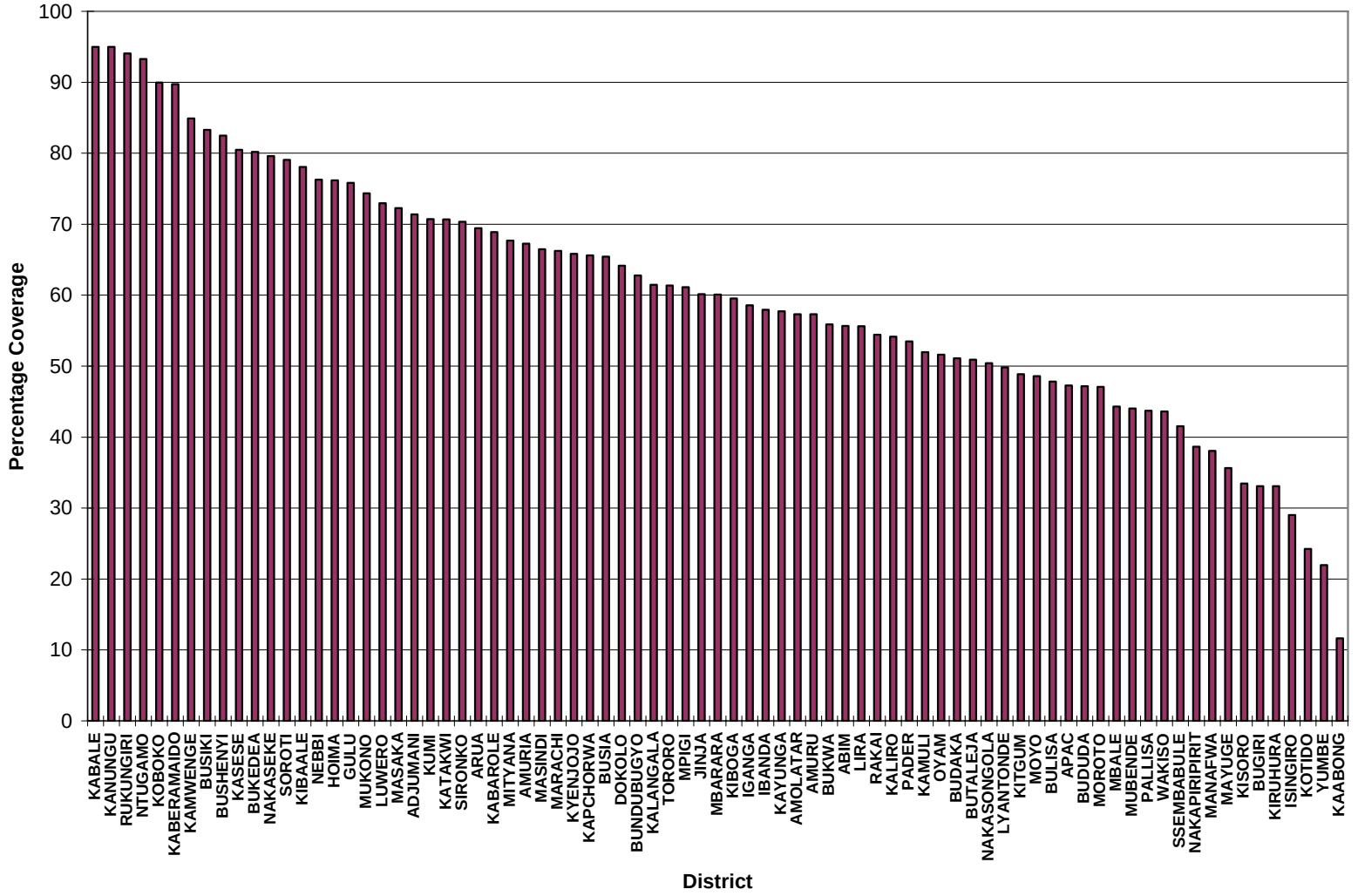
Although overall sub-county coverage has improved gradually, 45 sub-counties are still being left behind considerably. These are located in different districts (See Annex 6-2 for detailed list). The most affected districts in terms of % of sub-counties with coverage of less than 20% are Kaabong (88% of S/Cs), Yumbe (43% of S/Cs), Kisoro (31% of S/Cs) and Kitgum (28% of S/Cs). The least covered sub-counties are: Nyarusiza in Kisoro district; Omiya, Anyima, Lagoro, Padibe west, Paloga and Palabek Ogili in Kitgum district, Abongomola in Apac; Lolelia and Kaabong in Kaabong District.

There is very poor ground water potential in these sub counties and other traditional rural water abstraction technologies are not feasible. There is a need to develop specific strategies to address the needs of this lease served sub-counties. The "*business as usual approach*" will never lift them from their current status. Chapter 11 examines equity issues within Districts in more detail.

Table 6.3 Disparity in sub-county access (from District Reports)

Sub-county access	June 2006		June 2007	
	Number of sub-counties	% of sub-counties	Number of sub-counties	% of sub-counties
Under 20%	46	5%	46	5%
20% to 40%	136	16%	119	14%
40% to 60%	213	25%	219	26%
60% to 80%	214	25%	215	25%
80% to 95%	248	29%	258	30%
Total	**857**	**100%**	**857**	**100%**

Figure 6.3 Access to rural water supplies by District (June 07). Source: District Situation Analyses Reports, District Local Governments



6.2.5 *District Water and Sanitation Conditional Grant Allocation*

Ideal grant allocation to Districts focuses primarily on the number of people not yet served and assumed cost of applicable technology. Analysis of grant released per rural person (based on projected rural population) and investment requirements in the two extreme groups of districts (best and worst coverage) provides some insights into grant allocation:

- The total projected rural population of the two groups is very comparable with a small variation of about 75,000 (2%).
- Allocation per rural person (total rural population) of the 2006/07 DWSCG for the 10 least covered districts ranges between UGX 980 and UGX 2014 with an average of **UGX 1,396.**
- Allocation per rural person (total rural population) for the 10 districts with the highest coverage ranges from UGX 1163/= and UGX 2,273 with an average of **UGX 1,782**.

Thus on the average, the best served 10 Districts are receiving 28% more of the grant per head compared to the least-served 10 Districts. See Annex 6-3 and Annex 6-4 for more details. Addressing this disparity calls for a combination of measures including further fine-tuning of the allocation formula at the centre and at the district and targeted sector programs designed to uplift these least served sub-counties.

6.2.6 *Technology Mix*

Figure 6.4 shows the range of protected water sources from District Situation analysis Reports. The sector analysis shows that deep boreholes are the most accessed source of drinking water (at 37% of the rural population). Sector analysis quotes springs second at 30%. The springs are also the water source for GFS, which are accessed by 8% of the rural population.

Rainwater harvesting has the least users so far. Developing rainwater on a wider scale at domestic level is in its initial stages and has not been a major contributor in the past. The Uganda National Household Survey (2005/6) found that almost two thirds of dwellings had iron sheets as roofing material, further highlighting the growing applicability of domestic roofwater harvesting in Uganda.

Comparison of best-served and least served district shows that technology options available to the districts have the greatest impact on coverage. The highest served had the cheapest form of water supply (springs) and lowest served have deep boreholes with problems of success rate as the most predominant source (Figures 6.5 and 6.6).

Figure 6.4 % of Rural People accessing Different Sources of Water

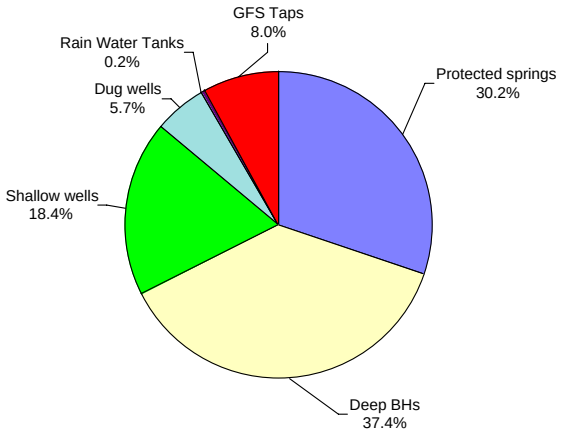


Figure 6.5 % of Rural People Accessing Different Sources of Safe Water in 2007 (Ten best-served Districts)

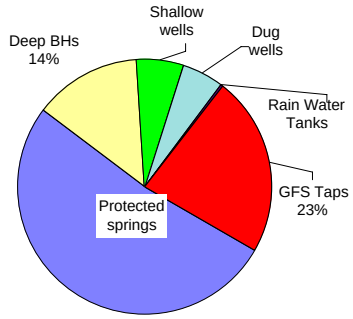
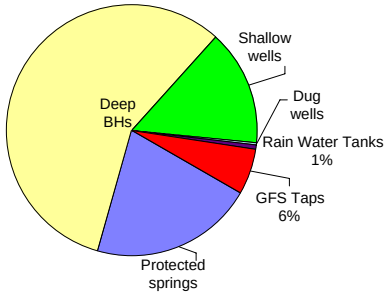


Figure 6.6 % of Rural People Accessing Different Sources of Safe Water in 2007 (Ten worst-served Districts)



In the 10 best served districts, 52% of the users are served with springs (low cost technology with average cost per capita of UGX 9,266) compared to 57% of users in the 10 least served districts benefiting from deep boreholes (high cost technology with average per capita cost of UGX 52,890).

6.3 ACCESS TO WATER IN SCHOOLS

At the national level, the most common source of water for primary schools is the borehole and it accounts for 32.17%, followed by wells/springs accounting for 29.41%. Rainwater tanks have been supplied to most schools and these account for 16.48% of the water sources in the country. Only 2,252 primary schools have piped water amounting to 14.28% (MoES, 2006).

Table 6.4 Source of water by type (Source: MoES, Primary School Abstract, 2006)

Water Source	Number of Schools	Percentage
Piped Water	2,252	14.28%
Borehole	5,074	32.17%
Well/Spring	4,638	29.41%
Rain Water Tanks	2,600	16.48%
Lake/River	820	5.20%
Other	371	2.35%
Not Reported	17	0.11%
Total	**15,772**	**100.00%**

6.4 ACCESS TO WATER IN URBAN AREAS

Access to improved water supplies in urban areas is estimated at 56%. This suggests an increase of 5% from last year. However, the change is partly due to improved analysis. Though the computation mechanisms are the same for this year and last year, the scope of the source data used for Small Towns in 2006/7 differs from the source data used in 2005/6. The major difference is that this year, the estimate is based on data for 149 small towns.

The total urban population in the 171 towns (22 large towns and 149 small towns) is estimated at 4.4 million[54]. Access to water in small towns is estimated at 35% (32% in 2005/6) whereas access to water in large towns is estimated at 71% (70% in 2005/6). Access has been limited to 95% per town so that over-served areas do not compensate for underserved areas in the national figure.

Table 6.5 gives a breakdown of the access to improved water supply in urban areas, based on available data for 22 large towns[55] and 149 small towns.

Table 6.5 Breakdown of access to improved water in urban areas

Type of water supply	No	Total Urban Population (No)	Population with access to:					
			Piped water supply		Other improved		Total improved	
			No	%	No	%	No	%
		(A)	(B)		(C)		(B+C)	
Large Towns with piped water (NWSC)	22	2,540,325	1,791,890	71	Assumed to be 0	0	1,791,890	
Sub-total (Large towns)	***22***	***2,540,325***	***1,791,890***	***71***	***0***	***0***	***1,791,890***	***71***
Small towns with piped water	94	1,115,823	477,886	43	103,835	9	581,720	52
Small towns with other sources only (deep boreholes and protected springs)	55	701,122	0	0	61,950	9	61,950	9
Sub-total (Small towns)	***149***	***1,816,945***	***477,886***	***26***	***165,785***	***9***	***643,670***	***35***
Grand total	**171**	**4,357,270**	**2,269,776**	***52***	**165,785**	***4***	**2,435,560**	**56**

6.4.1 *Water Service Coverage in Large Towns*

The overall coverage of the 22 large towns served by NWSC was 71% as at June 2007. Data is available for 18 supply areas covering 22 large NWSC towns (Table 6.6)[56]. Eight of these (Kampala, Jinja/Njeru, Masaka, Mbarara, Gulu, Kasese, Lira and Fort Portal) have coverage greater than or equal to the NWSC average. The towns of Bushenyi/Ishaka, Soroti, Hoima, Mubende and Masindi fall below the average.

Table 6.6: Water Supply and Sewerage Coverage as at June 2007

Town	Total No. of Connections	Km Pipe Network	Targeted Population	Population Served	% Served (Water)	% Served (Sewerage)
Kampala/ Mukono	106,522	1,162.50	1,402,981	999,892	71%	5%
Njeru/Jinja /Lugazi	12,064	270.53	154,970	123,389	80%	23%
Entebbe	11,038	160.23	63,488	42,285	67%	4%
Tororo/ Malaba	3,383	88.80	49,688	27,266	55%	7%
Mbale	6,023	168.97	77,144	50,501	65%	27%
Masaka	4,847	147.36	65,835	49,418	75%	8%

[54] The urban population in last years SPR was estimated at 4.6, since it included a population assumption for 31 towns where no data was available.

[55] 18 supply areas are covering the 22 towns. 3 towns (Mukono, Malaba and Lugazi are covered by Kampala, Tororo and Jinja supply areas respectively).

[56] Mukono water services is managed by Kampala Area; Malaba is under Tororo Area while, Lugazi is managed under Jinja Area. The town of Iganga is currently undergoing rehabilitation and expansion. The three towns of Mubende, Hoima, and Masindi became NWSC operational areas with effect from 1st July 2006

Town	Total No. of Connections	Km Pipe Network	Targeted Population	Population Served	% Served (Water)	% Served (Sewerage)
Mbarara	7,292	125.20	82,532	69,657	84%	5%
Lira	4,268	135.77	132,060	94,669	72%	2%
Gulu	3,232	83.70	161,477	136,525	85%	7%
F/Portal	3,131	134.87	43,609	32,254	74%	2%
Kasese	2,837	66.25	75,443	67,941	90%	0%
Kabale	2,829	110.70	53,118	34,761	65%	11%
Arua	3,408	105.93	58,363	35,751	61%	0%
Bushenyi/ Ishaka	1,399	64.43	26,837	11,835	44%	0%
Soroti	2,978	80.63	41,636	15,748	38%	2%
Hoima	1,990	110.20	9,053	4,372	48%	0%
Masindi	1,933	120.00	22,635	8,455	37%	0%
Mubende	1,523	70.00	19,457	6,987	36%	0%
Total	180,697	**3,206.08**	**2,540,325**	**1,791,890**	**71%**	**6%**

Coverage has increased by 1% from 70% in June 2006. In the past, coverage has been increasing at a rate of 2% - 3% per annum (Table 6.7). However, the operational period from July 2006-June 2007 was faced with a number of problems, which affected the water production. The reduced water levels and increased power outage dampened the growth rate of new connections, as there was insufficient water supply.

The total number of new connections installed in 2006/07 was 24,418 bringing the total number of connections to 180,697 as at June 2007. It is envisaged that the FY 2007/08 will mark a new turn around as steps are taken to overcome the insufficient water production.

Table 6.7 Trend of Large Towns Water Service Coverage 2002-2007

Year	2002	2003	2004	2005	2006	2007
% Coverage (Water)	60	63	65	68	70	71

6.4.2 *Water Service Coverage in Small Towns*

The 2006 Sector Performance Report recommended that more effort should be made in obtaining data for coverage for all the small towns. In the 2006 SPR, the total number of small towns was estimated to be 180 and assumptions were made for the towns with data limitations. This year, data is presented for 149 towns for which data is available. These 149 towns are categorized as follows:

a) **94 towns with piped water supply.** Access figures have been computed based on the number of connections and other existing improved water sources (deep boreholes and protected springs) as set out in Box 6.1.

b) **55 towns with no piped water supply.** Access figures have been computed based on the number of other existing improved water sources (deep boreholes and protected springs) only as set out in Box 6.1.

Management arrangements are set out in Chapter 12.

The coverage per town is computed based on the number of persons served per connection (Box 6.1). For all towns, the maximum percentage of people with access to improved water has been limited to 95%. The average coverage for the 149 small towns monitored is 35%.

Figure 6.7 provides a breakdown of the percent of people with access to improved water in the 94 towns with existing piped water supply and Figure 6.8 provides a breakdown for towns with no piped water supply. It may be noted that none of the 55 towns with no piped

water are above the average of 35% and that only 16 of the 94 towns with piped water supply are below the same average.

Some of these schemes (eg Rwashameire) have just been completed and are designed to serve most of the population. However, Figure 6.7 suggests that some of these schemes have very low coverage rates. This is primarily due to the fact that not enough people are connecting to the schemes. In constructing schemes, more emphasis needs to be placed on connections at an earlier stage. Clearly, there also needs to be much more promotion to encourage people to connect to existing schemes.

Figure 6.7 Access to improved water supply for 94 towns with piped water

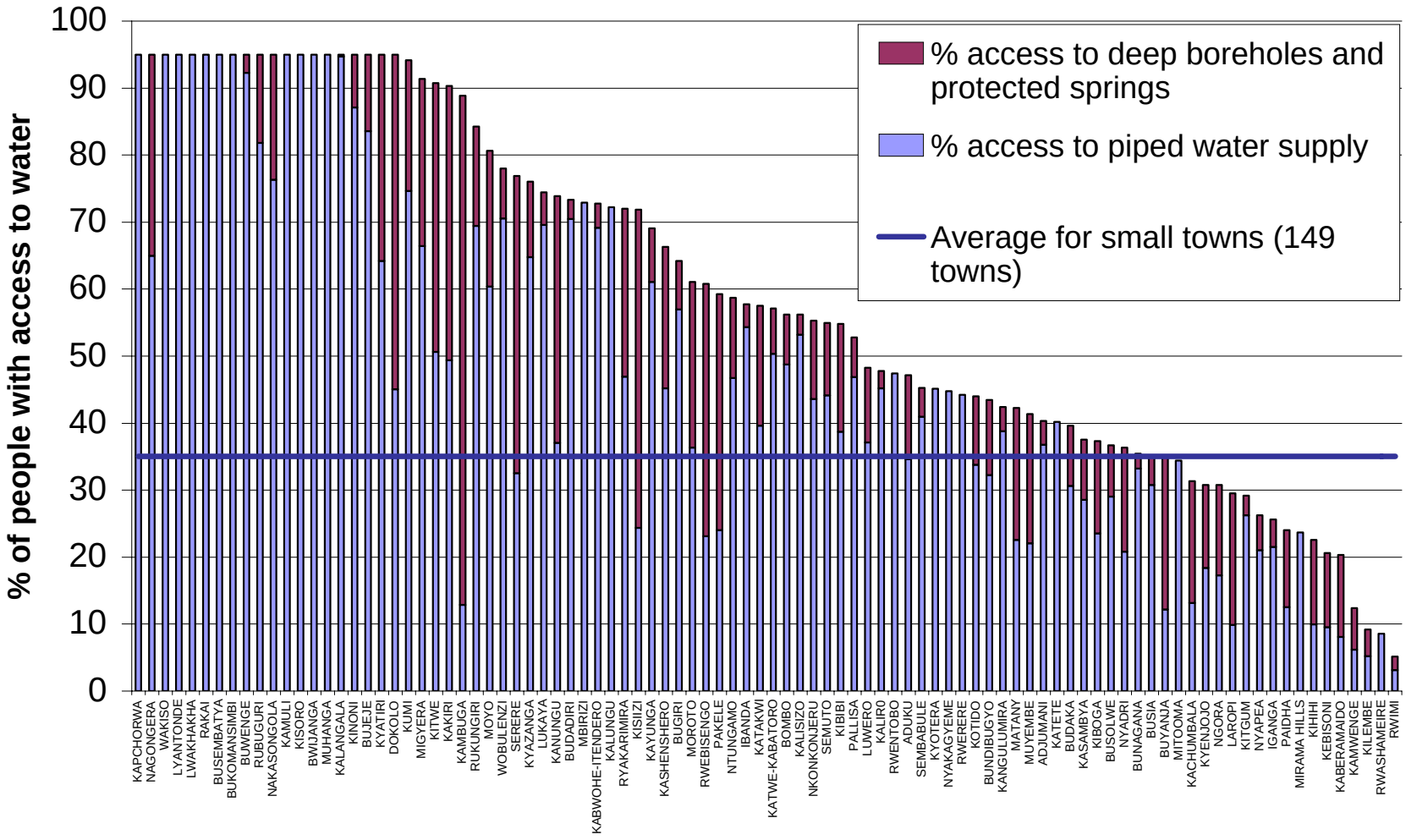
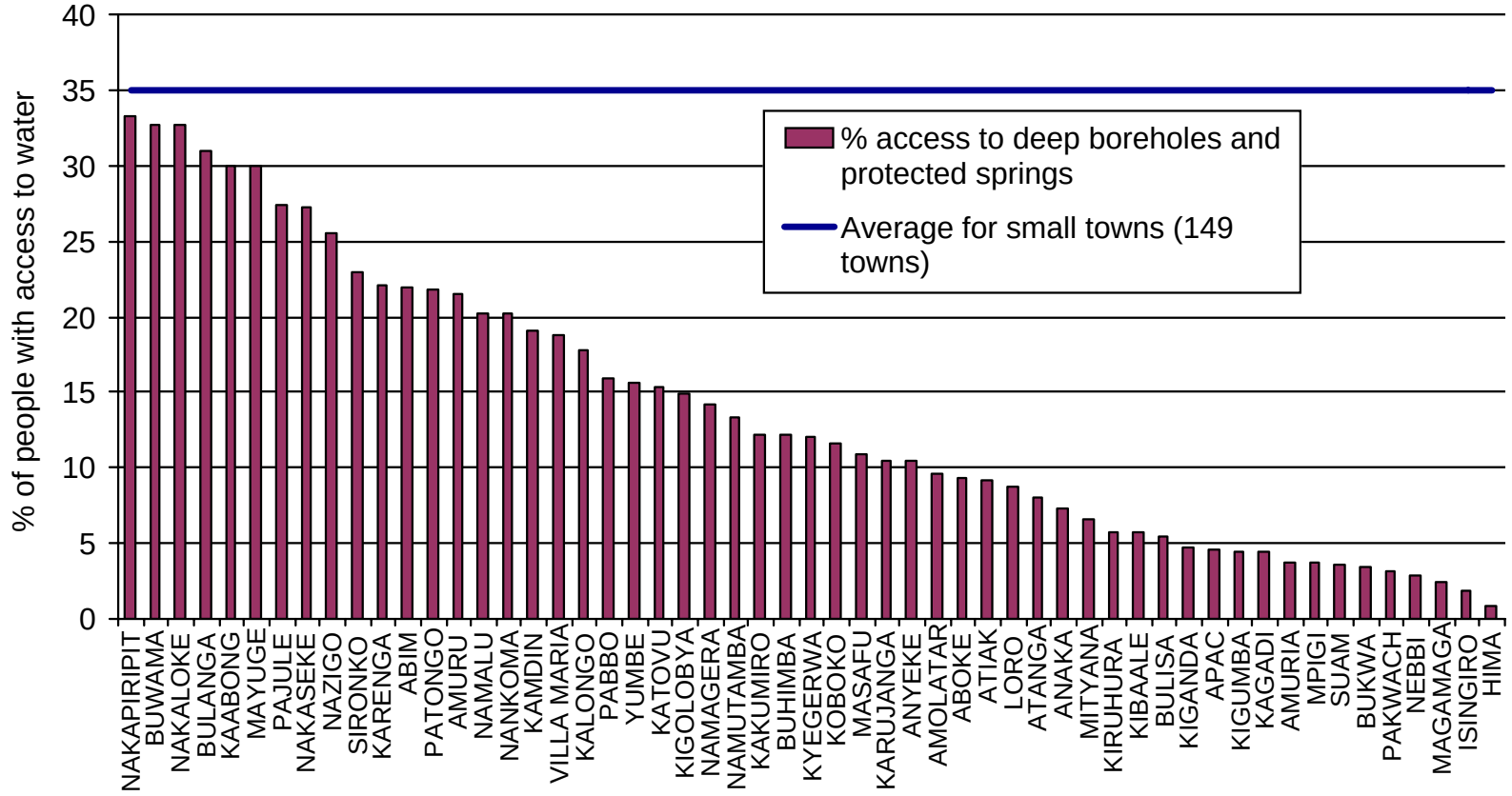


Figure 6.8 Access to Improved Water for 55 Towns without Piped Water



CHAPTER 7
Functionality

Not only are improved water and sanitation facilities essential, but they should also continue to function as and when the women and children need them.

School children fetching water from a functional borehole in Bugiri District

7.1 INTRODUCTION

Under the rural water supply sub-sector, a functional water source has been defined as: a protected water source that is found producing water at the time of spot check. Rural water supply sources comprise deep borehole, springs, shallow wells (hand dug and machine drilled), gravity flow schemes and valley tanks.

This year, the urban water supplies sub-sector has focused on number of active connections in the piped water supplies. The modalities for record keeping and verification of the number of hours of service still need to be determined to enable measurement of functionality to be improved in the future.

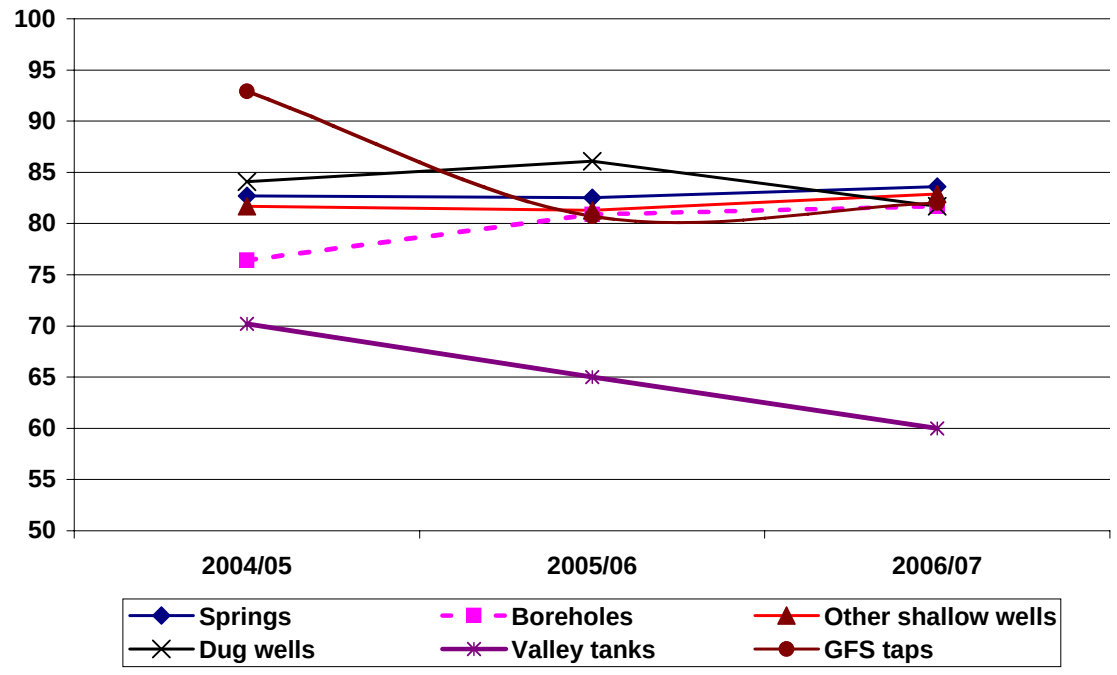
7.2 RURAL WATER SUPPLIES

7.2.1 *Overview*

The average national functionality rate of rural water facilities is 83%, the same as in 2005/6 (Figure 7.2). The data sources for the functionality indicator are the district quarterly and annual reports, which are computed to obtain the national functionality figure (trends for each District in Annex 7-1).

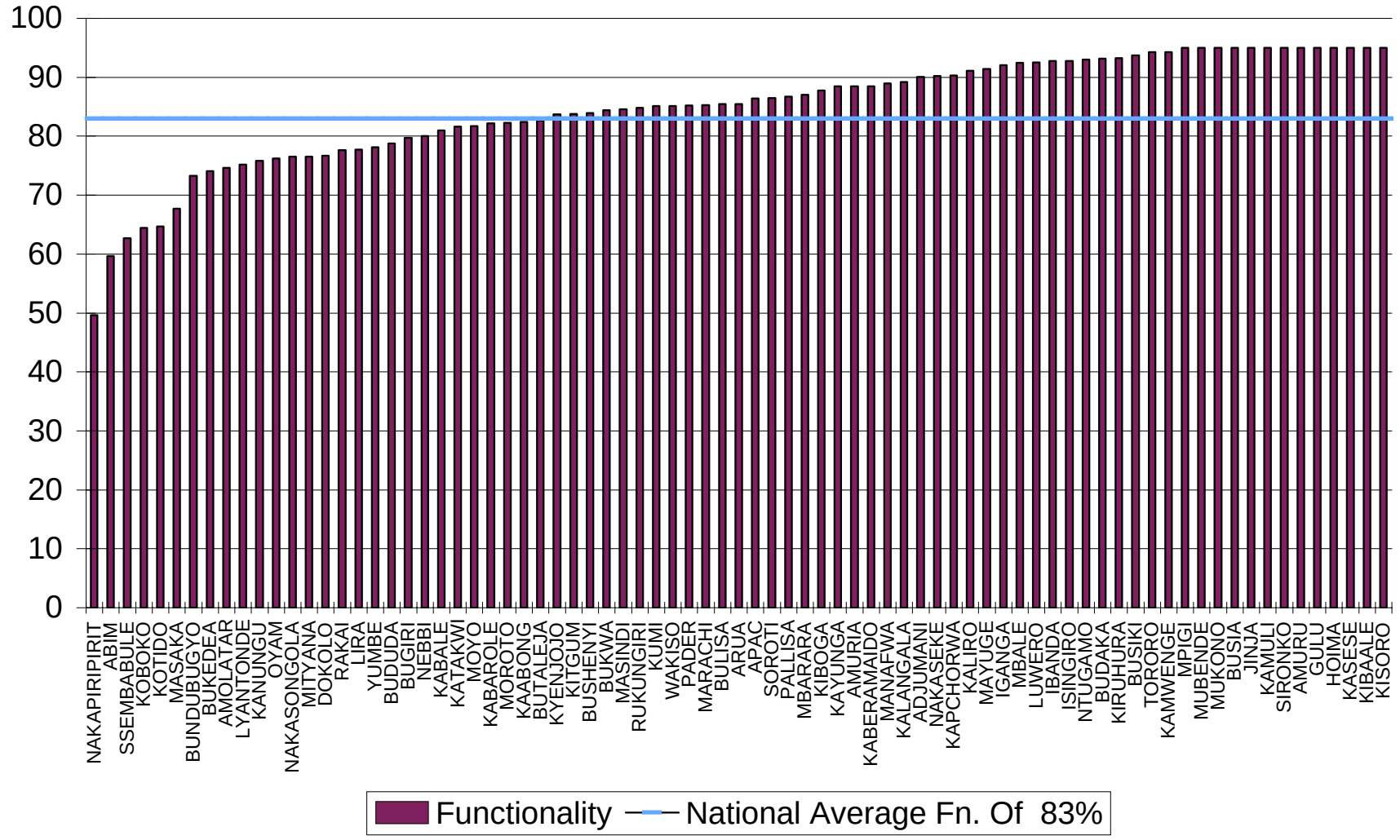
Deep boreholes and springs show improving functionality trends since 2004/5 while functionality for dug wells is reducing (Figure 7.1). The increase for boreholes is attributed to among others, increased expenditure on borehole rehabilitation (4% of the DWSCG) and software activities (6% of the DWSCG).

Figure 7.1 Functionality Trend – Comparison per Technology (2005 to 2007)



The district specific functionality rates for 2006/7 are presented in Figure 7.2 and Annex 7-1. The following six districts still have the lowest functionality as reported last year: Nakapiripirit (49.6%), Abim (59.6%), Sembabule (62.7%), Koboko (64.5%), Kotido (64.7%) and Masaka (67.7%). 38% of districts have improved their functionality while 66% have functionality levels above the national average of 83%.

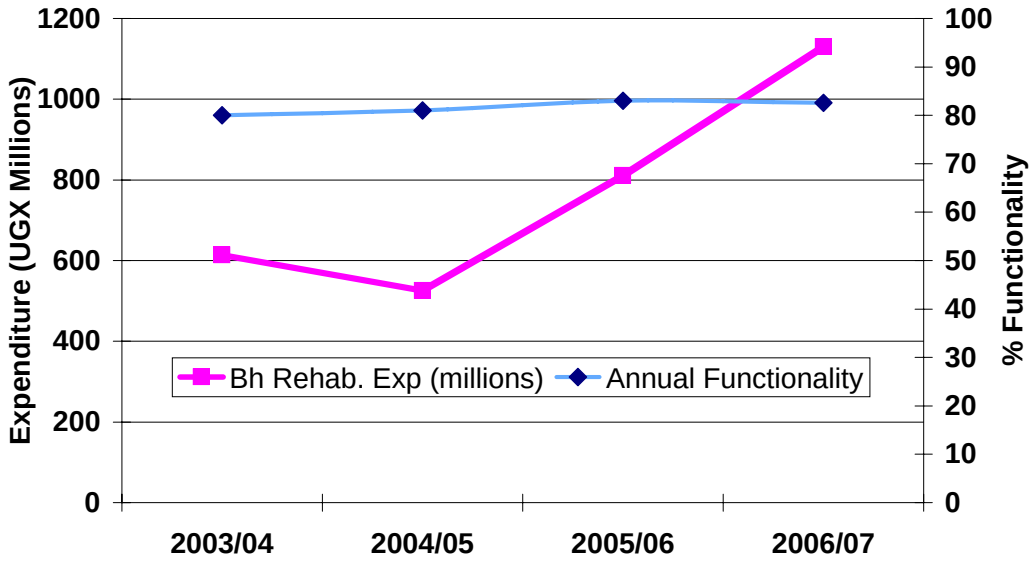
Figure 7.2 District Functionality Rates for Improved Rural Water Supplies



28 District had functionality rate drop from the previous year. The districts that have made the highest improvements are Kamwenge (68-94%), Rakai (68-78%), Nakapiripiti (43-50%), Kisoro (89-95%) and Nakaseke (85-90%).

Improved functionality is partly attributed to rehabilitation work undertaken during the FY. Expenditure on borehole rehabilitation doubled from UGXs 615m in 2003/04 to UGX 1.1 billion in 2006/07. Software expenditure also increased. Effective last F/Y the districts were guided to increase software funding up to 12% of the DWSCG. UGX 2.4 billion representing about 6% of total grant was spent on software activities by districts.

Figure 7.3 Trends in National functionality rate and expenditure on rehabilitation



The following 9 sub-counties have the lowest functionality in the country: Rwebisengo (27.12%) and Kanara (36.49%) in Bundibugyo and Amudat (28.2%), Karita (30%) Lolachart (40%) and Laroo (46.2%) in Nakapiripiti district, Bushika(33.33%) in Bududa district and Mijwala (36%) in Sembabule.

Sembabule district report for 2006/7 indicates that 13 out of 20 boreholes in Mijwala are non functional. The sub-county has poor ground water potential with deep boreholes as the main technological option for safe water supply. About 60% of the boreholes have low yields (<500 Litres/hr) but are installed with hand pumps because of limited available water supply options since the area is water stressed. The reports point out that when the hand pumps break down, the User Communities have been reluctant to repair them because of their inadequate discharge hence affecting the functionality in the area.

Bundibugyo District report for 2006/7 indicates that 65 out of 113 dug wells are not functional and 8 out of 11 deep boreholes are broken down. The two sub-counties of Rwebisengo and Kanara are located in Albert rift valley, which is geomophologically flat but with high shallow water potential. Due to its topographical set up, underground water flow rates are low. The water therefore has time to react with the sediments resulting in saline water. The excessive mineralised water, which tastes salty is causing communities to abandon the water sources. This affects the functionality of the sources.

7.2.2 *Factors Affecting Functionality*

In addition to the hydrogeological challenges discussed above, other factors affecting functionality of rural water points are:

- **Poor siting and Quality of Construction:** Construction of shallow wells is being undertaken by firms without adequate experience for the work. Additionally there has been a tendency for siting of dug wells in valleys (distant from community settlement) and sometimes near open (swampy) water bodies. This has resulted in shoddy works, poor water quality and long walking distances and thus has a long-term effect on commitment of users to maintenance of the facilities.
- **Lack of policy to regulate Shallow well contractors:** Unlike borehole drilling, shallow well construction in the sector has not yet been regulated. This has opened tendering of construction to non-qualified firms. The argument from districts has been that PAF funds should also trickle down to local contractors in order to alleviate poverty sometimes at the expense of quality of outputs.
- **Technology choice not appropriate:** High Functionality is reported in places where there are no alternative water supplies. The communities in low coverage areas (other than nomadic communities) care for their sources more than those that are less stressed, while low yielding wells are easily abandoned.
- **Loopholes in Community Based Maintenance System (CBMS) Policy:** The policy hasn't addressed the challenges of limited available banking facilities in the rural areas. Problems arise from individual members of water and sanitation committees keeping money collected from users as O&M fees in their homes. Additionally most source treasurers don't have skills in finance and book keeping. **CBMS** also assumes enforcement of by-laws and voluntarism by water source committees and caretakers, which is practically not the case most committees in the long run. The two case studies in Box 7.1 illustrates real life challenges of trying to enforce by-laws.

Box 7.1 Functionality Case Studies - Enforcing by-laws

Kyampisi Sub-County, Mukono district is one of the 24 sub counties; with a high functionality rate of 95%. The sub county has deep boreholes as the main water supply technology. A monitoring field visit was undertaken in August 2007 for borehole MWE 16347 in Kalagi trading centre. The borehole, which serves 1,000 residents in the trading centre, was observed to have a long queue of clean jerry cans. The hand pump mechanic Mr Baziwaane George William was the caretaker until 2005. He told the monitoring team his story:

"In September 2005, a lady (name withheld for anonymity) came to draw water from the borehole with dirty jerry cans. I stopped her from collecting water with the dirty jerry cans. I confiscated the jerry cans since it was our by law. The following day the lady came to my home, she attempted to grab the jerry cans using force. I overpowered her. She later on decided to go to Nagalama Police station and recorded a statement that I had raped her. I was arrested and taken to the police station. I tried to explain but police authorities could not listen to me. The Community Development Officer and Subcounty officers came to the police station and explained to the police. I was then released. Since that incident, I reached a point I gave up with voluntarism. I resigned from being caretaker and right now I am a handpump mechanic."

7.2.3 *Efforts to improve Functionality*

Various efforts and initiatives are being undertaken to improve functionality levels both in National and lower Local Government. There have been significant efforts by the Government to improve the availability of spare parts and train hand pump mechanics as well as improve funding and implementation of community mobilisation and software activities. MWE has also issued communication to all districts urging them to engage competent/registered engineering and Hydrogeological firms for water works.

Supply Chain: Availability and quality of hand pump spare parts was identified by the O&M study 2001 as crucial for effective functionality of water sources. In 2004, MWE started and implemented the Supply Chains Initiative. It was envisaged that this initiative would kick-start the supply of hand pump spares by the private sector throughout the country. The concept of the supply chain required the private sector pump suppliers/manufacturers to establish a comprehensive network of spare parts dealers. At the start of the initiative, 37 out

of the planned 60 outlets were opened up through out the country under four business units. Table 7.1 shows summarised targeted outlets and status in 2006/7 as found by field monitoring activities.

Table 7.1 Active outlets per region by June 2006[57]

Business unit	Major Supplier	Target sub Dealers	Opened up in 2004/5	Currently active**
Eastern Uganda	Victoria Pumps Ltd	12	13	10 (77%)
Northern Uganda	Victoria Pumps Ltd	19	13	3 (23%)
Central Uganda	Buyaya Technical Services Ltd	14	4	4 (29%)
Western Uganda	Multiple Industries Ltd	15	7	0 (0%)
Total		**60**	**37**	**17 (46%)**

****"Active" refers to Outlet selling spares worth UGX 400,000 per month.*

Efforts are being made to engage stakeholders and support the initiative particularly through MWE technical support units. Monitoring figures show that last FY, 46% of the outlets were operational.

Ten out of 13 sub dealers in Northern Uganda abandoned business. The insurgency in Northern Uganda attracted a good number of Humanitarian NGOs who have been supplying free hand pump parts and spares to Districts, which contributed to edging out the established dealers.

In western Uganda, the initiative is being hampered by low demand resulting from protected springs and GFS systems that are major technologies for water supply. There is need for district to utilise their local dealers in provision of spares for rehabilitation of existing facilities. This will increase the turnover and encourage them to continue in the business. Box 7.2 shows examples of spare parts initiatives initiated by District local Government.

Box 7.2 Spare Parts Supply Success Stories (Bugiri and Butaleja)

Supply Chain Support in Bugiri District. The district in FY 2005/6 procured two firms under the "supply chain", M/s Dankik Enterprises and M/s Lwaba Enterprises. The firms are undertaking the supply and installation of pump parts, which has been separated from main works contract. The firm's contracts are tagged to stocking of spare parts. The Main-drilling contractor is engaged to drill and cast platform of borehole. The supplier then engages the pump mechanics to do the installation of the sources. The District through radio programs and advertisement is also promoting the new dealers.

Innovative Approach to Spares in Butaleja District: The District in FY 2005/6 decided to Purchase fast moving parts using the funds that they collect from the Community Contribution towards Capital Cost (CCCC). Spares are stocked at the District Water Office. When a community is in need of spares, it pays at District General account, gets receipt, which is presented at District Water Office and spare, released. Although this is not in line with the privatisation of spare parts distribution, it was found to be working well.

Training of Hand pumps Mechanics. The Ministry of Water and Environment, under its capacity building programme has continued to train hand pump mechanics as one of the strategies to improve functionality.

[57] Source: MWE June 2006 Supply Chain Monitoring Report

In 2006/7, five regional training sessions were conducted in Yumbe, Mbarara, Kasese, Rakai and Soroti districts. At the end of the trainings, Hand pump mechanics were equipped with skills to improve the operation and maintenance of hand pumps. A total of 150 hand pump mechanics were trained and 20 non-functional boreholes repaired as part of the trainings. The biggest challenge from the perspective of the hand pump mechanics is that they are not provided with tools.

Good Practices in improving O&M in Kasese: As of December 2006, 20% of improved water sources in Kasese District were not working. It was found that this was due to lack of effort and resources for maintenance, leading to low functionality, and in some cases complete breakdown. O&M of improved water sources in Kasese was largely categorised by dormant water and sanitation committees, unwillingness of the water user group to contribute for the maintenance of sources, illegal connections on some GFSs, poorly maintained water sources and households around these water sources lacking latrines.

Following recognition of this problem, Kasese District local Government, with support from SNV, developed an innovative approach to improve the situation with competitions (Box 7.3). Source functionality as well as sanitation and hygiene increased dramatically as a result. This innovation has demonstrated clearly that given the right support, information, incentives and chance to explore their own strengths and weaknesses, communities have the capacity and resourcefulness to maintain their water sources and improve on sanitation and hygiene. There is clearly a need for regular follow up of WSCs and households.

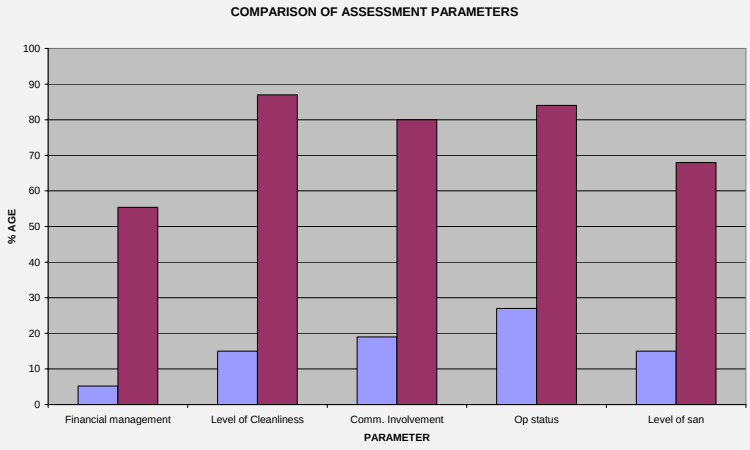
Box 7.3 Competitions improve O&M and sanitation in Kasese District

A competition was initiated to improve functionality as well as hygiene and sanitation in households around the water points. It involved a competition which identifed the most active water user committees, best performing water sources, the cleanest homes and the sub counties that exhibited the highest levels of hygiene.

The three sub-counties of Maliba, Bugoye and Kyarumba took part. The main activities took five months. SNV and District staff assessed the existing situation (including baseline data) and identified stakeholders to participate in the exercise (ie NGOs, departments of water, health, community development and education, TSU, sub-county officials, NWSC and private sector contractors and pipe suppliers as well as the participating sub counties, water user committees, and households). The competition criteria included the following parameters and indicators:

1. The level of community involvement in making decisions (over 50% of the users attend meetings, users aware of their roles in O&M, more than 75% have paid user fees in the past 3 months, half the committee members are women and at least one woman is in a leadership position).
2. The level of hygiene around the water points (condition of the drain, soak pit, slab, apron, platform and the general environment around the water point).
3. Financial management of funds collected in terms of transparency and self sustainability (evidence of money regularly collected over the past 12 months, over 60% of planned O&M collections have been realised, money collected is kept safely, availability of up to date financial records, existence of a strategy for fee collection and the community is aware of use of funds by the committee).
4. Functionality of water and sanitation committees (with an O&M plan, minutes of regular meetings, evidence of action on O&M, up to date records, bye-laws, repairs of water sources done in 2 weeks)
5. Operational status of the water facility (ie it provides a constant supply of water and is in good physical condition).
6. Hygienic use of water (at least 80% of the water collection containers at the water source are clean, at least 80% of the store water for drinking in clean containers)
7. Level of hygiene and sanitation in the households (at least 80% of households have: clean and improved latrines, hand washing facilities, drying racks and bath shelters)
8. Accessibility of the sub-counties to conduct the assessment without any major setbacks.

As a result of the competition, previously non-functioning six water sources started to operate in Kyarumba Sub County. Water started flowing to the previously abandoned taps and out of this effort over 480 people have improved their access to safe water and sanitation using their own combined effort of reviving previously abandoned water sources. The figure (below) shows the change of parameters measured (blue = before; pink = after).



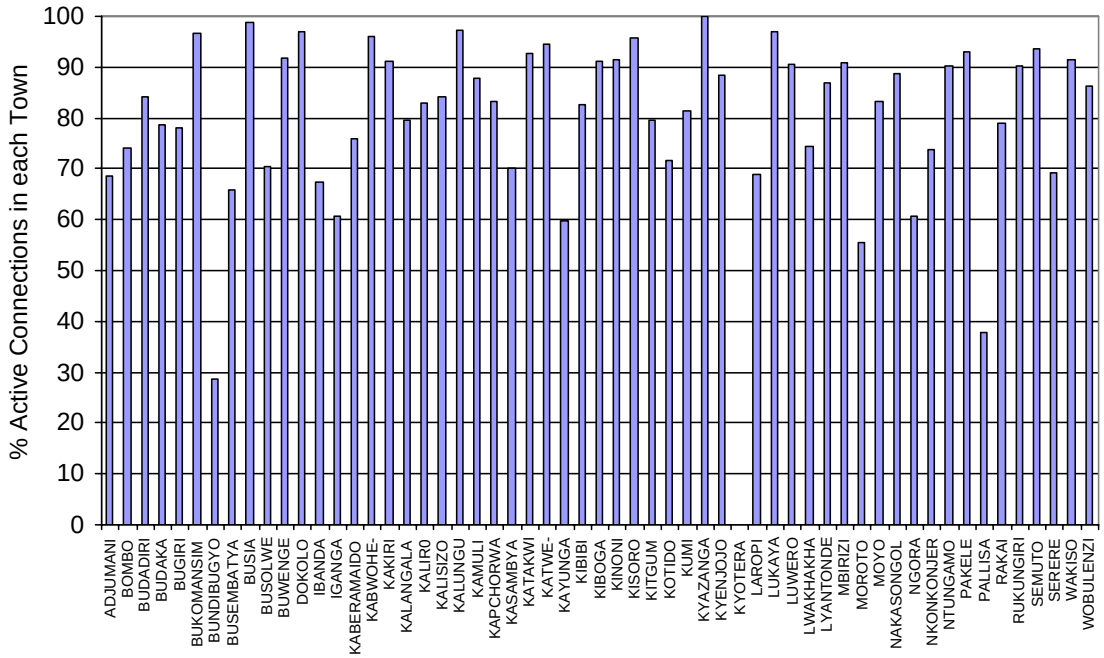
Hygiene levels around the selected water sources greatly improved. The water and sanitation committees began collecting the user fee and displaying accountability at the notice boards for members. Hygiene and sanitation in the households that participated greatly improved. Every participating home had an improved latrine at the end of the exercise with a hand wash facility. Each home had a drying rack for utensils and a separate house for domestic animals.

The overall grading saw the functionality of the water sources that participated in the competition increasing to 100% and provision of latrines and hand washing facilities to 80%.

7.3 SMALL TOWNS WATER SUPPLIES

Figure 7.4 shows the percentage of active connections for 57 small towns supported by Water Authorities and with private operators in FY 2006/7. The average for 57 small towns was 82%.

Figure 7.4 % of Active Connections in Small Towns (2006/7)



7.4 LARGE TOWNS WATER SUPPLIES

NWSC supplies water to about 180,000 customers. About 160,000 of these have active connections. Water is supplied in most towns at an average of 20-24 hours to all customers. The supply has been intermittent in the NWSC areas mainly due to intermittent power supply from the UEDCL grid. In some areas like Gulu, the demand has outstripped supply thus calling for an urgent need to expand the water and sewerage system.

Table 7.2 Status of Water Connections as at June 2007

Town	Total No. of Accounts	Active Accounts	Inactive Accounts	Metered Accounts	% Inactive	Metered a/c's as a % of total
Kampala/ Mukono	106,522	89,983	16,539	105,531	16%	99%
Jinja/Njeru/ Lugazi	12,064	9,903	2,161	12,064	18%	100%
Entebbe	11,038	10,254	784	11,024	7%	100%
Tororo/ Malaba	3,383	3,215	168	3,086	5%	91%
Mbale	6,023	5,430	593	6,023	10%	100%
Mbarara	7,292	7,035	257	7,198	4%	99%
Masaka	4,847	4,212	635	4,743	13%	98%
Lira	4,268	3,823	445	4,268	10%	100%
Gulu	3,232	3,080	152	3,232	5%	100%
Kasese	2,837	2,767	70	2,837	2%	100%

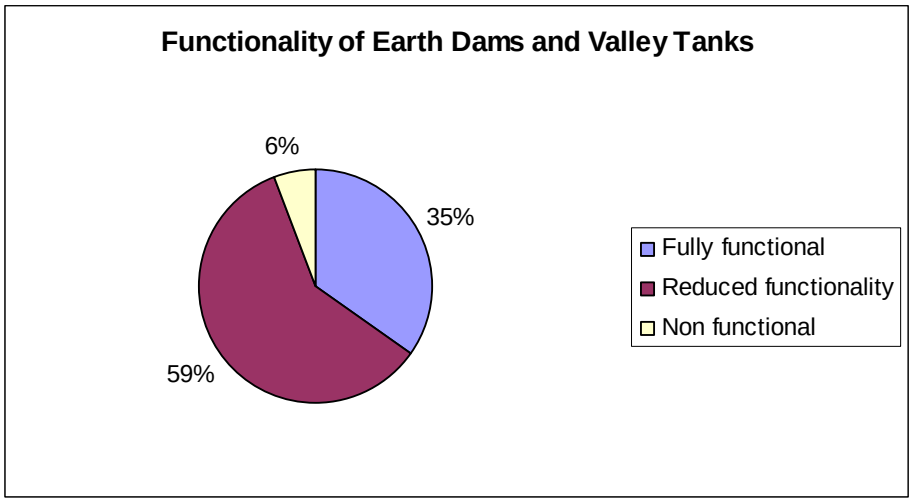
Town	Total No. of Accounts	Active Accounts	Inactive Accounts	Metered Accounts	% Inactive	Metered a/c's as a % of total
Fort Portal	3,131	3,062	69	3,131	2%	100%
Kabale	2,829	2,796	33	2,829	1%	100%
Arua	3,408	3,305	103	3,408	3%	100%
Bushenyi/ Ishaka	1,399	1,378	21	1,380	2%	99%
Soroti	2,978	2,206	772	2,864	26%	96%
Hoima	1,990	1,949	41	1,990	2%	100%
Masindi	1,933	1,692	241	1,933	12%	100%
Mubende	1,523	1,505	18	1,498	1%	98%
Total	180,697	157,595	23,102	179,039	13%	99%

7.5 WATER FOR PRODUCTION FACILITIES

In previous years, the functionality of Water for Production facilities has been established through spot checks in selected districts. This year, data from a pilot baseline survey covering five districts (Abim, Apac, Isingiro, Masindi, Nakasongola) is presented.

Figure 7.5 shows that 35% of the facilities in the five Districts were fully functional. Further analysis of the data shows that all completely non-functional facilities were dry. The main reasons for the reduced functionality are siltation followed by mechanical problems (primarily pump breakdowns) and poor water quality. Rehabilitation of these facilities should be considered. This could be undertaken at District level.

Figure 7.5 Functionality of Earth Dams and Valley Tanks in five pilot districts



55% of all facilities surveyed have siltation problems, a number of which have been operational since the 1960's. Further improvement of these facilities through de-silting may be an option

CHAPTER 8
Hygiene & Sanitation

"Clean water and functioning toilets are among the most potent health interventions that Government can undertake, rivalling immunisation in the benefits that they generate" (UNDP, 2006)

Hygienic latrine in Rakai District

8.1 INTRODUCTION

Hygiene and sanitation are major determinants of health outcomes[58]. Poor sanitation coupled with unsafe water sources increases the risk of water-borne diseases and illness due to poor hygiene. Households without proper toilet facilities are more exposed to the risk of diseases.[59] With the concerted efforts of all stakeholders in sanitation, coverage has steadily increased from below 40% in the 1980s to the present 59%. Improved sanitation coupled with increased safe water coverage has led to improved standards of living for the population.

This Chapter focuses on sanitation coverage as measured by access to latrine and hand washing facility at household level and in schools. Case studies of sanitation improvement in Kaliro[60], Katakwi and Amuria districts, and findings from field visits are also presented.

8.2 HOUSEHOLD LATRINE COVERAGE

The national latrine coverage stands 59%[61]. Figure 8.1 provides a map of district sanitation coverage (data given in Annex 8-1).

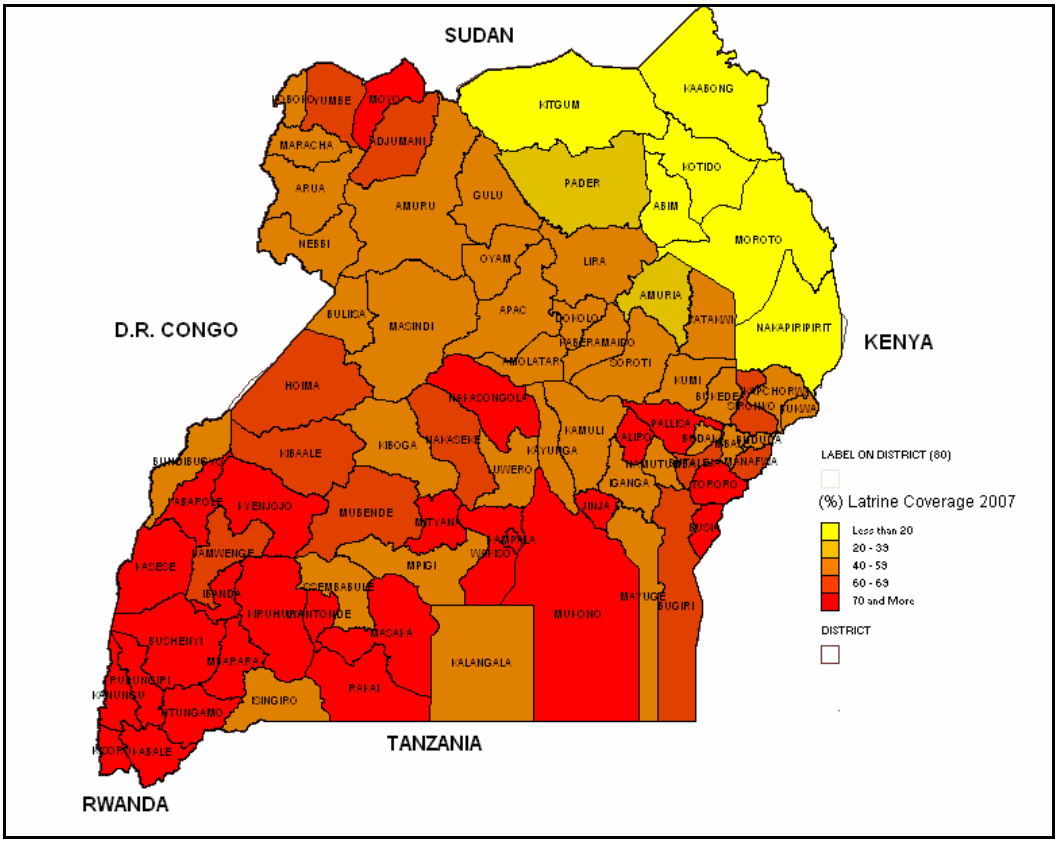
The 10 best performing districts are Rukungiri (98%), Bushenyi (91%), Kabale (89%), Kabarole (86%), Masaka (86%), Mukono (86%), Ntungamo (86%), Ibanda (80%), Kasese (80%) and Kaliro (79%). Kampala is the best performing town with 94% of people having access to improved sanitation. Of the 69 districts in existence as of July 2005, 8 districts improved their latrine coverage by over 10%. Among them Kaliro had the highest increase of 23% followed by Pader with 22%. Kaliro took a very proactive response to the National Health Assembly 2006 resolution that every district should ensure that communities achieve 100% latrine coverage by November 2007 (next national health assembly). Section 8.4 provides more details about Kaliro District's approach.

Still of the 69 districts which existed in 2005, 17 districts did not experience any improvement or decline in their coverage. However, the districts of Kanungu (-20%), Kayunga (-15%), Isingiro (-15%) and Luwero (-11%) reported a decline in their performance (Annex 8-1). There is no explanation for the reported decline. It could be due to improved data collection. The sanitation data collection is expected to improve with the roll out next year of the environmental health management information system, with improved data collection tools.

Data on handwashing is not readily available, but a formative research that was carried out in 10 districts (Kiboga, Kabale, Mpigi, Bushenyi, Lira, Mbale, Mayuge, Iganga, Masindi and Kawempe division of Kampala district) showed that only 14% of the population wash hands with soap after using the toilet. Box 8.1 provides some insights from fieldwork carried out in the four Districts of Kiruhura, Isingiro, Ntungamo and Masaka. There is need for more sensitization in this area.

[58] Ministry of Health (2004) Annual Health Sector Performance Report.
[59] UBOS and Macro International Inc. (2007), Uganda Demographic and Health Survey 2006, Calverton, Maryland, USA: UBOS and Macro International Inc.
[60] Sanitation campaign in Kaliro district was carried out from December 2006 to March 2007 and data collection to assess impact conducted in April-May 2007
[61] Ministry of Health, Health Inspectors Annual Sanitation Survey (HIASS), 2007

Figure 8.1: Latrine coverage by district 2007 (Source: annual DHI survey 2007)



8.3 SCHOOL SANITATION

The provision of proper and separate sanitation facilities for both boys and girls in schools is important in order to create a good learning environment for the pupils and to develop in the pupils the values of good sanitation, which they can replicate in their homes. This section will look at the provision of safe water and latrine facilities in primary schools.

There seems to be an increase in construction of latrines. MoES, Primary School Abstract, 2006 indicates that several buildings are under construction in schools including latrine blocks. The data shows that 1451 latrine blocks are at foundation level, 2113 blocks are at roofing stage while 1,495 are at wall stage. Completion of this construction is expected to improve the national pupil stance ratio which stood at 69:1 in 2006. Box 8.1 Provides insights regarding school sanitation from field visits.

Box 8.1 Insights into School Sanitation in Ntungamo, Kiruhura, Isingiro and Masaka districts

A total of 15 primary schools were visited. In all the visited schools, Girls latrines were separate from the Boys latrines. In one school in Ntungamo each class for girls had their own stance. 80% of the visited schools claimed that they clean the toilets on a daily basis. However, it was noted that some of the latrines looked dirty.

Out of the 15 visited Schools, only 9 (60%) had Hand Washing Facilities. Out of the 9 which had handwashing facilities, only 6 or 40% were functioning. Out of the four Districts visited, three of them had at least one school with a hand washing facility.

It was found out that, in Kiruhura District, schools were using dam water or boreholes as their major source of water. In Isingiro, schools were using Tap water (by GFS) and water from the river as their major sources. In Ntungamo the majority of the visited schools were using gravity water while in Masaka Town, most of the visited schools were using piped water supplied by NWSC as their major source.

8.4 INNOVATIVE PRACTICES FOR HYGIENE AND SANITATION

8.4.1 *Village Health Clubs*

Village (or community) Health Clubs are increasingly found to be effective in mobilisation of communities to improve their sanitation and hygiene practices. They are "free voluntary, community-based organisations (CBOs) formed to provide a forum for information and good practice relating to improving family health. They vary in size from 40 to 200 people, men and women of all levels of education, and are facilitated by a health extension worker trained in participatory health promotion activities, who promote a culture of health through knowledge and understanding in a series of participatory health sessions. Group consensus endorses essential values and group conformity results in high levels of behaviour change with communities monitoring and managing all preventable diseases" (Waterkeyene, 2006). Village Health Clubs thus combine recreation and education. Box 8.2 provides a description of the approach as well as lessons from experiences in Katakwi and Amuria.

Box 8.2 Village Health Clubs Approach in Katakwi and Amuria

The Lutheran World Federation (LWF) has been working in internally displaced persons (IDP) camps and villages in Katakwi and Amuria over the last five years. Having recognised that the sanitation and hygiene work was not progressing well, despite improvements in water supplies, the project piloted a new Community Health Clubs (CHC) concept. Project staff and local Government Health Assistants were trained and the concept was introduced in one resettled community (Iningo Otemei) and an IDP camp (Obulengorok) in August 2006.

Frequent sessions were held with these clubs. After seven months of intense focus on health education, the status of sanitation in the two communities had improved as set out below.

	Iningo Tomei (settled community in Wera Sub-county				Obulengorok Camp in Ongongoja Sub-County (IDP camp)			
Item	**Before**	**During**	**Total**	**% increase**	**Before**	**During**	**Total**	**% increase**
Latrines	20	49	69	245%	4	36	40	900%
Bath Shelters	50	53	103	106%	30	96	126	320%
Drying rack	19	77	96	405%	9	130	139	1,400%
Rubbish pit	3	48	51	1,600%	4	102	106	2,550%

The settled community adapted faster than that of the IDP camp. In Obulengorok Camp, over 50% of latrines had hand-washing facilities in use, compared to none before. In Iningo Tomei, more than 75% of latrines had hand-washing facilities. The other facilities conformed to the acceptable standards in terms of drainage and wastewater convenience.

Lessons from this approach are that the Clubs provide a unity of purpose among the members, especially in the area of health promotion. Membership cards are a powerful incentive and give a sense of belonging. Strong and exemplary leaders are essential for the Health Clubs, while by-laws help to cement the groups and encourage slow takers. The members are analytical in terms of linking poor hygiene to poverty. The demonstrations raise a lot of interest as it enables the members to try out the acquired knowledge.

The approach is not without challenges. The LWF experience found that men turnout was only 60% of women's. Poor time management and drunkenness (in the IDP camp) was a problem, as well as the rain as the meetings were held under trees. Attendance was irregular as people had other demands. Despite these problems, there was a marked increase in hygiene and sanitation facility numbers and use. Source (UWASNET, 2006)

8.4.2 *Strong Leadership and Follow-up*

Kaliro district has shown the highest increase in latrine coverage over a period of one year through a combination of strategies. The latrine coverage in Kaliro district was estimated to

be 56%. However, this figure was an extrapolation the Kamuli district figure, and the actual coverage was not known.

In response to the District Health Assembly resolution, medical department in Kaliro, together with the District Water Office in conjunction with the political leadership decided to take up the challenge of achieving 100% latrine coverage by November 2007. Following a resolution by the District Council, the district launched a campaign to ensure that communities have 100% latrine coverage by the end of March 2007. During the council session, the council members had a chance to reflect on the Kampala Declaration on Sanitation for all the districts. Box 8.3 provides details of the campaign.

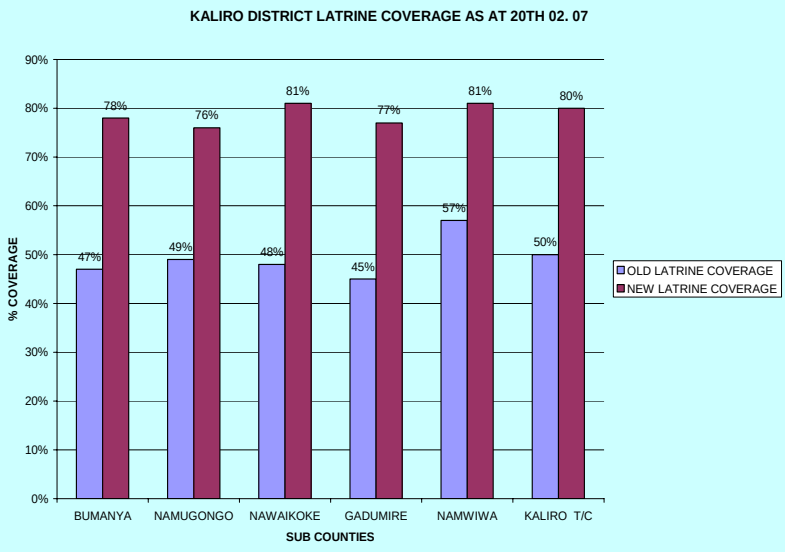
Box 8.3 Improving sanitation access – good practices in Kaliro District

The main players in the campaign were the District Executive Committee headed by the District Chairperson, the District Health Team (DHT) and the District Water and Sanitation Coordiantion Committee (DWSCC) headed by the Chief Administrative officer. All sub-county councillors were charged with the responsibility of mobilizing the people they represent towards this important district undertaking. They were to make sure that pit latrines were dug to meet the target of having a latrine for every house hold and beat the deadline set by the district council.

Sub counties were compared and the best performing sub counties were rewarded, which was envisaged to act as a catalyst to bring about competition and therefore improvement in the general sanitation of the communities. The campaign was started by radio talk shows on the local FM stations. These enabled the DHT and DWSCC to sensitise communities about the values of good sanitation. The District Chairperson led the talk shows and even threatened to have heads of households with no latrines arrested and prosecuted on the 23rd of December 2006 so that they would miss their Christmas. This prompted most of the heads of households with no latrines to respond, and there was an unprecedented activity in pit latrine construction, with the latrines being code named *Kagoda's* Pit latrines (in reference to the Chairman). However Christmas came to pass and people were not arrested or prosecuted.

The district medical office through the assistant environmental health officers (Health Assistants) liaised with the LC I Leaders to register all households with pit latrines. Those without them were forwarded to the district grade II Magistrate who later summoned them and they were fined 20,000 shillings, in addition to community labour which was in the form of digging pit latrines in the community. The District has used this approach to mount a well-focused and persistent campaign to address the National Health Assembly resolution.

Data collection established both the baseline and the current coverage (i.e. after the campaign) by recording the newly constructed and old pit latrines. At the start of the campaign it was found that only **47%** of households had latrines as opposed to the estimated **56%.** The total coverage by the end of March 2007, the time of the survey, was **79%**. See details in the graph below



This has helped the office of the DHO to carry out a study on the factors contributing to the low latrine coverage, and also try to relate the improvement in latrine with the reducing incidence of diarrhoeal diseases in Kaliro District.

8.5 SEWERAGE SERVICE COVERAGE

All small and large towns require sewerage services in order to address the problems of environmental sanitation that are associated with urban development. To-date the small town of Kisoro has access to sewerage facilities. The large towns of Kampala, Jinja, Entebbe, Tororo, Mbale, Masaka, Mbarara, Lira, Gulu, F/Portal, Kabale and Soroti have access to sewerage facilities, accounting for a coverage of a mere 6% of the total population in the towns. Sewerage works in Masindi have just been completed with a low start up usage while the sewerage services in Hoima and Iganga are still under construction.

It should be noted that the high investment costs for this intervention is a limiting factor and poses a challenge due to its competition for limited resources with water supply. The sub-sector has however instituted a dedicated campaign to work in liaison with urban authorities so as to plan, design and implement sewerage facilities for all small towns in the subsequent FYs.

The national service coverage for sewerage services as at June 2007 was about 7%. Despite the introduction of a new simplified sewerage connection policy in the FY 2006/07, new sewer connections have remained very low at about 250 per annum. The major reason for the low sewer connection rate is the limited sewerage network coverage, and the reluctance of customers to connect to the sewer system due to the fact that most of them already have on-site sanitation facilities. Furthermore, some of the NWSC areas have no water borne or piped sewerage services. These include the areas of Arua, Bushenyi/Ishaka, Kasese, Mubende, Hoima, Masindi, Malaba, Lugazi and Iganga. Table 8.1 shows the trend of new sewerage connections.

Table 8.1: Trend of Sewer Connections

Year	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
New Sewerage Connections	85	95	104	153	262	229	333
Total Sewerage Connections	13,010	13,105	13,209	13,362	13,624	13,853	14,186
% Growth	1%	1%	1%	1%	2%	2%	2%

However, with the completion of the Sanitation Master Plans for both Kampala and other towns, another project under the Kampala Master Plan called Protection of Lake Victoria is still in progress. In Kampala, it's recommended that four sewer sub-zones be established in Bwaise, Nalukolongo, Kinawataka and Bugolobi. The Project objectives include; contributing to the reduction of anthropogenic pollution of the Lake Victoria in the vicinity of the Kampala urban areas and to contribute to the improvement of the living and sanitary conditions of the population living within the Kampala urban areas. The project total cost is about Euros 14 million (UGX 32.9 billion).

Kampala Sanitation Master Plan serves as the guideline for the present project. The project will result in decreasing pollution and nutrient discharge into the Inner Murchison Bay of Lake Victoria, improve the collection and treatment efficiency of the waterborne sewerage system, achieve 100% removal, disposal and treatment of septic tank sludge and will demonstrate ways for a cost effective, hygienic and environmental-friendly collection, haulage and disposal of pit latrine sludge.

8.6 SANITATION AND HYGIENE AT WATER FOR PRODUCTION FACILITIES

Hygiene and sanitation education has been one of the key priorities for the water for production sub sector during the financial year. It has been observed that although there is a good knowledge of hygiene and sanitation principles and practices among the rural population, there are a number of factors still hindering its adoption and application. Based on consultations with community members in some of these areas, it has been realized that financial constraints faced by households combined with the difficulty of accessing safe water do not allow them to apply some of these good hygiene and sanitation practices and principles.

In many areas, people have an assumption that using their scarce water for either bathing, hand washing or other hygiene and sanitation practices is wastage. In other areas especially in the cattle corridor the increased time and long journeys (approximately 10 kms to the water sources) required to fetch safe water from protected water points, when available, drive households to use more and more unsafe water and at times saving what is available for the most important activities like cooking.

It has been observed that people affected by these prolonged droughts especially nomadic pastoralists have unsatisfactory hygiene and sanitation practices.

Furthermore, poor hygiene and sanitation practices have serious health impacts especially in terms of increased water related diseases like cholera outbreaks and diarrhoeal diseases with the associated social and economic costs. The challenges in semi-arid areas in terms of sensitizing the pastoralist communities in the field of hygiene and sanitation remain huge.

Water for production has intensified sensitizing communities on hygiene and sanitation practices as part of all community mobilisation activities, particularly during training of Water User Committees. An area related to sanitation and hygiene that is emphasised in all mobilisation activities is the protection of catchment areas.

CHAPTER 9
Water Quality

"Diarrhoeal diseases, which are largely derived from contaminated water and inadequate sanitation, account for 2.4 million deaths each year worldwide and contribute over 73 million Disability Adjusted Life Years (a measure of disease burden, WHO 1999)."

Feacally contaminated protected spring (E.coli=560) after the floods in Dokolo District

9.1 INTRODUCTION

Waterborne diseases remain one of the major health concerns in the world. Diarrhoeal diseases, which are largely derived from contaminated water and inadequate sanitation, account for 2.4 million deaths each year worldwide and contribute over 73 million Disability Adjusted Life Years (a measure of disease burden, WHO 1999).

While Uganda is striving to achieve a target of 77% safe water coverage for rural water and 100% for urban by 2015 and significant progress has been made since 1990, outbreaks of waterborne diseases such as cholera however, continue to occur. Between April and August 2006 alone, there were 989 cholera cases and 13 deaths in Kitgum district (2006 SPR).

Strategies to improve sanitation and personal hygiene must be accompanied by strategies for water quality improvements if substantial health gains in the population are to be obtained from improved water sources.

The 'golden' indicator for measurement of performance for the sector with respect to water quality is *'the percentage of water samples taken at the point of water collection or wastewater discharge that comply with national standards'*.

This year the state of drinking water in large urban centres, small towns, rural areas and wastewater quality in large urban centres has been assessed based on microbial quality, colour, iron levels and BOD.[62]

9.2 RURAL DRINKING WATER

Although the National Water Quality Management Strategy has placed the responsibility of carrying out routine water quality monitoring on the districts, water quality monitoring in districts is still insufficient. In 2006/7, only 1% of the DWSCG was spent on water quality monitoring.

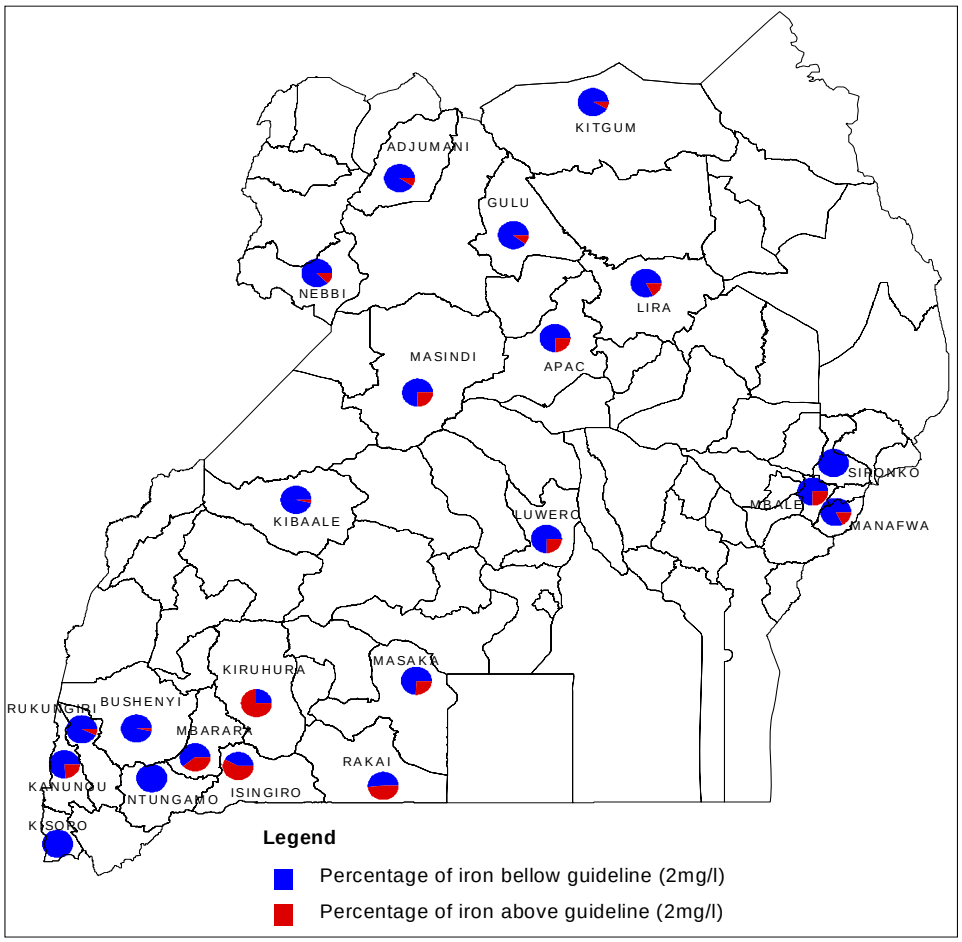
9.2.1 *Iron*

Groundwater is presently a major source of rural domestic water supply in Uganda, with deep boreholes and shallow wells serving 56% and 30% of the rural population respectively. Unfortunately borehole water in some areas of Uganda contains excessive amounts of iron, which has an unpleasant taste and odour, and displays reddish-brown colour as well as turbidity after settling. Such water spoils food colour when used for cooking and stains laundry when used for washing. Consequently, community members are reluctant to use such water and return to traditional unsafe open water sources. High levels of iron have been cited as a major cause of abandoned boreholes.

The results of analysis of water samples for iron from 22 districts ranged from 0.0mg/litre to 3595 mg/litre. The national guideline value for iron is 2 mg/litre. The state of groundwater quality in Uganda, with respect to iron levels is shown in Figure 9.1. Data from other districts is lacking.

[62] Biochemical Oxygen Demand. Wastewater containing high BOD implies high amounts of organic matter and hence inadequately treated wastewater. If such waste is released into the environment, during the process of breakdown of the organic matter, high amount of oxygen is required which leads to oxygen depletion and adverse impact on other oxygen consuming organisms in the ecosystem.

Figure 9.1 Iron Levels in Some Districts



While iron problems are localized in most parts of the country, there seem to be an iron belt in the country, which covers mainly the districts of Kiruhura, Mbarara, Isingiro, Rakai and parts of Masaka. In these areas alternative water sources other than groundwater need to be explored or low cost technology for removal of iron should be applied.

Iron in borehole water can either be naturally occurring (i.e. from the formation), or caused by the corrosion of the steel casings and galvanised iron (GI) rising mains of the handpump. Aggressive groundwater, (i.e. acidic, with a low pH) accelerates such corrosion. In such cases, the steel casing and GI pipe can be replaced with non-corrosive PVC. The U3 modified pump was introduced in Uganda to deal with this problem. Naturally occurring iron in borehole water can be treated to remove it. Box 9.1 outlines an initiative to pilot simple iron removal plants (IRPs) for handpumps.

Box 9.1 Prototype Iron Removal Plants (IRPs)

In order to address the problem of naturally occurring iron, efforts have been made to find a user friendly and sustainable method of removing iron from ground water and hence the construction of Iron Removal Pilot Plants (IRPs) in some districts.

The design adopted comprised of an aeration pipe and tray combined with a filtration chamber. Fifteen iron-removal plants have been constructed in the districts of Rakai (Kooki county), Hoima, Arua, Mubende and Kiboga.

Picture (below right): the community trying out the IRP at Bulakati (note iron sediments on the aeration tray).

A summary of the research findings on the IRP is:

- Efficiency of iron removal ranged from 58% to 99%, the average being 88%.
- Cleaning of the filter media is required every four days to four weeks, depending on the filter use and level of iron in the water.
- User perceptions and acceptability of water even after treatment varied from community to community.
- There may be delays between pumping and obtaining water from the filter outlet. This depends on the extent to which the pump and the plant have been in use and the extent of the clogging of the filter media.

The technology is effective and appropriate for communities who utilise deep/shallow wells in areas with high iron content (MSc Thesis by Davies, 2004). Challenges in the implementation of the pilot IRPs were:

- Collecting water quality data to monitor performance of the plants has been a challenge. DWD needs to work in collaboration with DWRM and local Government to address this issue.
- Sand replacement is a key concern as the required sand particle size is not always locally available.
- Low flow rate for some IRPs discourage use by some communities.
- User perceptions and acceptability of 'treated' water varies from community to community.

Recommendations for the next steps in the pilot are:

a. A rapid assessment of all the fifteen IRPs constructed by MWE is needed in order to assess state of the plants and their utilization.

b. Further study is required to assess the hydraulic performance and functionality of the plants.

c. Further study is needed to determine time required for iron bacteria to develop on the upper surface of the sand filter and how cleaning schedule may impact on the efficiency of the bacteria.

9.3 URBAN DRINKING WATER

9.3.1 *Large Towns*

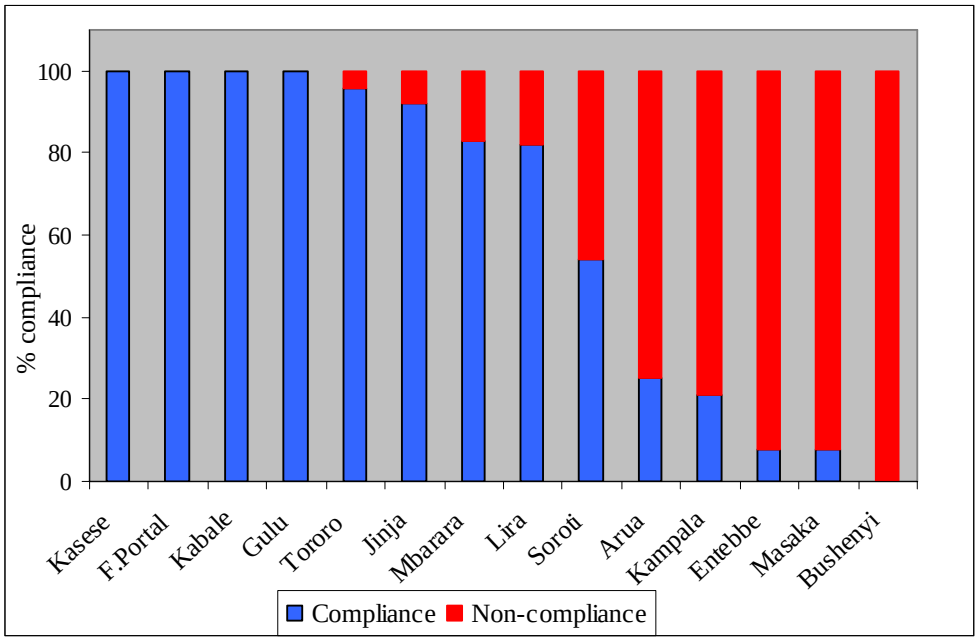
NWSC is responsible for the provision of water and sewerage services in 22 large urban towns in Uganda. Drinking water quality in the large urban towns under NWSC varied over the year. Safety of drinking water is compromised by the presence of micro-organisms, organic or chemical and radiological constituents. While microbial quality in large urban towns generally conformed to National Standards during the year, problems of colour were experienced in more than half of the towns (Figure 9.2). The recommended national standard for colour is 15 TCU. Non-compliance refers to water that has a TCU value which is above this level. The measured values ranged from 0 TCU to 204 TCU. The highest values were recorded in Entebbe.

Colour in drinking water is due to the presence of coloured organic acids (humic and fulvic) associated with the humus fraction of soil and other organic matter such as algae. Colour of

water is also strongly influenced by the presence of iron and other metals either as natural impurities or as corrosion products. Colour may also result from the contamination of the water source with industrial effluents.

Colour due to presence of organic substances poses a health risk in drinking water. During the process of chlorination the organic compounds are oxidised into haloforms e.g. chloroform. These are suspected carcinogens. The use of chlorine as a water treatment chemical has been discouraged in developed countries because of this problem.

Figure 9.2 Colour in NWSC Town Water Supplies (% samples that complied with TCU standard)



Colour in Kampala, Entebbe and Soroti water supplies were due to construction works that were going on during rehabilitation or extension of the water works in these towns. Mbarara experiences seasonal colour problems as a result of high iron content from River Rwizi which is the raw water source. Both Arua and Lira had operational problems. Masaka waterworks has a historical problem of humic acids because intake is from a swamp. An alternative source of intake should be explored. The initial design of Bushenyi waterworks cannot cope with the increased number of connections since it was taken over by NWSC. Plans are at advanced stages for upgrading the waterworks. The use of chlorine for water treatment at these waterworks when the raw water has high amounts of colour as a result of organic substances is not advisable for reasons already discussed.

9.3.2 *Small Towns*

Assessment of water quality of 5 problematic water supplies under Small Towns (which were identified by the Urban Water Authorities division, DWD) showed water quality in towns abstracting groundwater comply with standards[63] but some towns abstracting surface water had quality problems. Small towns abstract raw water from either groundwater or surface water. Conventional treatment is used where surface water is abstracted while water supplies abstracting groundwater use only a disinfection process. Conventional water treatment includes aeration, coagulation, settlement, filtration and disinfection unit processes.

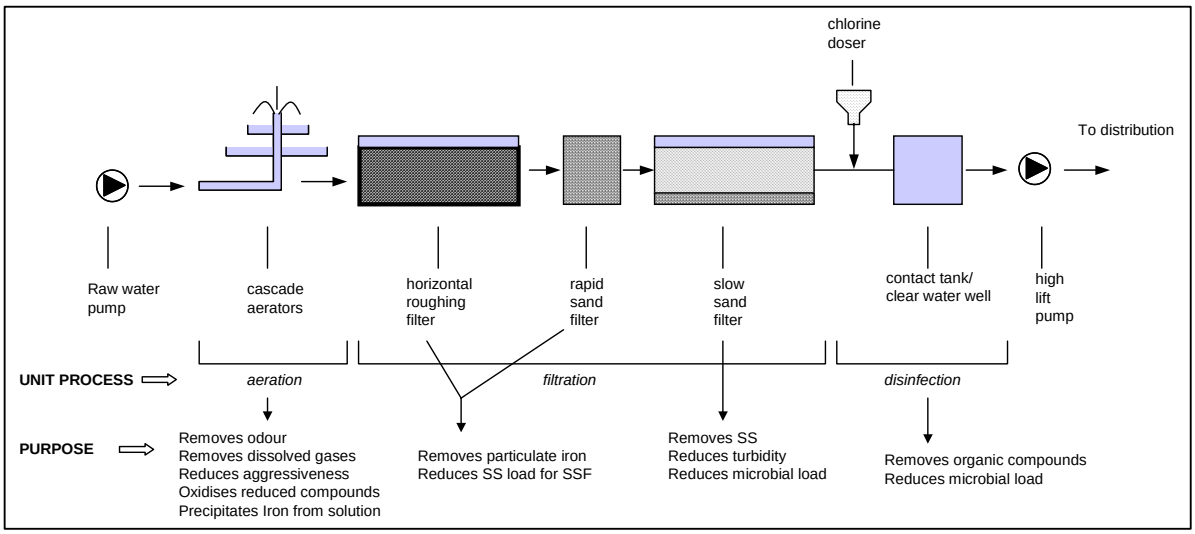
The efficiency of the treatment process was assessed by determining total coliforms, colour, turbidity and iron at each process unit.

[63] National Standards for portable water are used to assess suitability of drinking water

Many treatment units were not functioning well to provide for adequate removal of problematic parameters in all the 3 water supplies visited where conventional treatment processes are used. Kayunga Town Water Supply has specific problems and is therefore discussed in more detail in Box 9.2.

Figure 9.3 is a schematic layout of Kayunga Water Treatment plant.

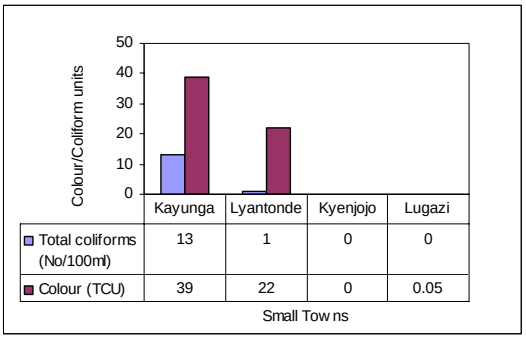
Figure 9.3 Schematic Layout of Kayunga Town Water Treatment Plant



Box 9.2 Kayunga Water Supply

An aeration unit among other functions precipitates dissolved iron. However, an earlier assessment (WRMD, 2006) indicated that the iron in this water supply is strongly bound to organic matter and can not be removed by aeration. At the time of visit, due to clogging of the pumps, water did not gash out of the fountain well. Frequent cleaning had depleted the gravel level to below design level. Furthermore, due to modifications of filters to serve as sedimentation tank, there was poor contact between flowing water and gravel particles. For roughing filters to work well there should be a thin film of water passing through and over the stones. Most of the sand in Rapid/slow sand filters unit is lost during cleaning or back washing. The chemical coagulation unit is either by-passed or improvised. This seriously compromises its functioning due to inadequate contact time for coagulation to take place. The result is inadequate removal of colour and iron.

Water Quality in Selected Towns



It is clear from the figure above, Kyenjojo and Lugazi that abstract groundwater had acceptable quality with respect to total coliforms and colour. Kayunga and Lyantonde abstract surface water and therefore require proper treatment. However, due to design and operational problems, water supplied does not comply with standards for some parameters.

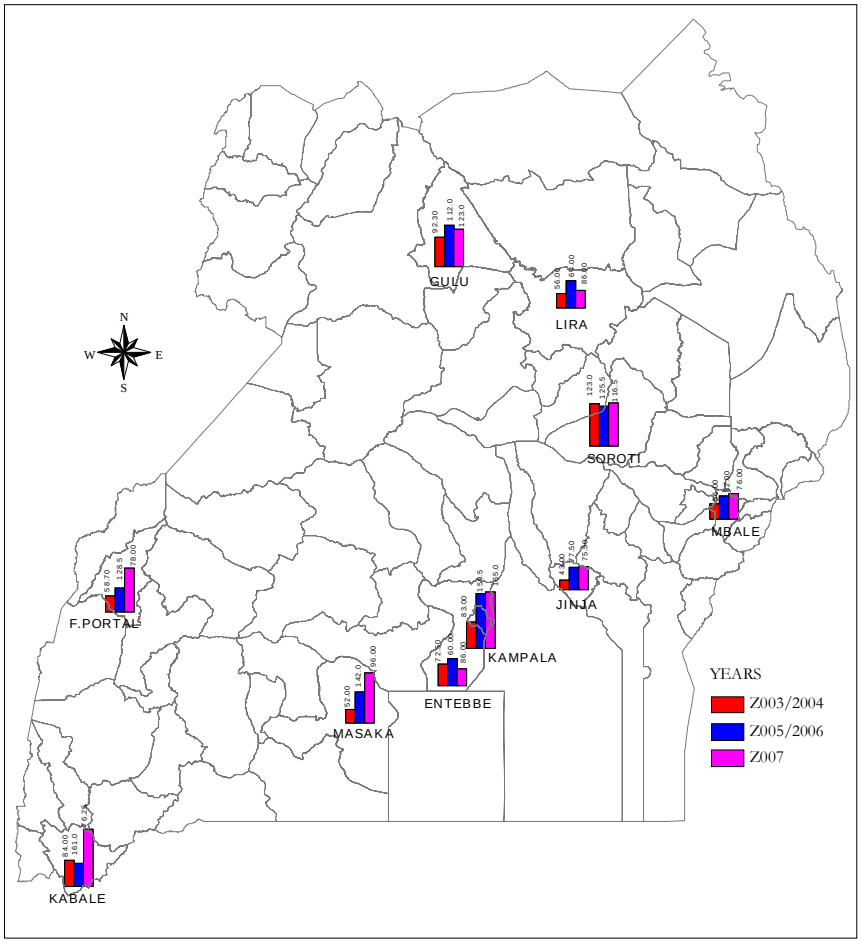
9.4 MUNICIPAL WASTEWATER

A study done in 2005 found out that large urban centres contribute 72% of the pollution loading into Lake Victoria compared to 13% by industries and 15% by fishing villages.

NWSC is responsible for the provision of water and sewerage services in 22 large urban towns in Uganda. Analysis of municipal effluents from wastewater treatment facilities in all the large towns under NWSC revealed low compliance to national standards. 223 data sets for 2006/7 for BOD, phosphorus and total suspended solids were analysed and compliance to wastewater standards[64] was found to be 12%, 26% and 40% respectively. The performance of wastewater treatment plants run by NWSC in all the towns has always been poor (DWD, SPR 2004, 2005). This is further illustrated by Figure 9.4, which is an analysis of the trend in BOD values from all the large towns under NWSC since 2003.

This problem has been recognised by NWSC and will be addressed on two fronts (i) a project will commence towards the end of in F/Y 2007/8 to improve the functionality of the Bugolobi Sewerage Treatment Works and (ii) NWSC is exploring the installation of low cost effluent treatment including wetlands to improve the quality if effluent. This has already commenced in Tororo, Masaka and Jinja.

Figure 9.4 Trends in BOD Loading from NWSC Towns



[64] The standard for BOD is 50 mg/litre but wastewater discharged had values in the range of 10 – 330 mg/litre. The standard for phosphorus is 5 mg/litre and wastewater discharged had values that ranged from 0.3 – 49 mg/litre. The standard for total suspended solids is 100 mg/litre and wastewater discharged had values that ranged from 16 – 3450 mg/litre.

Figure 9.4 reveals that there has been no improvement in wastewater quality in all the towns except Entebbe and Lira for the period 2003 to 2007. Most of the wastewater treatment facilities in all towns except Kampala comprise oxidation ponds. These ponds were constructed when the towns were small and their populations low. The capacity of the oxidation ponds is too low to cope with the increased waste load resulting from increased population in these towns which have expanded rapidly. This is complicated by poor maintenance of the existing facilities. In Kampala (Bugolobi wastewater treatment works) for example, frequent break down of treatment units affect the efficiency of the plant significantly.

NWSC is urged to accord the same importance it gives to water supply extensions to sewerage coverage and wastewater treatment. NWSC should realise that its activities are polluting especially Lake Victoria from which it is at the same time abstracting water for drinking. NWSC is therefore, itself partly responsible for the high cost of water treatment it incurs as a result of deteriorating water quality of L. Victoria.

9.5 WATER FOR PRODUCTION

No data exists on water quality for water for production facilities. Assessment of water quality is required for all facilities since the majority of the facilities are used both for livestock and for domestic purposes. No water quality samples were taken during the pilot baseline survey. However, the water quality was established through visual observation and through discussion with the users. None of the facilities visited was completely non-functional due to poor water quality, however 2% of all facilities visited were considered to have reduced functionality due to the poor quality of the water.

Based on figures from three (Abim, Apac and Isingiro) of the six districts covered in the baseline survey, 83 % of the facilities used for livestock were also used for domestic purposes. The lack of option of using other improved water sources forces the rural population to use untreated water from the facilities for domestic purposes. When constructing new facilities, technologies for providing people with water for domestic use should always be taken into consideration. Some of the new facilities constructed by MWE/DWD also include technologies for rudimentary treatment of the water to be used for domestic purposes, primarily through infiltration mechanisms. It is recommended to assess the possibility of up-grading existing facilities with mechanisms that improves the water quality drawn from these facilities and used for domestic purposes.

CHAPTER 10

Water for Production Storage Capacity

"Agriculture and livestock production is the mainstay for Ugandan economy contributing about 49% of the GDP and employing 80% of the population." (Water for Production Reform Study, 2004)

A borehole serving people and livestock in Sembabule District

10.1 INTRODUCTION

Water for Production concerns water for agricultural production, which includes water for crops (irrigation), water for livestock, water for aquaculture (fish farming) and water for rural industries, wild life, recreation, hydropower generation, transport and commercial uses. Agriculture and livestock production is the mainstay for Ugandan economy contributing about 49% of the GDP and employing 80% of the population (Water for Production Reform study 2004). Water resources need to be harnessed to supplement rain-fed agriculture in order to increase overall crop, livestock and fish production, especially in the semi-arid and drought prone areas, which persistently face acute seasonal water shortages.

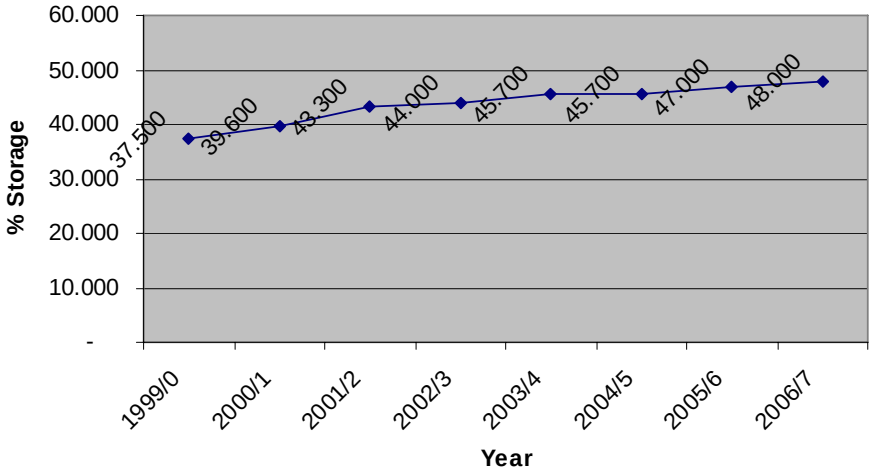
Water quantity refers to the additional storage created through construction of Water for Production facilities. The analysis on water quantity has been divided into three sections: 1) Storage created by central Government, 2) Storage created utilising the DWSCG and 3) Water quantity analysis based on data collected through the baseline survey.

10.2 STORAGE

10.2.1 *Storage created by central Government*

The total storage capacity created during the FY 2006/07 was 52,400 m^3. The planned storage increase of 341,000m^3 through reconstruction of Kailong dam in Kotido District and completion of Kulodwong dam in Abim District was not achieved due to continued insecurity in the Karamoja sub-region. Figure 10.1 shows the cumulative increase in storage capacity from 1999/2000 to 2006/2007. The percentage cumulative storage is a way of describing the extent to which the sector is meeting the water demand. For the FY 2006/7, the current storage is meeting 48% of the water demand.

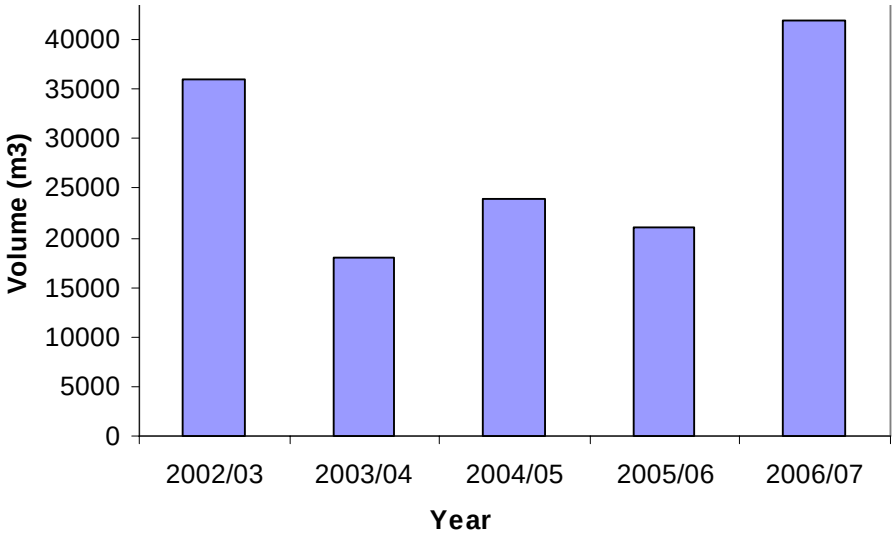
Figure 10.1 Cumulative storage created



10.2.2 *Storage created using the DWSCG*

Based on the annual reports on the Conditional grant submitted by the Districts, the total amount of water created by Districts through the construction of valley tanks for FY 2006/7 could be established. Figure 10.2 shows the storage created using the DWSCG.

Figure 10.2 Storage created using the conditional grant to Districts



10.2.3 *Data collected in pilot baseline survey*

The following analysis is based on the data collected in five districts through a pilot baseline survey. The districts covered by the analysis are Abim, Apac, Isingiro, Masindi and Nakasongola. Figure 10.3 shows the current storage capacity in these five districts grouped after the year the facilities were constructed. For instance, the current storage capacity of facilities constructed during the 1960's is slightly more than 2,000,000 cubic meters.

Figure 10.3 Time of creation of current storage capacity in pilot districts

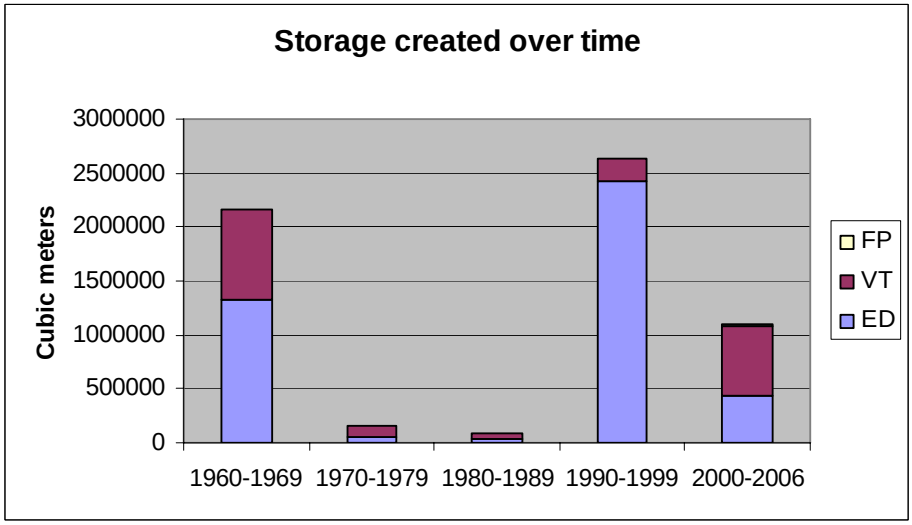
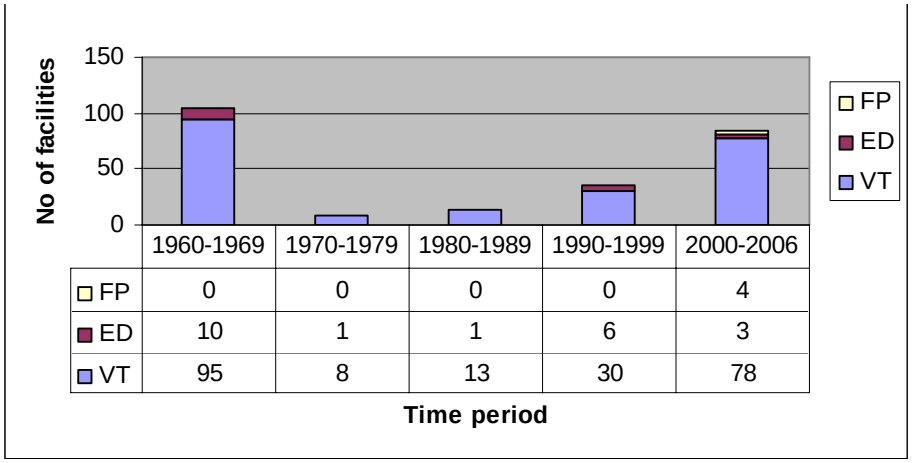


Figure 10.3 shows that, the large amount of storage created from 1990-1999 is explained by the construction of three large Government funded dams in Isingiro in the late 1990's. The graph also shows that during the politically unstable time during the 1970's up to mid-1980 few facilities were constructed. This is further highlighted in the Figure 10.4 that shows the number of facilities constructed over time.

Figure 10.4 shows that a large number of the existing valley tanks were constructed in the 1960's. In total more than 500 facilities were constructed by the government nationwide, of which 95 are still in use in the districts covered by the pilot baseline survey. The storage is

calculated based on their current volume (visual on-site estimates) and not on the volume they had when constructed. This issue is further highlighted in chapter 7 on functionality

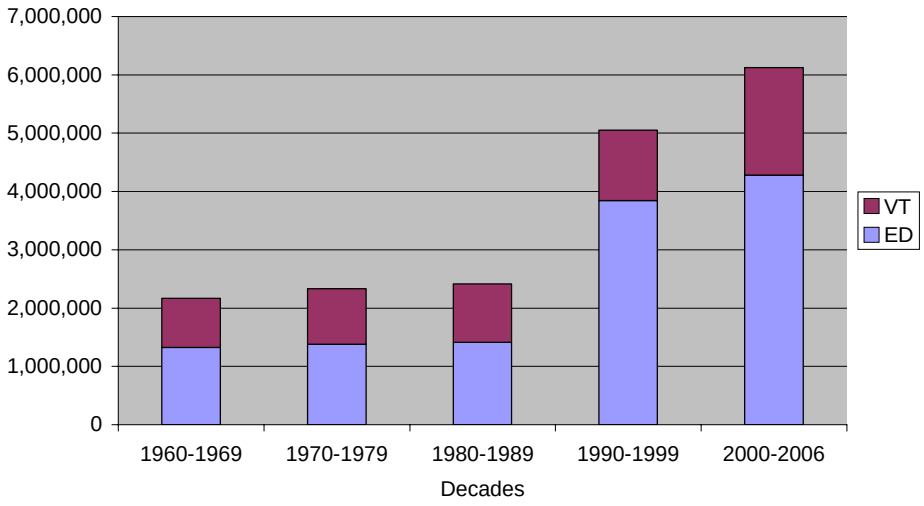
Figure 10.4 Number of facilities constructed over the years



	1960-1969	1970-1979	1980-1989	1990-1999	2000-2006
FP	0	0	0	0	4
ED	10	1	1	6	3
VT	95	8	13	30	78

Figure 10.5 shows the cumulative storage in Earth Dams and Valley tanks (the contribution of fish ponds to the storage capacity in the surveyed districts is insignificant; < 0.5 %).

Figure 10.5 Cumulative storage capacity in pilot districts



CHAPTER 11
Equity

"Some for all and not all for some...."
National Water Policy (1999)

Collecting surface runoff for domestic use in Kapchorwa District

11.1 INTRODUCTION

Equity is concerned with providing equal opportunities for the service and minimising differences between groups of people. Inequity in service provision can therefore be defined as avoidable unjust and unfair differences. In the case of rural water supply, increased coverage in provision of safe water to rural communities is directly affected by the distribution of the water points. Equity is concerned with fair distribution of improved water facilities to communities. It is on this basis that the equity indicator for rural water supplies is built. The indicator is defined as "**the mean sub-county deviation from the district average in persons per water point"**. Annex 11-1 describes how to calculate the indicator.

In the case of small town water supplies equity considers variation of coverage between towns and regions.

11.2 RURAL WATER SUPPLIES

11.2.1 *Equity between Districts*

Analysis of data for district access to safe water in rural areas (presented in Chapter 6), shows the inequity of distribution between districts (ranging from 12% to 95% coverage). It also highlights the fact that 5% of sub-counties in Uganda have coverage of less than 20%.

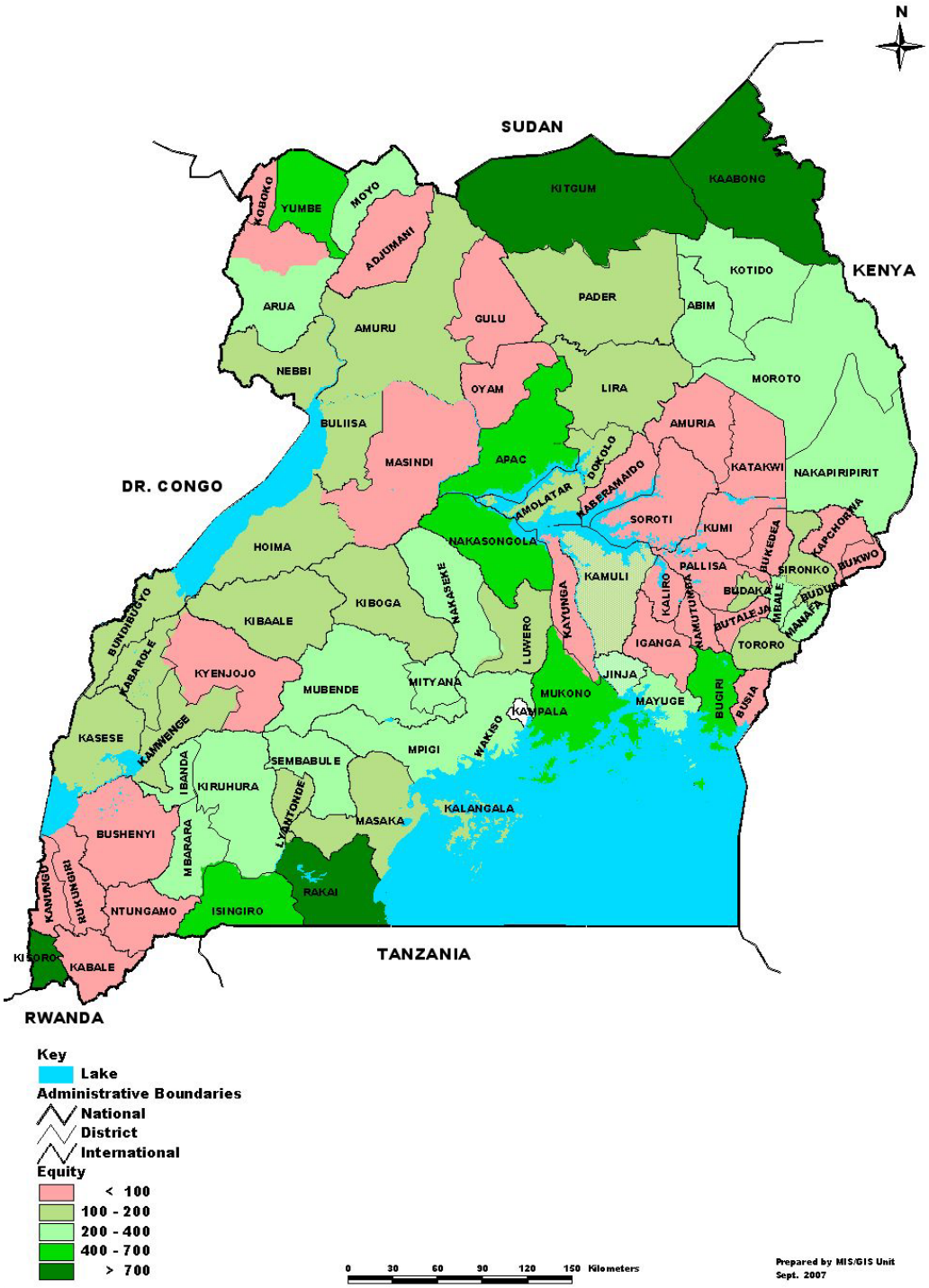
One way of considering access to safe water supplies is to examine the number of people per improved water point in a given area. Currently, across rural Uganda, there is an average of 382 persons per improved water point but there is considerable variation:

- A total of **49 districts out of 79** representing 62% are below this national average. The districts most affected are Kaabong (2,582 persons per improved water point), Kotido (1,243), Yumbe (1,318), Kiruhura (881), Bugiri (818), Isingiro (811), Mayuge (778), Nakapiripirit (772), Sembabule (727), Pallisa (640). Annex 1-2 provides details for all Districts.
- The top ten Districts in terms of number of people per improved water point are as follows: Kabale (124), Kanungu (138), Rukungiri (187), Koboko (197), Ntungamo (213), Kasese (215), Kamwenge (224), Bushenyi (231), Sironko (267), and Nebbi (269). Clearly these are also the ten Districts with the highest coverage rates.

11.2.2 *Equity within Districts*

Figure 11.1 shows the degree of inequity in distribution of improved water facilities between districts. Equity/inequity is defined as the mean sub-county deviation from the district average in persons per improved water point. A low numerical value for this indicator shows better distribution of water facilities whereas a high numerical figure indicates inequitable distribution. The pink colour shows good equity within the district (less than 100). The very dark green colour shows very poor equity within the district (>700).

Figure 11.1 Equity within District: Mean sub-county deviation from the District average coverage



Source: Districts annual reports submitted to the Directorate of Water Development at the end of the financial year 2006/2007.

11.2.3 *Equity Trends*

A total of 17 Districts have seen their equity worsen by June 2007 compared to June 2006 (refer to Annex 11-2). 46 Districts have seen their equity improve compared to June 2006.

Kitgum is of particular interest. The equity worsened from 2006 to 2007 (4068 to 4092). This is partly due to the return of Internally Displaced Persons (IDPs) to areas where the infrastructure has totally broken down. The Districts of Kitgum, Lira, Oyam, Amuru reported that they are financially constrained due to the fact that they are required to use a substantial portion of their DWSCG to maintain existing water supplies in and around the IDP camps (point water sources and motorised piped water schemes) and construct new facilities in return areas.

11.2.4 *Factors that affect Equity*

Allocation. Currently, local Governments use numerous criteria in allocation of water points. Two broad forms of allocation are[65]:

- Allocation of a proportion of the physical **water facilities** to the sub counties, which determine the specific beneficiary communities (in parishes and villages).
- Allocation of **resources** (funds) to the sub counties, which determine the specific beneficiary communities.

In some Districts, the water potential varies considerably. In others words, some sub-counties or even parishes require more investment than others in order to reach the same level of access to improved water supplies (eg Box 11.1).

Box 11.1 Example of Allocating Funds to Sub-Counties

"When we get the DWSCG, we deduct funds for programme management and divide the rest for water supply based on the number of sub counties and respective populations we have so that each sub county gets a proportional amount of money. This is caused by political pressure to ensure equal distribution of resources in the District. As a result the communities in areas with low water potential and requiring rather expensive facilities like boreholes get fewer facilities while those with high water potential construct more cheap technologies facilities like springs" DWO (District name removed for purposes of confidentiality).

The sector has not issued clear guidelines to Local Governments on allocation of water facilities between sub-counties. The guidelines, once issued to districts, would assist in equitable distribution of facilities.

Limited Resources. Districts report limited resources available for water facility development with some still having villages which do not have access to a water facility and therefore need to go to another village to fetch water (eg Box 11.2).

[65] Source: MWE field visits to Apac and Soroti in August 2007.

Box 11.2 District Perspective on Challenges of Improving Equity

"In this District we still have a total of 29 villages that do not have any form of improved water facility and communities have to go to other villages. This is attributed to the need for expensive technology options of deep wells whose demand is overwhelming to the district that we provide basing on the availed resources. (ADWO - District name removed for purposes of confidentiality).

11.3 EQUITY BETWEEN THE SMALL TOWNS

Chapter 6 shows that there are considerable disparities in access to safe water between different small towns. Figure 11.2 shows the distribution in number of people per improved water point for the four different regions in Uganda. Clearly, there is an imbalance with towns in northern Uganda that are considerably underserved compared to the rest of the country. This issue needs to be addressed. Figure 11.3 provides an overview of the distribution of water supplies for 149 towns (as reported on in Chapter 6-Access).

Figure 11.2 Equity in the distribution of water points per region

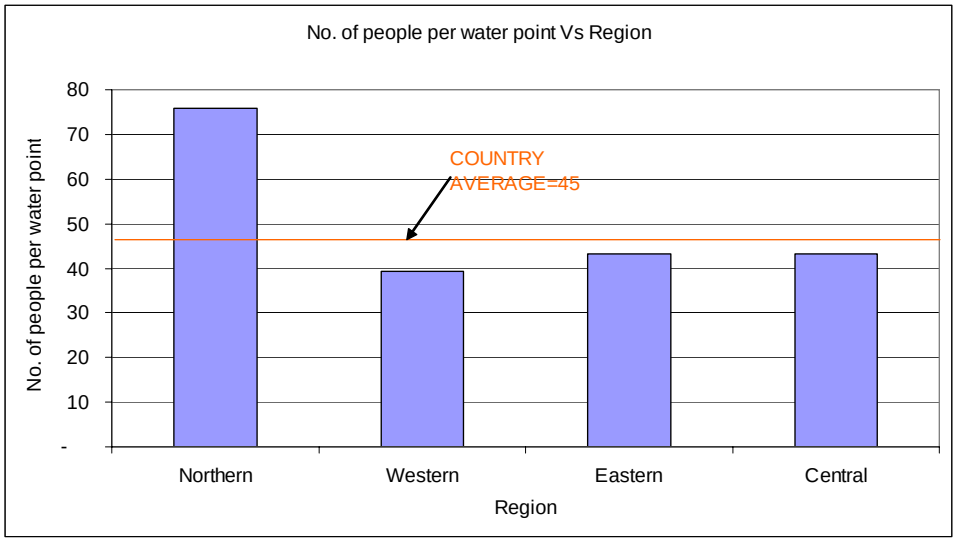


Figure 11.3 Distribution of water supplies for 149 towns

11.4 WATER FOR PRODUCTION

Equity in the context of Water for Production refers to an equitable distribution and sharing of the available water facilities with the objective of minimising differences in service levels amongst the user communities.

At national level, the WfP Sub-sector has developed criteria for selection of areas where central government funded WfP interventions are to take place. The criteria for district selection are set out in Box 11.3.

Box 11.3 Allocation of Water for Production facilities

Priority is to be given to water stressed areas with least interventions. The chosen districts should be in different agricultural zones. The district should have potential for livestock; aquaculture and irrigation i.e. integrated approach to agricultural production.

For intra-district site selection for central Government funded interventions a number of criteria have been developed. The site should have potential for the intervention ie high potential for rainwater harvesting for agricultural productivity, stream/river diversion for irrigation. Availability of land free of encumbrances. Area must be accessible for marketing of the products. Priority is given to areas with groups that are involved in high value production already. Priority is to be given to poor organized communities as opposed to wealthy private investors. The site should have potential for livestock, aquaculture and irrigation i.e. integrated approach. There must be demand from the beneficiaries. Priority be given to areas with larger number of beneficiaries.

Whereas equitable distribution of Water for Production facilities at the national level is relatively easy to achieve and monitor, the situation is more complex at the lower levels due to the nature of the facilities. Siting of surface water storage reservoirs is largely dependant on area topography, hydrology and geology. Often users identify sites, that are close to communities but technically inferior while the technically feasible ones are rejected by the users due to too long walking distances. It is therefore important that technical officers spearhead the site selection.

Equity analysis for the water for production sub-sector, is not only important for assessing the provision of equitable water services but is also of great importance as a planning tool. The equity analysis below is based on data collected through the pilot baseline survey. At the time of compilation of the SPR, livestock populations per sub-county were only available for three of the six districts covered by the pilot baseline survey which limited the equity analysis to only these three districts (Apac, Masindi, and Nakasongola).

For estimation of equity for rural population, the mean deviation from the district average in terms of people per water source is used. This is not applicable for water for production facilities. Instead the equity analysis has been based on "number of liters per animal per day during the dry season". The mean sub-county deviation from the district average is therefore represented as number of liters per animal per day. As a comparison it can be mentioned that the design volume per animal per day during the dry season is 30 l. The equity figures for the three districts are presented in Table 11.1.

Table 11.1 Equity analysis based on no. of litres/animal/day available during the dry season

District	% Access to water during dry season	District average / no of litres per animal per day	Mean sub-county deviation
Apac	**29**	**11**	**13**
Masindi	**90**	**73**	**55**
Nakasongola	**71**	**25**	**22**

The most equitable distribution of facilities is found in Apac, the district with the lowest coverage and the lowest district average in terms of number of liters per animal per day during the dry season. Masindi has a high coverage and the district average of number of liters per animal is above the 30 l used when designing WfP facilities. The high mean sub-county deviation is explained by the fact that of Masindi's 12 sub-counties, 7 have values

ranging between 33 l and 207 l per animal and 5 sub-counties have 0 l per animal. This implies an uneven distribution of WfP facilities in the district.

Factors that may affect the equity analysis include the presence of natural water bodies that do not dry up during the dry season. These have not been specifically taken into consideration in the analysis above but may have had an impact on the choice of location of the facilities.

Another factor affecting the mean sub-county deviation is the proportion of storage available in dams and the proportion available in valley tanks in a given district. The distribution of dams in a district will be less equitable simply since they are normally fewer in number compared to valley tanks. In addition, dams store more water, which in the data analysis may result in areas presented as overserved. The proportion of water stored in dams is 17%, 40% and 22% for Apac, Masindi and Nakasongola respectively. A third factor affecting equity analysis is the nomad behavior of many of the cattle keepers. The cattle keepers will migrate to areas where water exists, i.e. may cross from a poorly served sub-county to another during the dry season. This is not captured in the above analysis.

Asan example of how eqiuity analysis can assist the desciion making process, Figure 11.4 and Figure 11.5 provide information on equity for WfP in Apac District. The Figure below shows equity as presented by the number of available litres per animal per day during the dry season. The map shows the geographical distribution of facilities.

Figure 11.4 Equity analysis for Apac District (Mean Deviation from the district average)

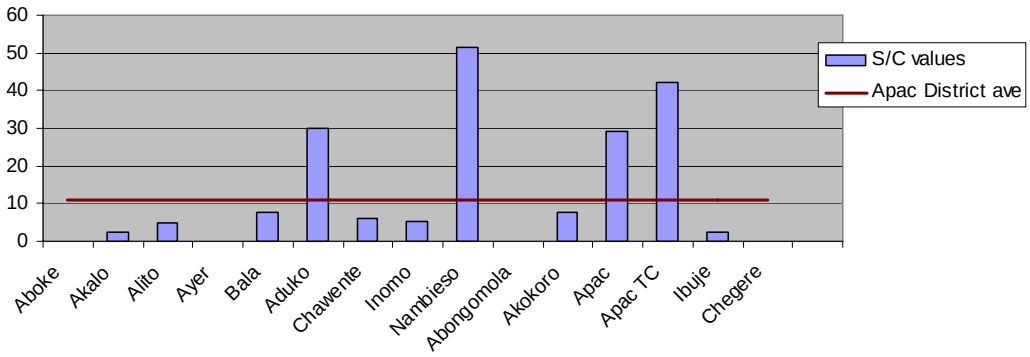
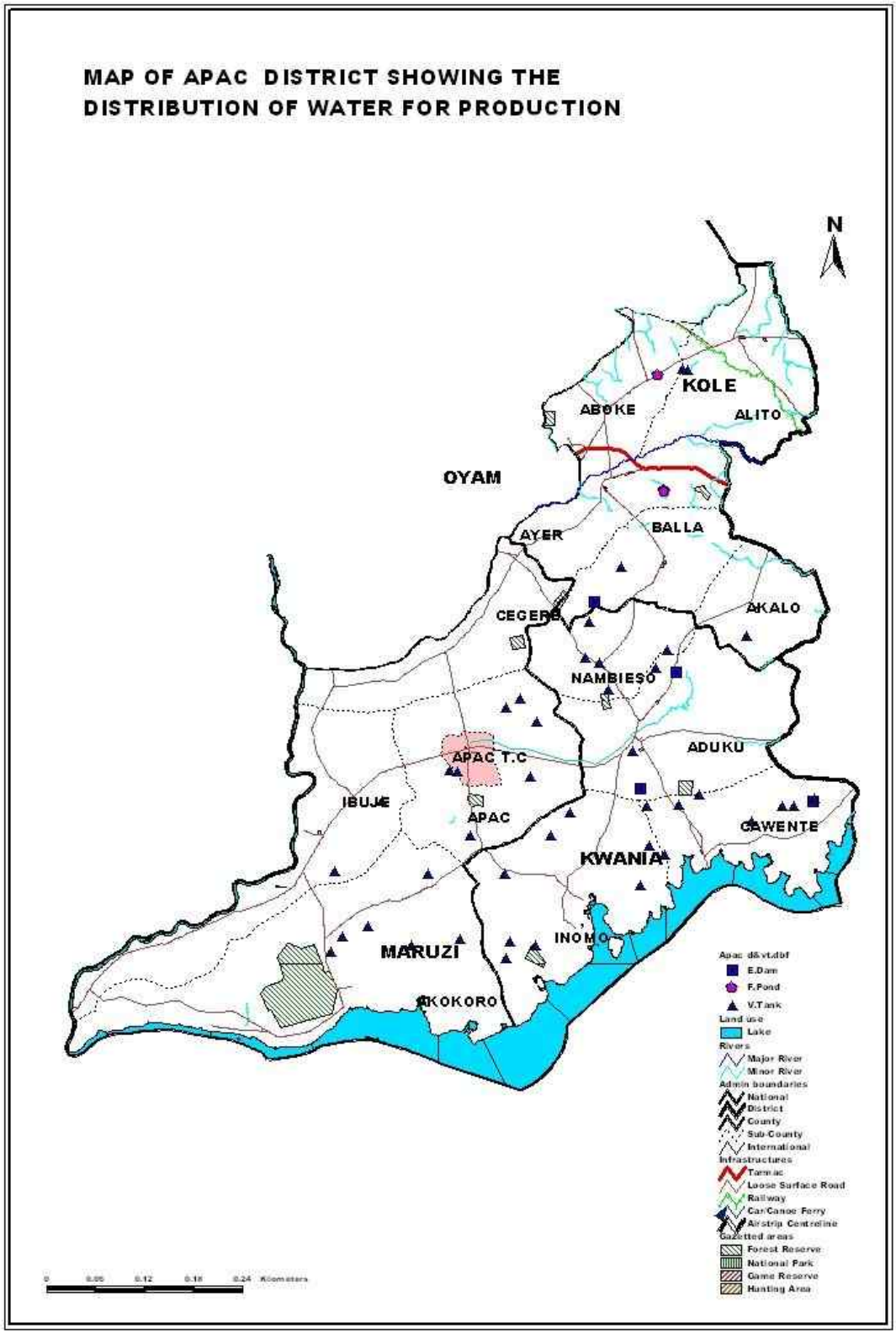


Figure 11.5 Geographical distribution of WfP facilities in Apac district



CHAPTER 12
Management

Under the Community Based Maintenance System, communities are responsible for the management and maintenance of their water facilities.

Community based maintenance of a handpump in Mukono District

12.1 INTRODUCTION

The indicator to assess community management is the percentage of water points with actively functioning Water User Committees (WUC), in the case of rural water supplies and Water Boards (WB) in the case of Urban Water Supplies.

From the FY 2007/2008, Districts are required to report on percentage of water points with actively functioning WUC. Some of the key signs that a WUC is actively functioning is that it ensures and encourages communities to:

- Make regular contributions towards O&M;
- Hold regular meetings;
- Attend to minor repairs regularly and when needed;
- Maintain good hygiene and sanitation around the water source including clean water fetching containers;
- Maintain a good fence around the water source; and
- Observe by-laws.

Field visits by MWE and MGLSD collected information specifically on community management in 14 districts throughout Uganda[66]. The field survey was undertaken jointly with district officers. Enquiries were done about how WUC were functioning and the state of water supply facilities that they are supposed to operate and maintain. In addition, the quarterly reports of 7 districts for 2006/7 FY were reviewed, and the district expenditure report for FY 2006/7 and the PAF monitoring report of July 2007 were all scrutinized.

12.2 RURAL WATER SUPPLIES

12.2.1 *Functional Water User Committees*

Table 12.1 shows the records of how WUCs were functioning for 6 of the 14 Districts visited by of MoWE and MGLSD staff. The other districts did not have records for this indicator.

Table 12.1 Functionality of WUC as reported by districts during field visits[67]

District	No. of Water Sources			% of WUC		Remarks [observations by the field team and district records]
	Total	With functional WUC	With **non** functional WUC	Functional	Non Functional	
Dokolo	446	379	62	85%	14%	1% of WUC were not formed
Koboko	419	283	136	68%	32%	All visited water sources had good sanitation and one water source was new
Masindi	928	722	206	78%	22%	All visited water sources had poor sanitation, broken down fences (but still functional)
Kamuli	1091	993	98	91%	9%	
Masaka	2264	870	1394	38%	62%	WUC visited were not trained, many were not formed. There was no district follow up
Iganga	1109	226	883	20.4%	79.6%	WUC were not trained, many were not formed and there were no district follow up
Total	**6257**	**3473**	**2779**	**63.4%**	**36.4%**	

[66] The field visits comprised of key informant interviews, observations, consultations/meetings with stakeholders in the districts of Iganga, Kamuli, Kumi, Tororo, Butaleja, Kiruhura, Ibanda, Masaka, Lyantonde, Masindi, Lira, Dokolo, Yumbe and Koboko were visited. Desk reviews were conducted for the districts of Kumi, Bundibugyo, Iganga, Tororo, Ibanda, Kamuli and Kiruhura.

[67] Source: District Records, August 2007

On average, 63% of WUCs were reported to be functional. Kamuli reported the highest percentage of functioning WUCs (91%) while Iganga reportedly had the lowest percentage of functioning committees (20.4 %). According to the Iganga district records, the low WUC functionality is partly a result of limited follow up and inadequate training of WUC members.

As part of Uganda's Community Based Maintenance System (CBMS), contributions are required towards the initial capital cost (known as Community Contributions to Capital Costs or CCCC). Community members are also expected to make regular contributions for O&M. The field teams visited 25 point-water sources in 9 districts[68] to understand more about community contributions. The findings are summarised on Table 12.2 below.

Table 12.2 Community Contributions for O&M and Facility Status

District	Name of Water Source	Monthly User Contribution (UGX)	Remarks
Yumbe	Oduijo	300	Good sanitation at water source, repairs done
	Angua	500	Good sanitation at water source, repairs done,
Koboko	Mindrabe	0	Broken down for 6 months , needs major repair
	Gborokolongo	500	Good sanitation at water source, repairs done,
	Ibanda	500	Good sanitation at water source, repairs done,
Lira	Kulo- Okoi	1000	Good sanitation at water source, repairs done,
	Bar Lwala	500	Fair sanitation at water source, repairs done,
Dokolo	Amir Kwach	200	Fair sanitation at water source, repairs done,
	Dokolo	200	Good sanitation at water source, repairs done,
Masindi	Kyamyanyogo	0	Poor sanitation, contribute only when facility breaks down.
	Rwbigwara	0	Poor sanitation, contribute when facility breaks down
	Kyamaiso	0	Poor sanitation, contribute when facility breaks down.
Masaka	Kingo	0	Contributions rare, poor sanitation, no repairs done
	Kyogya	0	Contributions rare, poor sanitation, no repairs done
	Kaboyo	0	Contributions rare, poor sanitation, no repairs done
Lyantonde	Kibato	0	Fair sanitation around source, contributions only when facility breaks down
	Lyantonde-Rural TC	0	Contribute only during drought , good sanitation around source, repairs done
	Kaliro	0	Contribute only when facility breaks down, poor sanitation around source, repairs done
	Nabiguye	0	Contribute only when facility breaks down, good sanitation around source, repairs done
	Kibisi	0	Contributions irregular, poor sanitation around source, repairs done
Butaleja	Nabigava	1000 [when facility breaks]	Contribute only when facility breaks down, fair sanitation around source, repairs down
	Namuseru	1000 [once a year]	Contribute only when facility breaks down, fair sanitation around source, repairs down
Ibanda	Soweto	500	Fair sanitation around source and repairs done
	Kyarubimbi	500	Fair sanitation around source and repairs done
	Nyabisikye	0	Poor sanitation around source and no repairs done

Source: MoWE and MoGLSD staff field notes, August 2007

[68] Yumbe, Koboko, Lira, Dokolo, Masindi, Ibanda, Tororo, Butaleja, Masaka and Lyantode

Table 12.2 shows that in the communities in the districts where some form of regular contribution was made (either monthly or once/year), the water sources were better maintained and these districts were Lira, Dokolo, Yumbe Koboko Buataleja, Lyantonde and Ibanda. In such cases regular repairs had been done and sanitation around the water source was found to be satisfactory.

Box 12.1 below shows views of community members and district official about the reasons for non functioning WUCs as expressed to the field team of MoWE and MoGLSD.

Box 12.1 Views of Community Members and District Officials on WSC

Views expressed by communities as reasons for WSC not functioning well

- Men mismanaging community contributions;
- Poverty [no money for contributions]
- Lack of training;
- WUC members and caretakers expect remuneration for their "services";
- There is no re-election of members in case of death or transfer of elected members – When committee members are replaced, new members don't receive training;
- Hurried committee formation; and
- Committee members not being committed.

Views expressed by district officials as reasons for WSC not functioning well

- Negative attitudes of users and committees on community contributions;
- Men mismanaging community contributions;
- Inadequate involvement of community members during planning and implementation;
- Lack of sense of ownership;
- Priority given to new water sources rather than old in terms of budgets;
- NGOs do not emphasize community contributions especially in emergency situations;
- Need for community contribution to capital costs is not known;
- Lack of ownership of the facilities; and
- There are no staffs to work on "software" issues.

Source: Views collected by MoWE and MoGLSD field team in 14 districts, August 2007

From the views expressed in Box 12.1, lack of follow up support and mismanagement of community contributions seems to come out as important causes of non functionality of WUCs from both community members' and district officials' view. While inadequate involvement of community members in planning and implementation of water projects, leading to lack of ownership of the facilities came up strongly from the district officials' view. In adequate preparation of community members through training, sensitisation and mobilisation coupled with hurried committee formation of WUCs were pointed out by the community members as hindrance to better functioning of WUCs.

12.2.2 *Demand Responsive Approach & Community Involvement*

Sustainable management of water facilities implies full involvement of local communities in planning, implementation of water and sanitation facilities as well as operations and maintenance of the same. Sector policies and guidelines emphasize the need for full participation of beneficiary communities at all stages of development in the water sector. The Demand Responsive Approach (DRA), applied in the programme, entails that communities actually express their demands by requisitioning for the services through their local sub counties in order for these to be provided.

PAF monitoring team found that, in Iganga, Busia, Mayuge and Namutumba, where the RUWASA project was implemented, the DRA approach was used in the provision of new water sources. The communities identified the need for safe water sources during the bottom up planning process and then submitted applications to the District Water Office through the sub-counties. The District Water Officers in all 4 above mentioned districts visited in Eastern Uganda showed to the monitoring team a backlog of application letters requesting for new water sources submitted by the communities through their local sub counties to district water offices. It is important to note that in Butaleja, and Busia where DRA was introduced by RUWASA project in early 1990s, the PAF Monitoring found that all WUCs were functional and the water sources were well maintained.

DWD intends to promote DRA in local Governments with the availability of the newly produced District Implementation Manual (for staff) and the Community Resource Book (community members) which, among others, clearly emphasize participatory approaches to motivate and better determine local communities' needs with assistance of TSUs and in cooperation with NGOs[69].

12.2.3 *Community Training*

Training of WUCs and beneficiary communities also plays an important role in building community capacity to better maintain water facilities. District reports of Kiruhura, Kumi, Kamuli, Ibanda, Tororo, Bundibugyo and Iganga that were reviewed show that districts carried out community support activities that included training of WUCs in practical skills, training of extension workers in PRA tools, training in preventive maintenance, and training of borehole mechanics. An analysis of expenditure of all districts for 2006/7 FY on training of communities reveals that on average 3% of the DWSCG is spent on training in software activities.

13 of the visited 25 WUCs (52%) said they had received training. It was also noted that WUC members interviewed in the long established districts of Lira, Masaka and Tororo, reported not to have ever received any form of training. The state of affairs of the water sources in Masaka and Tororo were found poorly maintained (see Table 12.2). However, training does not always improve O&M. For instance in Masindi, all visited WUC reportedly had received training but this was not significantly reflected in O&M of the water facilities. All sources visited were in poor sanitary state and community contributions for O&M were rare.

Systematic follow-up of the impact of community training needs to be done by the local governments and the centre. DWD needs to guide the districts to undertake evaluation of the training activities to be able to achieve the desired results.

12.2.4 *Follow up*

Regular follow up visits and advice from districts/sub county officials clearly boost communities capacity and motivation to maintain water sources. Out of the 25 point water sources visited 12 (48%) of the WUCs, reportedly had received monitoring visits and technical advice from district officials. It was found that the water sources in communities that did receive some form of follow up visits from the LGs were better maintained (Ibanda, Dokolo, Lira, Yumbe, and Koboko districts) as can be seen on Table 12.2. Those that reported not to have received any follow up visits had poorly maintained sources (Masaka, Tororo and Masindi). District Officials stated reasons for poor follow up as that of inadequate staffing in the water office and limited funds. The recent restructuring of Districts left many with inadequate staff in the District Water Office.

Although up to 12% of the Conditional Grants (CG) is earmarked for software activities including monitoring, an analysis of district expenditure reports for FY 2006/7 shows that on average, districts spend 7% of the DWSCG on software activities. The reports also reveal that

[69] E.g. Participatory Rural Appraisals (PRA) and Participatory Monitoring and Evaluation (PM&E).

an average of 5% of the budget is utilised for supervision and monitoring but do not specify how much of the this is devoted to monitoring old water sources and supervision of new ones. It is therefore, not clear how much of these funds are utilised for follow up of old water sources. However, the MWE and MGLSD field team found out from the district officials that much of these funds are utilised on supervision of the new facilities other than the old as priority is given to the new sources [see box 12]. It is crucial that funds are earmarked for follow-up of WUC at old water sources. The field team this year has clearly shown that follow up significantly contributes to the functioning of the WSC and hence sustainable O&M of water and sanitation facilities.

In addition, in 52% of the districts visited, the community members reported that there were few follow up visits to their water sources by district and sub county officials. An important and common feature of RUWASA and CAP projects that promoted Community Based Management Systems (CBMS) for water and sanitation *was the intensive follow up* from the project that had adequate and well motivated staff working on software activities[70].

The local governments are in a different situation and there is a dire lack of staff at district and sub-county levels responsible for community management of water and facilities, i.e. the "software" activities. Table 12.3 shows the District staffing situation in 16 sampled districts visited by the PAF monitoring team in June 2007. As can be seen from the table the general staffing situation in the water offices in all districts visited was found to be inadequate. Only 6 districts out of 16 had Assistant District Water Officers in charge of mobilisation [ADWO – Mob] and 2 out of 16 districts had Assistant District Water Officers in charge of sanitation [ADWO – San] and these are the category of staff handling community management in the local governments.

Table 12.3 District staffing situation

District	DWO	Assistant District Water Officer				CWO	Remarks
		Water	Mobilisation	Sanitation	Planning		
Iganga	1	1	1	0	1	1	ADWOs are seconded from stakeholder Dept
Busia	1	1	1	0	0		DWO – water also doubles for sanitation
Namutumba	0	0	0	1	0	0	This is a new district
Mayuge	1	0	0	0	0	0	
Masindi	1	1	0	0	0		One ADWO takes care both sanitation and community mobilisation
Bulisa	1	0	0	0	0	0	New district
Luwero	1	1	0	1	1	2	
Nakasongola	1	0	0	0	0	0	
Gulu	0	1	0	0	0	0	DWO is on study leave. Trainee are engaged on temporsy baisi to assist

[70] The RUWASA project used private individuals to do follow up who were paid on "output" basis. Districts such as Pallisa (involved in the former RWASA project) have continued to use this approach.

District	DWO	Assistant District Water Officer				CWO	Remarks
		Water	Mobilisation	Sanitation	Planning		
Lira	1	1	0	0	0	0	
Apac	0	1	1	0	1	0	
Oyam	0	1	0	0	0	0	This is a new district
Rukungiri	1	1	1	0	0		ADWOs are seconded from stakeholder Dept
Ntungamo	1	1	1	0	0	0	ADWOs are seconded from stakeholder Dept
Mbarara	1	1	1	0	0	0	ADWOs are seconded from stakeholder Dept
Isingiro	1	0	0	0	0	0	
Total	11	11	6	2	3	3	

Source: District Records

Currently, the established posts in the water office are for District Water Officer (DWO), Assistant District Water Officer (ADWO), County Water Officer (CWO) and Borehole Technician. The posts of Assistant District Water Officer (ADWO) for mobilisation, sanitation and planning have been scrapped following the recent restructuring of district staffing by the Public Service Commission. The Public Service Commission recommended staff structure for the District water Office is absolutely inadequate.

To ameliorate the staffing situation, DWD has advised Chief Administrative Officers to recruit at least three officers to strengthen the planning, community management and sanitation functions in the District Water Offices and also secure County Water Officers (one per county). However, many Districts continue to lack these officers. In cases where these posts are held by seconded staff from other stakeholder departments there is a strong feeling that the officers are not doing enough for the sector due to multiple and divided demands and commitments elsewhere.

It is also necessary to work more closely with local NGOs/CBOs and even outsource software activities to NGOs. Mechanisms for this are currently being explored.

12.3 MANAGEMENT IN SMALL TOWNS

12.3.1 *Management Structures*

In 2006/7, the management arrangements of 149 towns were as follows:

1. 57 towns are managed by private operators and supported by the Water Authorities Division of the Directorate of Water Development. Some of these will be handed over for management by NWSC in the future.
2. 44 towns supported under the South Western Umbrella Organisation management structure.
3. 32 towns registered for support under the new Umbrella Organisations in Eastern Uganda and Rwenzori region.
4. 16 towns where planning and implementation is ongoing under the small towns programmes in DWD. Once completed, these will be managed by private operators

and supported by the Water Authorities division of the Directorate of Water Development (ie category 1)

Key institutional and management issues in the small towns are set out in Annex 5-4 include:

- There is still need for universal metering in all schemes so as to account for all water produced. This will also help in effective and good calculations when setting adequate water tariffs for these systems.
- Water quality monitoring is still a problem for regional Umbrella secretariats. The laboratories need to be operational and well equipped with proper equipment to serve a specific region. It is estimated that each laboratory should serve averagely 11 districts.
- There is need for regular training in managerial, financial and technical issues for WSSBs and Operators by the various regional umbrella secretariats and the Water Authorities Division of the Directorate, at least twice a year.
- There are still high operation and maintenance costs in areas where the schemes are using hydro electro power which is very expensive.
- There is need for improved/enhanced regulation of water authorities, and the new concept of TSUs has started offering some help in this direction.
- For systems where solar energy is being used, security alarm installations should be made and maintained so that the problem of theft is minimized. This was found to be a big problem in the South Western Umbrella schemes as many solar panels were stolen.

12.4 WATER FOR PRODUCTION

Community management for water for production involves mobilising community members to take responsibility for the operation and maintenance of water for production facilities.

245 valley tanks and dams were visited during the pilot baseline survey. Communities managed 66% of these and private stakeholders managed the remaining 34%. Of the facilities under community management, 57% had an active Water User Committee. Of these, 14% had been retrained after their establishment.

CHAPTER 13
Gender

"To address the recent increases in inequality, Government's strategy will focus on agriculture, promote better security in the North, and take actions to empower women and strengthen women's land rights, and promote the involvement of men in HIV prevention and care." (Uganda Poverty Eradication Action Plan, 2004, Pillar 2)

Fetching water from facilities in Potika IDP Camp

13.1 INTRODUCTION

The Poverty Eradication Action Plan (PEAP) (2004/5-2007/8) and the National Gender Policy (1997) require all development agencies to mainstream gender in their programmes and activities by ensuring that gender issues are considered at all stages of the development process. The purpose of gender mainstreaming is to ensure that women and men, girls and boys are able to move out of poverty and achieve improved and sustainable livelihoods.

Accordingly, in 2003 the Directorate of Water Development (DWD) in the Ministry of Water, and Environment (MWE) developed and launched a Water Sector Gender Mainstreaming Strategy to operationalize the National Gender Policy. The strategy incorporates gender issues in all its activities for purposes of ensuring numerical participation of women and men in the array of activities that take place.

This Chapter highlights the progress on gender mainstreaming in the Water and Sanitation Sector for the financial year 2006/2007. The data has been obtained through:

- Field visits to 49 communities in 16 districts[71];
- Review of PAF monitoring report for financial year (FY) 2006/7; and
- Case Study report assessing the application of the Gender Mainstreaming Strategy, produced in financial year (FY) 2006/7[72].

In order to encourage and monitor meaningful participation of women at the community level, a gender indicator was developed, as defined in Box 13.1. Districts local Governments have been requested to use this indicator when reporting on progress in the FY 2007/8.

Box 13.1 Definition of water and sanitation sector gender indicator

"% of Water and Sanitation Committees/Water Boards in which at least one woman holds a key position". A key position refers to Chairperson, Vice Chairperson, Treasurer and Secretary. The indicator gauges women's participation in decision-making at the local level

13.2 RURAL WATER SUPPLIES AND SANITATION

13.2.1 *Gender mainstreaming in Water User Committees*

Of the Water User Committees (WUC) visited in 16 districts, 87% were found to have at least one woman holding a key position, the majority (30) being treasurers. It is commonly believed that women are more trustworthy than men when taking care of funds. The sector is also advocating for a 50% representation of women on WUCs. Case study data from 35 communities in 12 districts[73] shows a 44% level of compliance to this policy.

13.2.2 *Hand pump mechanics*

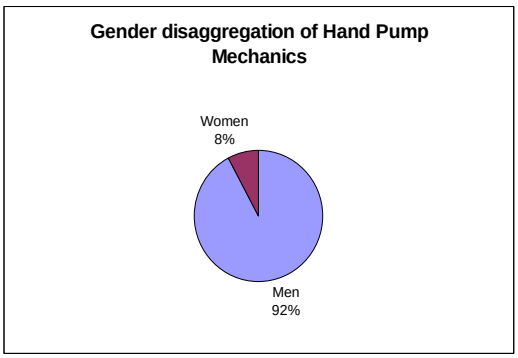
The majority (92.3%)*(*n=26*)* of the trained hand pump mechanics in the 12 case study districts[73] are men, as shown in Figure 13.1. The two female hand pump mechanics who the study team met were from Iganga district. According to the district officers, the few number of female hand pump mechanics is attributed to the technical nature of the job and the manual labour involved.

[71] Apac, Iganga, Mbale, Pader, Kasese, Lira, Kayunga, Mbarara, Soroti, Wakiso, Nakasongola, Butalejja, Lyantonde, Tororo, Jinja, and Ibanda.

[72] Water Resources and Environmental Consultants, 2007 *Report on assessment of gender mainstreaming policy implementation as a key aspect of management of rural water and sanitation.*

[73] Kayunga, Nakasongola, Wakiso, Kasese, Mbarara, Apac, Lira, Pader, Mbale, Iganga, Soroti, and Rukungiri,

Figure 13.1 Percentage of Hand Pump Mechanics by Sex (n =`26)



13.2.3 *Challenges to women participation at community level*

It is evident that women face challenges when engaging more actively in community water and sanitation activities. Focus Group Discussions with water users revealed that although women attend water and sanitation related meetings, many women are reluctant to assume some types of responsibilities, especially those that are illiterate. Some women expressed their concern that those who know how to write and read would undermine them should they be more active. Other women stated that in order to be a leader you must have a certain status in the community. Sometimes, elderly women undermine younger women if they are elected on Water User Committees.

13.2.4 *Gender mainstreaming in planning, budgeting, reporting and monitoring*

It is a requirement by MFPED that all national, sector and district policies, plans, programmes and budgets are gender mainstreamed. From 2007-08 this is explicitly required by MWE/DWD which has revised its planning and reporting, formats accordingly. Box 13.2 shows the views expressed by some government officials during a discussion about gender mainstreaming.

Box 13.2 Views expressed by sampled district officials on gender mainstreaming

The district is not yet fully gender-sensitive and it is not a priority of the district" (Lira District Official)
"There is lack of funds for training of lower levels" (Apac District Official)
"We have no activities that require gender analysis tools" (An Officer in Kayunga)
"We have no gender analysis tools in the district" (Nakasongola District Official)
"There is no specific budget line for gender related activities" (District Official Kasese)

A desk review of a sample of 11 annual and quarterly work plans from districts for the FY 2006/7[74] revealed that there were very few gender related activities included in the work plans. For instance, none of the districts planned for gender awareness and education activities. In addition, no gender related statement exists in the narrative of the work plans. The limited commitment to mainstream gender in the water sector activities at local government (LG) level is a concern for the sector and its importance needs to be revisited time and again.

Most districts reported that the monitoring system in use is the tracking of WUC composition by sex and number. The monitoring is performed on a quarterly basis by extension staff, such as Community Development Assistants (CDA) and Health Assistants (HA) and is,

[74] Reference is made to work plans from Wakiso, Iganga, Pader, Soroti, Kasese, Kayunga, Mbale, Mbarara, Apac, Lira and Nakasongola).

reportedly, affected by the inadequacy of government extension staff to thoroughly monitor activities and process/analyse data at community level.

13.3 URBAN WATER SUPPLIES AND SANITATION SECTOR

13.3.1 *Small towns*

Water Authorities are mandated by the performance contracts to constitute a **Water Supply and Sewerage Board (WSSB)** for purposes of supervising the management and operations of small water supply systems. The boards have a composition of five members including the Town Clerk, Chairperson, and three other members drawn from the various categories of water users (institutional, industrial and household users).

For purposes of ensuring meaningful involvement of women, the sector requires all WSSBs to have women representation. In addition, the WSSB should have at least one woman appointed to a key position of the board. To date, there are 63 towns with active WSSB and a total of 315 members. Data from 49 towns shows that the number of women holding key positions on the respective WSSB is 10, representing 18% compliance.

The sub-sector has two regional **umbrella organizations** (Eastern and South Western) to support small towns and rural growth centres in operation and maintenance. The Umbrella Organisation comprising a General Assembly (of elected WSSB members) and an Executive Committee. Of the 12 Eastern Umbrella Organisation executive committee members, one is female and holds the position of Vice Chairperson. In the Western Umbrella Organisation executive committee, two out of nine members are women, both holding key positions namely those of Vice Chairperson and Treasurer.

Private Operators. Currently there are 57 towns with piped water systems managed by private operators. 11[75] (19%) of these towns are managed by female managers. George and Company is the private operator with the largest number of female managers (5), managing the towns of Kisoro, Pallisa, Ibanda, Kabwohe and Kyenjojo.

13.3.2 *Large Towns/National Water and Sewerage*

The National Water and Sewerage Corporation (NWSC) gives due credence to gender issues when recruiting staff. Table 13.1 summarizes the gender balance within the NWSC as at 30th June 2007. 22% of the staff is female. In some areas the female staff ratio is as high as 34%.

Table 13.1 Staff at NWSC – sex disaggregated - June 2007

Area	Perm-nent Staff	Contract Staff	Male	Female	Ratio Female /Total	Total 03/2007	Total 06/2006
Headquarters	42	157	131	68	34%	199	186
Kampala/Mukono	58	566	489	135	22%	624	440
Jinja/Njeru	10	70	69	11	14%	80	79
Entebbe	13	45	38	20	34%	58	46
Tororo/Malaba	6	26	28	4	13%	32	21
Mbale	14	36	41	9	18%	50	47
Masaka	10	30	35	5	13%	40	39
Mbarara	25	32	49	8	14%	57	37
Lira	15	9	22	2	8%	24	25

[75] Kisoro, Pallisa, Ibanda, Kabwohe and Kyenjojo (George and Company), Lukaya and Lyantonde (Bright Techinical Services), Kiboga and Kaliro (Bika Techinical Services), Moyo (Able Holdings LTD)

Area	Perm-nent Staff	Contract Staff	Male	Female	Ratio Female /Total	Total 03/2007	Total 06/2006
Gulu	4	22	22	4	15%	26	26
Kasese	2	18	18	2	10%	20	15
Fort Portal	1	18	16	3	16%	19	20
Kabale	0	23	18	5	22%	23	21
Arua	2	22	19	5	21%	24	23
Bushenyi/ Ishaka	3	17	15	5	25%	20	19
Soroti	2	18	15	5	25%	20	23
Hoima	1	12	11	2	15%	13	-
Masindi	1	12	10	3	23%	13	-
Mubende	2	10	9	3	25%	12	-
Total	**211**	**1,143**	**1,055**	**299**	**22%**	**1,354**	**1,067**

The current NWSC Board has a 30% frmanle membership. The three women are in the positions of the deputy Vice Chair, head of the Administration Committee and an ex-officio member from Kampala City Council. At the Top Management level, 2 out of 6 are female. Furthermore, about 30% of NWSC managers in the areas and zones are women.

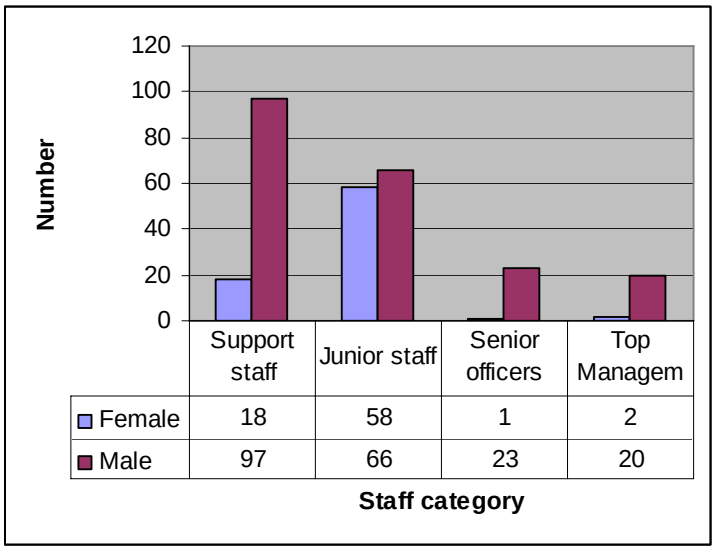
13.4 GENDER IN STAFFING

The Water Sector Gender Strategy promotes affirmative action in recruitment of staff, requiring that at least 30 percent of staff are women.

13.4.1 *DWD*

A review of the gender distribution of DWD staff (Figure 13.2) shows gender balance in the category of junior staff where 47 % (66) of staff are women. The major challenge to gender staffing is the limited representation of women at the senior management, 4% (1 out of 23) and top management level 10 % (2 out of 20) positions.

Figure 13.2 DWD Staff Disaggregated by Gender



13.4.2 *Districts*

An enquiry into gender disaggregation of water office staff in 12 districts shows that only three districts, (Kayunga, Wakiso and Apac) comply with the Water Sector Gender Strategy requirement of having atleast 30% female staff composition (Table 13.2). The enquiry further established that, majority of women hold secretary positions, while the decision-making management positions are predominantly held by men.

Table 13.2 District staff- sex disaggregated

Name of District	Staff at District Water Offices		Total	% of female
	Female	Male		
Kayunga	3	3	6	50
Nakasongola	1	5	6	17
Wakiso	2	3	5	40
Iganga	2	6	8	25
Kasese	2	7	9	22
Mbarara	2	6	8	25
Apac	3	7	10	30
Lira	1	5	6	16
Pader	-	6	6	0
Mbale	1	4	5	20
Kabale	2	5	7	28
Soroti	1	5	6	17

13.5 NGOs

NGOs/CBOs continued to mainstream gender in water and sanitation activities including the sensitisation of men and women on gender concerns in the management of the water and sanitation activities. NGOs are actively promoting government legislation as defined in the 5 year operational plan on ensuring that at least 50% of the members of the committee are women (UWASNET, 2007).

NGOs trained women in constructing rainwater harvesting tanks in Nakasongola, Mukono, Tororo, Kisoro, Rukungiri and Kabale. Over 500 women were reported to have been trained. Women trained in Kabale, Kisoro and Mukono are reported to be undertaking contracts to construct rainwater harvesting jars and ferro cement tanks (UWASNET, 2007).

CHAPTER 14
Conclusions & Recommendations

"At the start of the 21st century the world has the opportunity to unleash another leap forward in human development within a generation, the global crisis in water and sanitation could be consigned to history". (UNDP, 2006)

Children happily fetching safe water from a borehole in Karamoja (Kotido District)

In preparing the 2007 Sector Performance Report, each sub-sector developed specific recommendations in order to improve performance however, this year, rather than presenting such detail in the report, it has been decided that this year only the key conclusions and recommendations will be presented.

This Chapter provides a summary of the major recommendations for the Water and Sanitation Sector in Uganda.

Sector Institutional framework: A new structure for the Ministry of Water & Environment was approved in July 2007. Though implementation of the new structure has started, formal filling of the vacant posts by the Public Service Commission is yet to be done. Most of the staff is in "Acting" capacity. The situation is especially critical in the Directorate of Water Resources and in the Water Authorities Division of DWD. The situation is not much different in some local governments with respect to availability of sector staff for the District Water Offices (as stated in chapter 5 - PAF monitoring). Availability of adequate and skilled human resources for planning and implementation is vital for achievement of agreed sector targets, moreover in an efficient and cost effective manner.

Recommendation(s): *There is therefore need to expedite the formal process of filling up the vacant posts under the new structure of the Ministry of Water & Environment. This has to be closely followed up with the Ministry of Public Service. The Ministry should also urge the concerned district authorities to expedite recruitment of the necessary qualified staff for the District Water Offices, in cases where posts are still vacant.*

Sub-Sector Budget Allocations: About 45 district local governments have water coverage below the national average of 63%. Of these, about 10 districts have water coverage below 40%. Moreover, about 5% of the sub-counties have remained with coverage below 20% over the previous 2-year period. Addressing this disparity in service provision requires a combination of different measures including fine tuning/ review of the district grant allocation criteria used at the centre and at district level.

The water resources sub-sector reform study estimated the financial requirements for implementation of water resources activities over a 10-year period at US$ 60.71 million. This translates to a funding requirement of UGX 10 billion per year. Currently, the sub sector gets an average of UGX 6.5billion per year, which is only 7% of the total sector budget.

Recommendation(s):

- *The total grant allocation to the districts for rural water supply should be increased further, as this is the only way that will enable the sector target of 77% coverage by 2015 to be achieved (the majority of the population is in the rural areas).*
- *The grant allocation formula should be reviewed with the overall aim of uplifting all the underserved district local governments up to the national coverage figure within five years as directed by MoFPED.*
- *The on-going water resources mapping (especially ground water potential) should be prioritized and expedited so that districts are guided in the most appropriate choice of technology for rural water supply.*
- *The allocation criteria for funds within the sector should be reviewed to enable increased resource allocation to DWRM in line with its new mandate.*

Increasing per Capita Cost for RWS: The unit costs of service provision under the rural sub-sector increased further during the reporting year (section 3.6.1 – 3.6.2). This is largely attributed to use of more expensive technologies (tending more to boreholes) and inadequate data capture of population by piped schemes for rural growth centres because of the phased construction usually spreading over 2-3 years. The MWE has introduced new more comprehensive reporting formats for districts to be used with effect from 2007/08.

There has also been increased expenditure on administrative overheads caused by investment in transport, office infrastructure and equipment in the new districts (23 districts were created during 2006/07). During 2005/06, about 76% of the grant was invested in new

facilities for provision of water services (SPR 2006). During 2006/07, the portion of the grant invested in new water service installations reduced to 70%.

Recommendation(s):

- *Given the present human resource constraints that the sector is facing both at the central and district local government levels, it is recommended that the sector identifies and focuses attention and support to some critical areas that affect the service delivery efficiency. For example, in this report, it has been stated that about 34% of the grant was invested in borehole drilling activities. This is an area that should be further studied and the necessary measures instituted if there is to be any realization in cost reduction. More such areas will be identified from the cost analysis study that is being carried out by the MWE.*
- *The sector should also support the districts in the use of new reporting formats to ensure capture of all the necessary data for piped water schemes to enable more accurate coverage estimation.*

Sector Regulation (Urban): In this report, data has been analysed for 149 small towns. However, the flow and availability of data or information from the small towns supported by the South-Western Umbrella organization is very scanty.

Recommendation(s): *Improve and strengthen the Urban Water Authorities Division (UWAD) of MWE/DWD to effectively regulate the provision of water and sanitation services in all the small towns in the country. The Division needs adequate staffing and other resources to function effectively.*

Water Resources Management: The Directorate of Water Resources Management has responsibility for monitoring, assessment and regulation of water resources through issuance of water use, abstraction and waste discharge permits among others. Enforcement of the permits issued is unsatisfactory and the overall performance of the sub-sector has declined over the years. This has been attributed to in-adequate funding (under the sector budget) and in-adequate staffing. Some of the analytical equipment procured ten years ago under the Water Resources Assessment Project (WRAP) for the laboratory in Entebbe has broken down and needs replacement. To implement the IWRM, specific funding is needed for districts within the IWRM pilot catchment area.

Recommendation(s):

- *Ensure availability of adequate staffing for the DWRM by filling up all the vacant posts as soon as possible and allocate to the sub-sector adequate resources for implementation of its mandate.*
- *The analytical capability of the laboratory should be up-graded to be able to analyze parameters with health implications in water like algal toxins, organics and toxic metals.*
- *Explore the possibility of establishment of a budget line (under the sector conditional grant) for implementation of decentralized IWRM activities.*

Water for Production: Data from three of the six districts covered in the baseline survey shows that 83% of the facilities used for livestock were also used for domestic purposes. The lack of option of other improved water sources forces the rural population to use untreated water from the water for production facilities for domestic purposes. In addition, 55% of all facilities in the districts covered by the baseline survey were not fully operational due to siltation.

Recommendation(s):

- *Assess the possibility of up-grading existing facilities with mechanisms that improves the quality of water used for domestic purposes. This should be given priority under the new programme of developing facilities for multipurpose use.*
- *Assess the potential increase in storage capacity, the estimated cost of rehabilitation for Water for Production facilities that are not fully operational. If cost-effective, prioritize the rehabilitation within the available resources.*

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Annex 1-1 Information Sources for the Sector Performance Report 2007

Issued by	Document/Database	Latest year of Issue	Useful Data for SPR	Utilised in SPR 2007
UBOS	Uganda Population and Housing Census (UPHC)	2002	Population Figures	✓
UBOS	Uganda National Household Survey (UNHS)	2005/6	Source of drinking water, distance to source	✓
UBOS	Uganda Demographic and Health Survey (UDHS)	2006	Access, collection time, collection burden and water treatment	✓
UBOS	Uganda National Service Delivery Survey (UNSDS)	2006	Access, collection time	✓
UBOS	State of Uganda Population Report	2007	Not used for 2007 SPR	
MoH	Ministry of Health Annual Health Inspectors Annual Sanitation Survey (HIASS)	2006	Sanitation	✓
MFPED	Uganda Participatory Poverty Assessment Process (UPAP)		Not used for 2007 SPR	
MWE	Water and Sanitation Sector Financial Tracking Study	2004/5		
MWE	Ministry of Water and Environment PAF Monitoring Report	2007	Human resources, functionality, investment, community management	✓
District Local Governments	District Water and Sanitation Annual Situational Analysis reports	2007	Access, functionality, investment, equity	✓
MWE	Rural sub-sector Mini Performance Report	2007	Access, functionality, investment, equity	✓
MWE	Urban sub-sector Mini Performance Report	2007	Access, functionality, investment, equity	✓
MWE	Water for Production sub-sector Mini Performance Report	2007	Water for production	✓
MWE	Water Resources sub-sector Mini Performance Report	2007	Water resources and water quality	✓
MWE	Cross-cutting issues report	2007	Gender	✓
MWE	DWD-MIS Database and NWSC-MIS Database	2007	Access	✓
UNDP	Human Development Report 2006. Beyond Scarcity: Power, poverty and the global water crisis	2006	Impact, investment	✓

Annex 2-1 Status of District Water and Sanitation Committees in all districts

Name of TSU	Names of Districts	Committee in Place	Date Established	No of Meetings	Minutes Available
TSU 8	Mbarara	√	dec-04	4	√
	Kabale	√	aug-04	10	√
	Ntungamo	√	nov-04	10	√
	Isingiro	√	jun-07	2	x
	Kiruhura	×	N/A	0	√
	Ibanda	√	mar-06	2	√
	Kanungu	√	jul-04	7	√
	Bushenyi	×	N/A	4	√
	Rukungiri	√	aug-04	7	√
	Kisoro	√	sep-04	6	√
TSU 7	Rakai	√	2005/2006	4	√
	Lyantonde	√	2006	2	√
	Masaka	√	dec-06	0	×
	Kalangala	×	N/A	0	×
	Sembabule	×	N/A	0	×
TSU 6	Mityana	×	N/A	0	×
	Mubende	√	2005/2006	1	×
	Kibaale	√	2005/2006	4	×
	Kyenjojo	√	2005/2006	4	×
	Kabarole	√	okt-06	1	×
	Bundibugyo	√	2002/2003	0	×
	Kasese	√	N/A	4	×
	Kamwenge	√	aug-07	0	×
TSU 5	Masindi	√	2005/2006	0	×
	Mpigi	√	2005/2006	4	×
	Luweero	√	sep-07	1	×
	Kiboga	×	mar-06	1	×
	Hoima	√	N/A	0	×
	Nakaseke	×	N/A	0	×
	Mukono	×	N/A	0	×
	Kayunga	√	jun-06	1	×
	Nakasongola	√	2005/2006	1	×
	Wakiso	√	N/A	0	×
	Bulisa	×	N/A	0	×

Annex 2-1 Status of District Water and Sanitation Committees in all districts (Continued)

Name of TSU	Names of Districts	Committee in Place	Date Established	No of Meetings	Minutes Available
TSU 4	Mbale	√	2005/2006	1	×
	Kapchorwa	×	N/A	0	×
	Pallisa	×	N/A	0	×
	Kaliro	√	2005/2006	3	×
	Mayuge	×	N/A	0	×
	Iganga	√	jun-05	4	×
	Kamuli	√	sep-05	4	×
	Bukwo	√	2005/2006	1	×
	Butaleja	√	2005/2006	3	×
	Namutumba	×	N/A	0	×
	Budaka	√	2005/2006	1	×
	Busia	√	2005/2006	3	×
	Manafa	√	2005/2006	3	×
	Sironko	×	N/A	0	×
	Tororo	√	jul-05	1	×
	Bugiri	×	N/A	0	×
	Bududa	√	2005/2006	1	×
	Jinja	√	2005/2006	3	×
TSU 3	Amuria	√	2006/2007	4	√
	Abim	√	jun-06	4	√
	Nakapiripirit	×	N/A	0	×
	Kabong	×	N/A	0	×
	Moroto	×	N/A	0	×
	Kotido	×	N/A	0	×
	Kaberamaido	×	N/A	0	×
	Bukedea	×	N/A	0	×
	Kumi	×	N/A	0	×
	Soroti	×	N/A	0	×
	Katakwi	√	2005/2006	4	√
TSU 1	Koboko	√	N/A	1	√
	Yumbe	√	2004/2005	2	√
	Arua	√	2003/2004	0	√
	Moyo	√	2003/2004	0	x
	Nebbi	√	2004/2005	2	√
	Adjumani	√	2004/2006	2	√
	Maracha&Terego	×	N/A		x

Annex 2-2 Progress on recommendations from the 2006 SPR

NO	RECOMMENDATION	PROGRESS
Sanitaton/1	It is essential that adequate funding for the sanitation sub-sector is ensured through the allocation of funds within the three ministries (Health, Water and Environment and Education and sports). It is recommended that further guidelines are prepared for districts regarding Sanitation and Hygiene. These should include information regarding ongoing support for sustaining behavior change.	*Taken up as an undertaking and reported on in Chapter 2*
Sanitation/2	Efforts aiming at improving hygiene and sanitation through the DWSCCG only are not enough and thus need to be increased. There is need for increased involvement of the private commercial sector and building a market for products such as soap and plastic latrines. There is also need to build capacity of NGOs and CBOs to change peoples hygiene and sanitation behaviours.	- It is estimated that over 60% of the DWSCCs are active. Further support is planned in strengthening the DWSCCs. The sanitation week has been used as an opportunity to increase coordination especially at local government level. USAID/Hygiene Improvement Programme (HIP) has started, and it is expected to enhance capacity in behaviour change/hygiene - Several other sanitation promotion events have taken place as set out in Chapter 8.
Sanitation/3	Gender and special needs considerations for girls and disabled children should be made compulsory in schools and be included for supervision by the inspectorate of schools.	This has not yet been done, but especially UNICEF continues to advocate for this. Under the JWSSPS 2008-2012 further emphasis will be put in this field.
RWSS/1	There have been joint NGO-Government collaborative efforts to pilot appropriate technologies. It is therefore recommended that collaboration between Government and NGOs continues, in the form of joint planning and problem solving as well as with innovations.	- Implementation of a Domestic roofwater harvesting (DRWH) is ongoing in 2 subcounties of Rubaya and Muko in Kabale district; over 345 DRWH systems constructed at household level. Funding from DWD with Kigezi Diocese Water Dept as implementing NGO. - A joint launch of a Rain Centre was done between DWD and Kigezi Diocese in Kabale in June 2007. The Rain Centre is used for training artisans and other stakeholders in DRWH, and documentation of experiences in DRWH.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
RWSS/2	There is need for sustained efforts to ensure that the functionality of rural water supplies does not go down. More human resources at DWD/MWE should be devoted to O&M issues. There is need to undertake a short term in-depth study on functionality of rural water supply sources, to identify a few sustainability factors. Central government needs to devote more resources to popularizing the established spare parts outlets in the districts. Improving O&M and functionality is partly an attitude change problem that needs continuous sensitization and mobilization.	- There has been significant follow-up on the established hand pump spares supply chain initiative. 37 out of the planned 60 outlets were opened up throughout the country under four business units. This initiative has popularised availability of spare parts in some districts. Bugiri district used local spare parts dealers in rehabilitation of boreholes. This approach was found to be successful and will be replicated in other districts. - The short term in-depth study is planned to start in January 2008.
RWSS/3	There is need to involve the communities and districts in planning, construction and post construction activities to ensure proper monitoring of the constructed facilities. The water user committees need to be regularly followed up to ensure their vigilance and land management practices in the catchment areas need to be addressed. The district local governments need to carry out frequent and effective monitoring and evaluation of the facilities.	- Bottom-Up planning is practiced in districts during rural water source development; communities apply for the facilities at sub-county level and then allocations done depending on available resource envelope. - Follow up monitoring of constructed facilities however still needs more effort and support from the centre. - Support being provided by TSUs for community mobilisation activities
RWSS/4	In order to reduce per capita costs, the following is recommended; - Expedite groundwater mapping by DWD/MWE. Districts with low water potential should be prioritized in mapping exercise. This should improve the success rates of boreholes and shallow wells, and promote shallow well construction in areas where it is not yet practiced. - Encourage procurement of larger drilling contracts involving a cluster of districts to exploit economies of scale. - The promotion of domestic roof water harvesting for households with hard roofs should be accelerated. - The potential for alternative low cost water supply options such as house hold water treatment or infiltration galleries should be studied.	- Groundwater maps developed for six Districts of Arua, Nebbi, Adjumani, Moyo, Yumbe and Koboko. Mapping ongoing in another 16 Districts in Eastern and Western Uganda. See Chapter 4 for details. Mapping being done by DWRM with Danida support for all Districts. - Procurement of large drilling contracts not yet done. All Grants are still fully decentralised. - There are two ongoing DRWH pilots in Kabale and Masaka districts where more lessons on delivery mechanisms and scaling up have been learnt (also, see progress on Recommendation RWSS/1 above). - A draft concept note on acceleration of DRWH is under discussion. - MSc thesis written on household water treatment in Bundibugyo District with clear recommendations on the appropriate treatment systems for rural areas in Uganda - A national rainwater centre being completed in Mukono.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
RWSS/5	Districts should be taking equity into consideration to a greater extent when allocating resources for rural water supplies. The equity indicator needs to be demystified to district personnel and supporting guidelines should be produced. In order to improve the equitable distribution of water sources between sub counties, districts must be encouraged to improve data collection and management and set their own targets.	- Explanation of equity indicator included in the District Implementation Manual (DIM) which will be used for training local Government staff in planning, implementation and reporting of Watsan projects. - More follow up support still required.
RWSS/6	There is a need to reconcile the differences in the approaches used to estimate access to improved water supplies. There is also need to reassess the method used and consider more realistic walking distances and functionality.	*Taken up as an undertaking and reported on in Chapter 2*
WfP/1	In order to improve the functionality of rural water sources intended for domestic purposes there is need to plan for separate facilities for livestock in the cattle corridor.	N.B. Part of Recommendation WfP/1 is closely linked to Recommendation WfP/4 and is reported under that section. The provision of water for livestock is focused on water stressed areas of the cattle corridor. The facilities constructed for Water for Production purposes are designed to include pumping systems to deliver water into cattle troughs for the benefit of livestock watering. Recent up-grading of the standard designs include a provision for stand pipes in order to specifically cater for domestic water supply.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
WfP/2	Establish a comprehensive database of all existing water facilities. This should include water facilities constructed by all actors investing in water for production.	The WfP sub-sector is improving information management within the department by (i) undertaking a comprehensive inventory of existing WfP facilities and their operational status and (ii) developing an operational database that will enable the Department to properly store, process, analyse, use and disseminate its core information. The key achievements with respect to establishment of the database/collection of data during the financial year 2006/7 include: - Database structure established - Data up-date strategy developed - Consultancy for programming of database on-going - Interim database in excel designed and operational - Pilot baseline survey covering 6 Districts carried out - Data collected in the pilot baseline survey has been analysed and used for preparation of the Sector Performance Report 2007 - Maps presenting the geographical distribution of WfP facilities produced for all 6 pilot Districts - Strategy, time plan and budget for roll-out of a nationwide baseline survey prepared
WfP/3	It was recommended that the investment into the water for production sub-sector should be increased. In addition farmers should be supported to improve their own water for production facilities (through loans, subsidies of equipment, technical advice).	For the financial year 2006/2007 the water for production budget was increased by 87% (from USh 2.8 billion to USh 5.2 billion). The budget for the FY 2007/8 has been further increased to USh 14.8 billion. The WfP sub-sector has planned to supply equipment for construction and maintenance of dams and valley tanks in one water stressed district and it will be managed through a Private-Public Partnership. It is envisaged that this will greatly reduce the construction unit costs and significantly increase water coverage. More importantly, it will promote the investment by farmers directly. Bids for procurement of the equipment have been received and evaluation is on-going. This initiative is envisaged to assist private stakeholders and communities to improve their WfP facilities. *Partly taken up as an undertaking and reported on in Chapter 2*

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
WfP/4	While there had been great improvement in training and sensitizing communities on their roles and responsibilities regarding water for production facilities, water user committees need to be strengthened and the beneficiary communities encouraged to own and appreciate the facilities. Vandalism, lack of community contributions, inefficient pumps and pump breakdown in the dry season are the major issues that need to be addressed immediately. There is a need to provide follow up support from districts, central government and NGO/Private sector as measure to strengthen community management of WfP facilities.	- In regards to the need of strengthening community management of water for production facilities, a number of measures have been undertaken during the FY 2006/7, 1) ToRs for TSUs have been expanded to include provision of support to Water for Production activities at district level 2) a stakeholders' mobilization work shop under the National Livestock Productivity Improvement Project was organized with the objective of strengthening district stakeholders to support management of WfP facilities, 3) continued follow up support by the sub-sector through regular training of WfP stakeholders and 4) the sub-sector organises regular O&M workshops at districts and community levels where this issue is covered. - The sub-sector has developed a strategy of demand-responsive approaches to improve the sense of ownership and appreciation of facilities by beneficiaries, whereby Districts are involved in all phases of the construction of new WfP facilities. - An assessment of the performance of existing pumps for transferring water from valley tanks to cattle watering troughs has been carried out and specific recommendations have been made. Further investigations were carried out to review and establish sustainability of designs and energy options (Solar, wind, water, Biomass, geothermal, National/Localised electricity Grid, Fossil fuels) for pumping water from WfP facilities for domestic use. - Training of mechanics in routine maintenance and repair of the abstraction system which are prone to intermittent breakdown is being carried out.
WfP/5	A comprehensive study is required to determine a viable management model for water for production facilities.	The WfP sub-sector is procuring a consultant to undertake a comprehensive study to determine a viable management model for Water for Production facilities. Parallel assessments are being undertaken under the on-going design consultancy contracts and these will be harmonised under the proposed study.
WRM/1	Given the high demands on water resources in Uganda, and conflicting uses (hydro power, domestic and productive water supply and the natural environment) there is a major need to prepare an integrated water resources management plan for the country.	*Taken up as an undertaking and reported on in Chapter 2*

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
WRM/2	The scarcity of water quality data on rural drinking water sources resulting from lack of systematic monitoring of water supplies needs to be addressed urgently in order to be able to make general assessment of the state of drinking water sources countrywide. It is recommended that the implementation of the water quality management strategy by all stakeholders commences without delay.	Implementation of the recommendations given in the National Water Quality Management Strategy has started with awareness raising workshops and development of a Water Safety Plan for Kyejonjo water supply. Biological indicators are being developed by the Water Quality Management Department in collaboration with Makerere university zoology department, National Fisheries Research Institute and the Vector Control Unit - MoH, with the aim that the local community in the future can conduct simple water quality monitoring using biological indices and that the method will be used to complement the water quality monitoring by the department which is currently based on chemistry.
WRM/3	An in-depth study on groundwater quality based on stable chemical parameters is recommended for the whole country to get a complete picture of the status of drinking water and guide the development of groundwater sources.	As part of the on-going Groundwater mapping project groundwater quality maps include concentration of individual natural chemical constituents. These are interim national guidelines for untreated water. Three quality categories are defined namely; potable water; water of acceptable quality but above Guideline Value; and water above the Maximum Acceptable Concentration. Also Hydrochemical Characteristics Maps are being developed. This depicts the spatial distribution of various specific hydrochemical parameters[1] that have influence on the portability of groundwater. (See Chapter 9.)
WRM/4	It is recommended that low cost technologies for treatment of poor water quality are promoted.	Removal of iron from borehole water is being piloted in several districts under the RWSS sub-sector.
WRM/5	Technical support is required from DWD for water quality monitoring in IDP camps in terms of provision of testing kits, consumables, training and quarterly checks.	No technical support was given in the recommended areas due to lack of funds.

[1] Fluoride, Sulphate, Chloride, Total Dissolved Solids, Total Iron and Hardness.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
WRM/6	In order to enforce water resources regulations effectively it is recommended that political support should be enlisted.	Regulation awareness workshops were held in four different regions of Uganda, namely Western, Northern, Central, North Eastern involving participants from 29 districts[2]. A lot of support was realized from district Political Leaders during these workshops. They recommended that leaders must champion enforcement of relevant laws.
WRM/7	The permit conditions need to be enforced. Given the growing demand for power in Uganda it is of utmost importance to conclude the ongoing Nile Basin Cooperation Framework negotiations.	A meeting for all the Presidents in the Nile Basin countries is scheduled to take place in Uganda sometime in 2007 to conclude the negotiations for the Nile basin Cooperative Framework. More emphasis and resources need to be placed on regulation in the future.
WRM/8	The recommendation by the sub sector reform strategy for uplifting the profile of the department to a directorate level should be pursued.	Under the newly approved structure for the Ministry of Water and Environment in 2006, the department was upgraded to a Directorate of Water Resources Management (DWRM) effective from 1st July 2007. DWRM consists of 3 departments namely Department of Water Resources Monitoring and Assessments, Department of Water Resources Regulation and Department of Water Quality Management. However, vacant posts in the new structure should be filled without delay.

[2] Lira, Gulu, Amuru, Pader, Apac, Kitgum, Oyam, Bugiri, Busia, Mayuge, Jinja, Mikono, Mubende, Mityana, Wakiso, Mpigi, Kabale, Kanungu, Rukungiri, Kisoro, Ntungamo, Sembabule, Rakai, Kalangara, Mbarara, Ibanda, isingiro, kiruhura, and Masaka

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
WRM/9	A water balance for water resources should be carried out urgently. This will help in water allocation for different uses and helping carrying out assessments of the impact of major ground water and surface water abstractions. -	- There is inadequate data to make a complete and accurate water balance of Uganda. However, the Water Resources Management Reform study (2005) estimated Uganda's total renewable water resources to be 66 km^3/year. This is equivalent to about 3000m^3 per capita per year. Although this paints the picture that the overall water resources situation in Uganda is favourable, already water scarcity is experienced in several parts of the country (e.g. districts in the cattle corridor) due to high population pressures, changes in climatic conditions and uneven distribution of rainfall. - During the Lake Victoria Environmental Management Project (LVEMP) phase I, the net basin flow for Lake Victoria was computed to be 33 m^3/s using hydrological records for 50 years (1950-2000). This translated to a net increase of 0.98m in water level over that period. Currently a model id being used to estimate water balances for Rwizi catchment (pilot catchment for IWRM) and Mitano, Waki II, Muzizi, Mpanga, Chambura and Wambabya catchments, all in the Albert Water Management Zone. The model will later be used to allocate water among different uses in the Rwizi pilot catchment and to estimate pollution loading into the catchment from various sources.
WRM/10	All Gravity Flow Schemes and large water supply schemes should be preceded by EIA studies and feasibility studies must include proper water resources assessments. This will avoid reduction in yield and drying up of gravity flow schemes.	Currently water supply projects are rarely undertaking EIAs before construction of big water supplies. DWRM is in the process of developing a Water Sector guideline for assessment of water supply related projects.
WRM/11	It is recommended to give priority to carry out the undertaking on water resources regulation and complete the inventory of potential wastewater dischargers who require permits under the present law.	Water Resources Regulation awareness workshops were held in five different regions of the country to sensitize the public about the importance of water resources regulation and urge polluters to apply for permits. DWRM has established that 2981 firms need water permits for abstraction, wastewater discharge and drilling / construction. The total number of permits issued so far is 254. This represents only 8.5% of the potential firms that require permits. More emphasis and resources are required to improve Water Resources Regulation.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
UWSS/1	More effort should be made in obtaining data for coverage for all the 180 small towns as well as for indicators of functionality and investment costs so as to improve on the indicator measurement.	- For the FY 2006/7 data is presented for 149 towns. In last years SPR, the total number of small towns was estimated to 180 and assumptions were made for the towns with data limitations. - A database for urban water supply has been developed. In the course of the FY 2007/8, the database is envisaged to be expanded, linked to the business plan model and deployed also at town level to facilitate reporting, data transfer and hence also monitoring.
UWSS/2	Due to power shortages being experienced, the use of the available storage capacities within the towns (small towns) should be increased to raise the availability of water as well as reduce operating costs that may be incurred by thermal power generation.	Due to lack of funds no additional investments have been made in this direction, however, it is still considered as a priority area.
UWSS/3	The water authorities division currently emphasizes support to the Water Authorities, which has overshadowed its regulatory role. There is an urgent need to increase the acutely understaffed division and increase the regulatory work that is required, including more analysis of data.	Various activities supported by GTZ and IFC are being undertaken to support the regulatory function as part of the overall sub-sector reform program. In addition, the scope of TSUs has been increased to include monitoring of small towns operations. However, more human resources are still required in Water Authorities.
UWSS/4	A tracking study and financial audit should be undertaken for the small towns in order to identify the areas of improvement in the flow of conditional grants to the towns and its usage. This should contribute to determining which towns should receive the conditional grant.	A management audit was carried out, initially on the three towns of Kisoro, Luwero and Wobulenzi. An additional ten towns were included during mid-August and September 2007. A summary of the issues are given in Annex 5-4.
UWSS/5	There is need for the small towns to focus resources on the unserved towns in Northern Uganda.	WSDF-North planned to be implemented under JWSSPS 2008-2012 to cater for piped water supplies for Small Towns/RGCs in the North.

Annex 2-2 Progress on recommendations from the 2006 SPR (Continued)

NO	RECOMMENDATION	PROGRESS
CROSS-CUTTING/1	There is need to sensitize both men and women against negative traditions that deny women from taking up leadership positions on WUC and WSSBs.	- Gender was incorporated in the District Implementation Manual (DIM) and the Community Resource Book (CRB), for purposes of developing the capacity of local governments towards ensuring that the socially constructed roles that limit women participation are overcome. - Through TSUs, two gender awareness workshops were held in Kasese and Arua, with an aim of building the capacity of Local Government towards encouraging equal participation of both men and women in the Water Sector.

Annex 3-1 Breakdown of sub-sector budgets, releases and expenditure

SN	Code	LEVEL - 1	LEVEL - 2	PROGRAMME	BUDGET			RELEASED			EXPENDITURE		
					GoU	Donor	Total	GoU	Donor	Total	GoU	Donor	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	13)	(14)
1	501-80	DWSCG	Rural Water	District Conditional Grant	40 660	-	40 660	40 502	-	40 502	36 620	-	36 620
2	0124	DWD - Rural	Rural Water	Energy for Rural Transformation	105	-	105	93	-	93	92	-	92
3	0158	DWD - Rural	Rural Water	School/Community Sanitation	1 400	-	1 400	1 335	-	1 335	1 332	-	1 332
4	0163	DWD - Rural	Rural Water	Support to Rural Water Supply	1 736	6 043	7 779	1 544	2 586	4 130	1 518	2 586	4 104
5	0142	DWD - Urban	Urban - Water	Mid Western Towns - EU	500	4 288	4 788	444	4 288	4 732	435	4 288	4 723
6	0148	DWD - Urban	Urban - Water	North Eastern Town-BADEA	1 434	2 338	3 772	1 419	4 375	5 794	1 408	4 375	5 782
7	0154	DWD - Urban	Urban - Water	Rural towns water-ADB	1 536	5 924	7 460	1 510	12 247	13 757	1 502	12 247	13 749
8	0160	DWD - Urban	Urban - Water	South Western Towns - Austria	360	1 949	2 309	312	2 104	2 416	310	2 104	2 413
9	0164	DWD - Urban	Urban - Water	Support to Small Towns - GoU	2 831	3 112	5 943	2 586	950	3 536	2 583	950	3 533
10	0168	DWD - Urban	Urban - Water	Urban Reform Project- GTZ/KfW	884	1 949	2 833	864	1 350	2 214	858	1 350	2 208
11	0426	NWSC	Urban - Water	NWSC	2 360	47 458	49 818	2 360	31 319	33 679	2 250	31 318	33 568
12	0169	DWD - WfP	Water for Production	Water for Production	5 241	1 306	6 547	5 209	53	5 262	5 204	53	5 257
13	0137	DWD - WRM	Water Resources	LVEMP	850	1 949	2 799	755	-	755	749	-	749
14	0143	DWD - WRM	Water Resources	Mitigation of L. Kyoga	250	-	250	222	-	222	207	-	207
15	0149	DWD - WRM	Water Resources	Operation Water Resources	330	-	330	294	-	294	275	-	275
16	0165	DWD - WRM	Water Resources	Support to WRMD	1 047	2 046	3 093	932	2 305	3 236	927	2 305	3 231
17	0151	DWD - Other	Other	Project Management Support	760	2 212	2 972	676	2 017	2 693	669	2 017	2 687
			Totals		62 284	80 574	142 858	61 056	63 594	124 650	56 936	63 593	120 529

Annex 3-2 Summary of sub-projects (construction of water sources) funded by NUSAF during the FY 2006/7

S/N	DISTRICT	NO. OF SUB-PROJECTS	NUSAF INVESTMENT
1	Adjumani	-	-
2	Apac	5	76,330,000
3	Arua	109	1,578,648,135
4	Gulu	27	420,518,800
5	Kaberamaido	-	-
6	Katakwi	-	-
7	Kitgum	-	-
8	Kotido	-	-
9	Kumi	35	599,494,513
10	Lira	12	177,660,417
11	Moroto	12	359,170,000
12	Moyo	-	-
13	Nakapiripirit	4	169,957,895
14	Nebbi	20	290,552,414
15	Pader	-	-
16	Pallisa	88	1,565,276,100
17	Soroti	76	1,093,396,219
18	Yumbe	-	-
	Total	**388**	**6,331,004,492**

Annex 3-3 List of UWASNET members and investments

	NGO	District	Total Investment (Ushs)
1	WEDA	Amuria	164 526 688
2	Kumi HRI	Kumi	-
3	PAG PDS	Kumi and Soroti	130 000 000
4	OYIDO	Amuria	16 675 000
5	Apac Town Com Ass.	Apac	2 874 000
6	RWIDE	Kyenjojo	51 870 000
7	CEI	Kamwenge	36 500 000
8	Jese	Kabarole, Kyenjojo, Kamwenge	115 181 366
9	FORUD	Kabarole	307 845 060
10	HEWASA	Kabarole, Kamwenge, Kyenjojo and Bund	1 101 494 887
11	Kamuli CDF	Kamuli	16 876 000
12	UEEF	Mukono	5 862 000
13	MUMYO	Mukono	1 720 000
14	Kyatume CBHC Program	Mukono	45 384 000
15	Katosi WDT	Mukono	24 429 000
16	Uplift Foundation	Mayuge	70 385 000
17	Kigulu Dev. Group	Iganga	3 358 000
18	Fairland Foundation	Jinja	3 280 000
19	Student Part Worldwd	Kamuli	1 260 196
20	Busoga Trust	Kamuli, Iganga, Luwero, Kaliro, Jinja	459 559 800
21	YODEO Arua Ltd	Arua	2 244 000
22	BIRUDEAS	Arua	900 000
23	CEFORD	Arua	114 141 805
24	ASED	Nebbi	3 000 000
25	Pakwach Dev. Forum	Nebbi	2 456 500
26	ALA Const. Services	Maracha - Terego	196 180 000
27	Needy Kids Uganda	Yumbe	62 350 000
28	KOYID	Koboko	
29	VAD	Wakiso	317 568 200
30	BUCADEF	Wakiso	250 000
31	Uganda RW Association	Kampala	4 120 000
32	Comm. Health Concern	Kampala	-
33	Kesenyi III Comm. HW Assoc.	Kampala	1 700 000
34	Kamwokya Com. HEPA	Kampala	-
35	Action for Slum HD	Kampala	19 800 000
36	Uganda Dom San serv	Kampala	54 950 000
37	Ankole Diocese	Mbarara	651 720 000
38	ACORD	Mbarara and Isingiro	68 479 200
39	RUGADA	Rukungiri	-
40	Hope for Orphans	Kanungu	1 204 000
41	Good Samar CDP	Kisoro	1 860 000
42	Gisorora Twubake Ass	Kisoro	-
43	NAYODEP	Tororo	12 200 000
44	UMURDA	Bugiri	26 630 000
45	CWAY Dev. Alliance	Mbale-Soronko	1 857 500
46	Uganda - Japan Assoc	Bugiri	82 684 800
47	Mubende RDA	Mubende	8 220 210
48	KARUDEC	Kasese	455 500 000
49	CEI	Kamwenge	-
50	CARITAS	Masaka, Rakai, Sembabule, Arua	111 096 000
51	NETWAS	Kampala	54 000 000
52	CIDI	Kampala	187 809 000
53	BUDO	Bukedea	33 154 000
54	SOCADIDO	Soroti, Kumi and Amuria	124 314 000
55	Pamo Volunteers	Kumi	44 950 000
56	N. Kigezi & Kinkizi Diocese	Rukungiri & Kanungu	53 818 200
57	WaterAid Headquarters	Country Office	2 675 560 000
58	Kyakulumbye Dev Foundation	Mpigi	41 650 000
59	AFRICARE	Ntungamo, Kabale, Kanungu, Rukungiri a	-
60	Plan International	Tororo, Kamuli, Kampala and Luwero	803 328 465
61	Kiggezi Diocese	Kabale	377 607 910
62	SNV	Rwenzori and West Nile Regions	460 000 000
63	Kaproron PHC	Kapchorwa	80 000 000
64	Grassland Foundation	Yumbe	26 310 000
65	Lurtheran World Federation	Amuria and Katakwi	
		TOTAL	**9 722 694 787**

Annex 3-4 List of WASH members and investments

WASH CLUSTER EMERGENCY RESPONSE TO HUMANITERIAN CRISIS IN N. UGANDA			
	MEMBER	**(US$)**	**(Ushs)**
66	ACF	1 930 201	3 281 341 700
67	ASB	187 787	319 237 900
68	AVSI	1 939 448	3 297 061 600
69	C&D	539 405	916 988 500
70	CESVI	479 786	815 636 200
71	Concern (Pader)	572 292	972 896 400
72	COOPI	1 054 955	1 793 423 500
73	CPAR	130 000	221 000 000
74	Food for the Hungry	419 422	713 017 400
75	GAA	400 000	680 000 000
76	Goal	608 000	1 033 600 000
77	IMC	110 417	187 708 900
78	IRC	1 247 274	2 120 365 800
79	MED AIR	1 117 557	1 899 846 900
80	MERCY CORPS	135 417	230 208 900
81	OXFAM	1 973 363	3 354 717 100
82	PSI	626 371	1 064 830 700
83	UWASNET	80 000	136 000 000
84	WVI	830 000	1 411 000 000
	TOTAL	**14 381 695**	**24 448 881 500**

Annex 3-5 DWSCG Expenditure for each District, '000 UGX (2006/7) - Arranged by expenditure categories (Excluding Urban O&M)

District Name	1. Stakeholder coordination	2. Office Equipment	3. General DWO Operations	4. Wages and Salaries	5. Urban O&M	6 Software	7. Sanitation hardware	8. Water Supply Hardware	9. Borehole Rehabilitation	10. Water Quality Surveilance	11. Supervision and monitoring	District Total
ADJUMANI	-	6930	16946	0	-	5670	0	166671	11470	3610	3350	214647
ARUA	-	85948	18275	27571	-	48521	0	439719	3770	1500	36030	661334
KOBOKO	-	40175	12926	0	-	5896	0	36168	0	0	2572	97737
MARACHA/TEREGO	-	111667	9890	0	-	37046	0	404902	39235	1400	23860	628000
MOYO	-	0	35524	0	-	20887	0	16497	294	5000	12609	90811
NEBBI	-	13372	2500	6484	-	87046	855	253127	4440	12744	30364	410932
YUMBE	-	0	27498	0	-	42057	0	387267	0	0	12153	468975
AMOLATAR	-	34420	1430	0	-	3232	7650	100755	0	0	3000	150487
AMURU	-	73400	32463	0	-	17860	0	125897	0	0	9292	258912
APAC	-	0	24514	0	-	61235	13199	551428	37034	1800	57888	747098
DOKOLO	-	81205	903	0	-	5878	0	15833	14166	0	3694	121679
GULU	-	11627	43180	0	-	9429	18325	175255	0	11601	11525	280942
KITGUM	-	86918	161963	4744	-	44980	19411	255319	44959	3000	44655	665949
LIRA	-	70751	22266	1921	-	23572	13160	262286	22536	0	38126	454618
OYAM	-	101381	10165	0	-	10582	17233	233608	28800	0	5724	407493
PADER	-	50637	69028	0	-	21620	42943	400635	0	1839	27800	614502
ABIM	-	70980	8586	0	-	24401	0	123349	17482	500	1920	247218
AMURIA	-	84800	9391	0	-	12741	17802	365212	0	0	19732	509678
BUKEDEA	-	15220	5379	0	-	12257	0	0	0	0	8389	41245
KAABONG	-	187000	8500	0	-	124028	9500	132292	19360	6050	35500	522230
KABERAMAIDO	-	0	14329	5596	-	17585	0	189337	0	2195	6200	235242
KATAKWI	-	0	21684	0	-	21385	0	155831	19348	500	4050	222798
KOTIDO	-	0	7398	0	-	15458	0	48633	0	0	8800	80289
KUMI	-	13484	33760	0	-	62725	0	413689	0	0	10811	534469
MOROTO	-	5000	40278	19080	-	15292	0	115110	42600	0	10138	247498
NAKAPIRIPIRIT	-	65711	9994	14362	-	10648	0	106661	3090	1780	2919	215165
SOROTI	-	10488	20911	35255	-	51818	3386	459472	0	1000	21533	603863
BUDAKA	-	86778	10168	0	-	25119	4566	211023	0	1996	4178	343828
BUDUDA	-	155914	17727	300	-	11720	10177	291847	2073	3691	8502	501951
BUGIRI	-	18934	23800	0	-	62272	0	564755	58535	4517	45689	778502
BUKWO	-	73860	6710	0	-	18796	0	70069	0	3179	6621	179235
BUSIA	-	1298	0	0	-	15413	4592	126390	15036	391	14853	177973
BUTALEJA	-	89781	10197	0	-	28279	0	413111	0	1427	19786	562581
IGANGA	-	19511	9082	13062	-	50137	12156	759990	39714	5000	72501	981153
JINJA	-	22030	21528	21608	-	50647	26030	190401	50297	2986	23861	409388
KALIRO	-	39134	9311	0	-	19023	11667	256235	18126	0	12976	366472
KAMULI	-	10840	10054	8985	-	48406	26174	584448	46842	1986	13548	751283

Annex 3-5 DWSCG Expenditure for each District, '000 UGX (2006/7) - Arranged by expenditure categories (Excluding Urban O&M) (Continued)

District Name	1. Stakeholder coordination	2. Office Equipment	3. General DWO Operations	4. Wages and Salaries	5. Urban O&M	6 Software	7. Sanitation hardware	8. Water Supply Hardware	9. Borehole Rehabilitation	10. Water Quality Surveilance	11. Supervision and monitoring	District Total
KAPCHORWA	-	0	8799	0	-	62983	6265	179767	0	3915	22204	283933
MANAFA	-	61774	20481	2640	-	13843	0	181963	7157	4051	8296	300205
MAYUGE	-	80750	10378	11948	-	19095	0	527370	47764	17935	35968	751208
MBALE	-	0	18774	0	-	10130	0	275454	8148	3605	37232	353343
NAMUTUMBA	-	4000	3476	0	-	18018	0	825	0	2250	5530	34099
PALLISA	-	10589	18192	0	-	40274	3409	591126	24489	5987	19370	713436
SIRONKO	-	500	11965	2913	-	27256	4120	269930	13753	2200	18147	350784
TORORO	-	73554	4000	0	-	26490	4366	424296	30154	4350	17705	584915
BULISA	-	0	0	0	-	0	0	0	0	0	0	0
HOIMA	-	83242	9003	0	-	40429	0	246455	29960	2000	15605	426694
KAYUNGA	-	954	8828	1470	-	20262	16935	318267	42961	1500	17562	428739
KIBOGA	-	543	6102	18093	-	23614	0	228517	0	0	19458	296327
LUWEERO	-	0	7200	0	-	32333	0	346279	30000	8500	21800	446112
MASINDI	-	13191	7480	0	-	18911	0	551014	0	0	33648	624244
MPIGI	-	0	9600	0	-	55542	16937	909365	28500	6426	20195	1046565
MUKONO	-	11268	26564	6937	-	6860	0	755231	48143	20339	61730	937072
NAKASEKE	-	26068	5311	0	-	22864	6150	225364	28636	2250	7470	324113
NAKASONGOLA	-	6177	9775	26664	-	9410	0	225903	0	1000	4300	283229
WAKISO	-	0	8500	0	-	50369	0	861815	15593	900	28841	966018
BUNDIBUGYO	-	0	22111	960	-	14260	0	257730	0	1000	8535	304596
KABAROLE	-	1000	14923	6986	-	33198	0	836916	0	1200	7200	901423
KAMWENGE	-	11700	17464	5926	-	36525	11576	480300	0	15000	47004	625495
KASESE	-	0	77609	0	-	30198	0	353957	0	400	28162	490326
KIBAALE	-	108391	10391	8963	-	32814	0	311098	0	0	3600	475257
KYENJOJO	-	91493	7958	0	-	34418	9963	753511	9335	11560	9002	927240
MITYANA	-	101300	6000	0	-	26580	0	124208	0	4000	44000	306088
MUBENDE	-	4600	11630	0	-	30429	0	409636	0	0	43736	500031
KABULA	-	34373	17000	0	-	20788	8760	126212	24036	0	1098	232267
KALANGALA	-	5000	15370	15636	-	24996	69000	175527	0	1200	14690	321419
MASAKA	-	0	17603	13759	-	48793	63582	622700	102735	13224	27070	909466
RAKAI	-	9567	36874	9518	-	44537	32228	556734	139158	3303	21575	853494
SEMBABULE	-	12809	1266	5729	-	17388	5500	615764	55000	0	58362	771818
BUSHENYI	-	0	16628	0	-	57498	0	836790	0	0	41969	952885
IBANDA	-	103550	10012	3443	-	25231	13243	208373	0	2620	31272	397744
ISINGIRO	-	64920	21228	0	-	23259	14476	344311	25472	2060	5505	501231
KABALE	-	8305	15809	22570	-	53585	0	620929	15689	5000	38546	780433
KANUNGU	-	3431	15899	0	-	19564	0	269127	1869	6000	39862	355752
KIRUHURA	-	56619	1950	0	-	28729	14893	365114	31650	2400	34777	536132
KISORO	-	7347	17828	0	-	48751	0	191329	0	1652	29265	296172
MBARARA	-	0	13605	12800	-	70239	0	110036	0	0	21500	228180
NTUNGAMO	-	0	18235	3280	-	16999	0	232020	50920	3475	49067	373996
RUKUNGIRI	-	0	7200	6000	-	27477	89700	436266	52500	2000	20750	641893

Annex 3-6 DWSCG average expenditure per technology, '000 UGX (2006/7)

District Name	Spring Protection Small	Spring Protection Medium	Spring Protection Ext. Large	Shallow Well Hand dug	Shallow well hand augered	Shallow well motor drilled	Deep borehole	Valley Tank
ADJUMANI	0	0	0	0	0	0	15847	0
ARUA	0	3318	3659	0	0	5951	17048	0
KOBOKO	0	0	0	0	0	0	0	0
MARACHA/TEREGO	0	1634	0	0	0	6519	21548	0
MOYO	0	0	0	0	0	0	5749	0
NEBBI	0	1099	0	1074	0	0	68023	0
YUMBE	0	0	0	0	0	0	16809	0
AMOLATAR	0	0	0	0	0	0	12594	0
AMURU	0	0	0	0	0	5581	15145	0
APAC	0	1585	0	0	0	3753	16480	0
DOKOLO	0	2500	0	0	0	3611	0	0
GULU	0	0	0	2361	0	4547	19512	0
KITGUM	0	0	0	0	0	0	14184	0
LIRA	0	1112	0	0	0	2230	8030	0
OYAM	2284	0	0	0	0	3600	13783	0
PADER	0	2905	0	4185	0	0	16076	0
ABIM	0	2000	0	0	0	0	15169	0
AMURIA	0	0	0	3278	0	0	16212	0
BUKEDEA	0	0	0	0	0	0	0	0
KAABONG	0	0	0	0	0	0	19549	0
KABERAMAIDO	0	0	0	0	0	0	0	0
KATAKWI	0	0	0	0	0	0	10511	0
KOTIDO	0	0	0	0	0	0	16206	0
KUMI	1788	0	0	3284	0	0	17483	0
MOROTO	1697	234	0	0	0	0	1077	0
NAKAPIRIPIRIT	0	0	0	0	0	0	0	0
SOROTI	0	0	0	2749	0	0	10489	0
BUDAKA	0	2734	0	0	0	0	11476	0
BUDUDA	0	1675	0	0	0	0	0	0
BUGIRI	0	2052	0	7004	0	0	14689	116439
BUKWO	0	3559	0	0	0	0	0	0
BUSIA	0	0	0	3945	0	0	14674	0
BUTALEJA	0	0	0	0	0	0	11069	0
IGANGA	0	0	0	0	0	0	0	0
JINJA	0	2543	0	4219	0	0	5879	0
KALIRO	0	0	0	4915	0	0	16374	0
KAMULI	0	0	0	1022	0	3892	14990	0
KAPCHORWA	0	1675	0	0	0	0	0	0
MANAFA	0	1096	0	0	0	0	12473	0

Annex 3-6 DWSCG average expenditure per technology, '000 UGX (2006/7) (Continued)

District Name	Spring Protection Small	Spring Protection Medium	Spring Protection Ext. Large	Shallow Well Hand dug	Shallow well hand augered	Shallow well motor drilled	Deep borehole	Valley Tank
MAYUGE	0	1092	0	3625	4649	0	14719	0
MBALE	0	1227	0	0	0	0	14958	0
NAMUTUMBA	0	0	0	0	0	0	0	0
PALLISA	0	3412	0	13938	0	0	13007	0
SIRONKO	0	0	0	4766	4766	0	0	0
TORORO	0	0	651	0	0	0	8826	0
BULISA	0	0	0	0	0	0	0	0
HOIMA	0	3894	4503	5967	0	0	0	0
KAYUNGA	0	0	0	5813	0	0	15833	0
KIBOGA	0	0	0	4716	0	0	18121	10000
LUWEERO	0	0	0	4669	0	0	0	0
MASINDI	0	2291	0	5041	0	4502	2505	0
MPIGI	1770	0	0	6873	2931	48871	0	0
MUKONO	0	1774	1990	5316	0	0	10803	0
NAKASEKE	0	0	0	4888	0	0	17596	25053
NAKASONGOLA	0	0	0	0	0	0	16294	8049
WAKISO	0	2016	0	3761	2755	4735	16659	0
BUNDIBUGYO	1400	0	0	2452	0	0	0	0
KABAROLE	0	0	0	2585	0	0	0	0
KAMWENGE	0	3813	0	9654	0	0	0	0
KASESE	0	2295	0	0	0	0	0	0
KIBAALE	887	0	0	5459	0	0	4786	0
KYENJOJO	0	12587	0	4167	0	0	20699	0
MITYANA	0	0	0	3459	0	0	0	0
MUBENDE	0	0	0	2144	0	0	28329	0
KABULA	0	0	0	3702	0	0	0	20004
KALANGALA	0	0	0	5081	1000	0	0	0
MASAKA	0	0	2974	4177	3775	0	0	63119
RAKAI	0	0	0	3897	0	0	0	20103
SEMBABULE	0	0	0	3521	2190	4930	0	107281
BUSHENYI	1617	2551	0	5294	0	0	0	0
IBANDA	0	1745	0	7591	0	0	0	0
ISINGIRO	0	0	0	0	0	0	0	0
KABALE	0	1484	0	0	0	0	0	0
KANUNGU	0	2201	0	4650	0	0	0	0
KIRUHURA	0	0	0	3673	0	0	0	10036
KISORO	0	1565	0	0	0	0	0	0
MBARARA	0	1782	0	1631	0	0	0	0
NTUNGAMO	0	0	0	4249	0	0	0	0
RUKUNGIRI	0	2026	0	0	0	6500	0	0

Annex 5-1 District DWSCG achievements per technology (2006/7)

District Name	Spring Protection Small	Spring Protection Medium	Spring Protection Ext. Large	Shallow Well Hand dug	Shallow well hand augered	Shallow well motor drilled	Deep borehole	Valley Tank
ADJUMANI	0	0	0	0	0	0	10	0
ARUA	0	4	5	0	0	5	11	0
KOBOKO	0	0	0	0	0	0	0	0
MARACHA/TEREGO	0	4	4	0	0	5	16	0
MOYO	0	0	0	0	0	0	2	0
NEBBI	0	11	0	4	0	0	3	0
YUMBE	0	0	0	0	0	0	23	0
AMOLATAR	0	0	0	0	0	0	8	0
AMURU	0	0	0	0	0	5	6	0
APAC	0	3	0	0	0	11	28	0
DOKOLO	0	2	0	0	0	3	0	0
GULU	0	0	0	2	0	2	7	0
KITGUM	0	0	0	0	0	0	18	0
LIRA	0	20	0	0	0	30	8	0
OYAM	4	0	0	0	0	8	13	0
PADER	0	1	0	4	0	0	20	0
ABIM	0	1	0	0	0	0	8	0
AMURIA	0	0	0	5	0	0	19	0
BUKEDEA	0	0	0	0	0	0	0	0
KAABONG	0	0	0	0	0	0	6	0
KABERAMAIDO	0	0	0	0	0	0	0	0
KATAKWI	0	0	0	0	0	0	6	0
KOTIDO	0	0	0	0	0	0	2	0
KUMI	10	0	0	8	0	0	9	0
MOROTO	10	10	0	0	0	0	13	0
NAKAPIRIPIRIT	0	0	0	0	0	0	0	0
SOROTI	0	0	0	9	0	0	27	0
BUDAKA	0	10	0	0	0	0	16	0
BUDUDA	0	15	0	0	0	0	0	0
BUGIRI	0	20	0	20	0	0	8	2
BUKWO	0	3	0	0	0	0	0	0
BUSIA	0	0	0	6	0	0	7	0
BUTALEJA	0	0	0	0	0	0	36	0
IGANGA	0	0	0	0	0	0	0	0
JINJA	0	6	0	12	0	0	12	0
KALIRO	0	0	0	5	0	0	12	0
KAMULI	0	0	0	73	0	8	27	0
KAPCHORWA	0	21	0	0	0	0	0	0
MANAFA	0	5	0	0	0	0	7	0

Annex 5-1 District DWSCG achievements per technology (2006/7) (Continued)

District Name	Spring Protection Small	Spring Protection Medium	Spring Protection Ext. Large	Shallow Well Hand dug	Shallow well hand augered	Shallow well motor drilled	Deep borehole	Valley Tank
MAYUGE	0	28	0	20	14	0	19	0
MBALE	0	18	0	0	0	0	5	0
NAMUTUMBA	0	0	0	0	0	0	0	0
PALLISA	0	21	0	24	0	0	11	0
SIRONKO	0	0	0	2	2	0	0	0
TORORO	0	31	3	0	0	0	44	0
BULISA	0	0	0	0	0	0	0	0
HOIMA	0	2	14	14	0	0	0	0
KAYUNGA	0	0	0	13	0	0	9	0
KIBOGA	0	0	0	29	0	0	3	1
LUWEERO	0	0	0	46	0	0	0	0
MASINDI	0	8	0	15	0	22	3	0
MPIGI	20	0	0	42	10	1	0	0
MUKONO	0	41	28	26	0	0	24	0
NAKASEKE	0	0	0	12	0	0	8	1
NAKASONGOLA	0	0	0	0	0	0	6	2
WAKISO	0	16	0	34	20	4	8	0
BUNDIBUGYO	35	0	0	13	0	0	0	0
KABAROLE	0	0	0	30	0	0	0	0
KAMWENGE	0	8	0	7	0	0	0	0
KASESE	0	5	0	0	0	0	0	0
KIBAALE	11	0	0	12	0	0	8	0
KYENJOJO	0	1	0	47	0	0	11	0
MITYANA	0	0	0	24	0	0	0	0
MUBENDE	0	0	0	27	0	0	1	0
KABULA	0	0	0	2	0	0	0	1
KALANGALA	0	2	0	14	15	0	0	0
MASAKA	0	0	10	30	15	0	0	5
RAKAI	0	0	0	20	0	0	0	1
SEMBABULE	0	0	0	10	2	8	0	3
BUSHENYI	35	17	0	39	0	0	0	0
IBANDA	0	8	0	5	0	0	0	0
ISINGIRO	0	0	0	0	0	0	0	0
KABALE	8	10	0	0	0	0	0	0
KANUNGU	0	9	0	5	0	0	0	0
KIRUHURA	0	0	0	22	0	0	0	14
KISORO	0	10	0	0	0	0	0	0
MBARARA	0	4	0	10	0	0	0	0
NTUNGAMO	0	0	0	30	0	0	0	0
RUKUNGIRI	0	19	0	0	0	15	0	0

Annex 5-2 Sanitation facilities constructed by NGOs/CBOs operating outside emergency areas

No	District	HH Latrines	Public Latrines	HH HWF	Drainage Ch.	Sanplats	Bath Shelters	School HWF	Garbage Pits	Drying Racks	Pick Axes	Sch Lat Stances (M)	Sch Lat Stances (F)	Econsan Toilets	Home Imp. Camp
1	Amuria	1 493		508		33			298	2 504	778				
2	Kumi	1 166		29		34			233	588	134				
3	Apac			60											
4	Kyenjojo	24	5	24				6	22	24		2	2		
5	Kamwenge	29	15	3 029				8	22	24		2	2		
6	Kabarole	56	6	325				4	53	55		2	2		
7	Bundibugyo	19		19				4	19	19					
8	Kamuli	602	14	670		382		50	510	934	22				
9	Mayuge	130	3	160				3	130	180					2
10	Mukono	5	7	200					6	180					
11	Jinja	70		70					67	67					
12	Kaliro	116		116					116	116					
13	Iganga	66	4	66				4	66	66					
14	Luwero	300		300					300	300					
15	Arua	307							120	149					
16	Nebbi			10				11							
17	Maracha - Terego		5					28				20	92		
18	Yumbe			10				92	6	120					
19	Wakiso	205	11	2 952		200		10		4 850		55	55	61	
20	Kampala	30	142	66	904m		15		20	70		12	12	8	
21	Mbarara	69													
22	Isingiro	69													
23	Rukungiri							100							
24	Kanungu							8							
25	Kisoro	48	2	4											
26	Tororo	17	4	200				23				2	5		
27	Bugiri	113		450	13m		40	6	120	135					
28	Mubende							6							
29	Kasese	87		187						100					
30	Masaka			40					40	40					
31	Rakai		12	220			5		40	40		3	3	3	
32	Sembabule			40					40	40					
33	Soroti	166	12	29		83	4		82	286	133	3	3	3	
34	Kapchorwa	195		20						180					
35	Kabale		18	1 090		753									
36	Mpigi	196		1 350				10		1 380					
	TOTAL	**5 578**	**260**	**12 243**	**-**	**1 485**	**64**	**373**	**2 309**	**12 446**	**1 067**	**101**	**176**	**75**	**2**

Annex 5-3 Summary of Performance of Small Towns under regulation by Water Authorities Division for FY 2006/7

No.	Town	Water Supplied (M^3)	Water Sold (M^3)	UFW(%)	Total Connections	Active Connections	New Connections	Extensions made (m)	Total. Bills (Shs)	Total Collections (shs)	Collection Efficiency(%)	T. Cost of Sys. Operation	Unit Cost (shs/m^3)	%age funded by rev.	Staff/1000 Connections	No of Staff
1	ADJUMANI	42 429	36 618	13,7%	281	193	31	5 100	36 620 768	29 455 670	80,4%	32 793 662	896	90	11	3
2	BOMBO	57 278	50 813	11,3%	364	270	65	3 667	67 371 472	56 193 969	83,4%	65 302 034	1 285	86	8	3
3	BUDADIRI	42 052	35 661	15,2%	490	413	0	0	24 836 701	19 755 546	79,5%	12 415 787	348	100	14	7
4	BUDAKA	19 026	17 688	7,0%	242	190	45	1 020	22 629 917	13 871 688	61,3%	11 074 076	626	100	21	5
5	BUGIRI	42 007	38 135	9,2%	637	498	32	250	51 482 627	62 244 565	120,9%	45 849 728	1 202	100	13	8
6	BUKOMANSIMBI	8 988	7 723	14,1%	186	180	21	1 360	11 314 678	11 158 785	98,6%	11 246 225	1 456	99	27	5
7	BUNDIBUGYO	42 531	22 098	48,0%	224	64	2	0	16 653 600	13 682 150	82,2%	22 732 500	1 029	60	18	4
8	BUSEMBATYA	16 712	13 380	19,9%	281	185	60	3 250	16 692 023	15 820 205	94,8%	14 466 127	1 081	100	14	4
9	BUSIA	95 636	86 414	9,6%	603	596	14	0	80 611 824	64 066 646	79,5%	32 186 540	372	100	10	6
10	BUSOLWE	13 810	11 444	17,1%	239	168	51	0	17 361 747	9 323 869	53,7%	7 781 749	680	100	13	3
11	BUWENGE	29 394	24 994	15,0%	615	565	42	300	27 287 381	18 512 039	67,8%	24 496 700	980	76	7	4
12	DOKOLO	20 111	14 677	27,0%	67	65	18	3 800	14 617 918	13 101 148	89,6%	21 433 255	1 460	61	60	4
13	IBANDA		59 265		689	464	9	0	39 347 450	39 462 710	100,3%	32 584 182	550	100	6	4
14	IGANGA	22 756	10 842	52,4%	408	247	5	0	13 785 775	6 466 479	46,9%	12 550 000	1 158	52	17	7
15	KABERAMAIDO	4 096	3 349	18,2%	50	38	23	2 500	3 609 799	3 228 419	89,4%	12 933 150	3 862	25	80	4
16	KABWOHE-ITENDERO		50 815		518	497	45	1 008	68 213 209	58 570 000	85,9%	29 197 599	575	100	10	5
17	KAKIRI	17 365	12 322	29,0%	149	136	9	0	14 706 953	9 749 141	66,3%	14 695 884	1 193	66	27	4
18	KALANGALA	19 655	13 812	29,7%	211	168	20	0	18 191 336	17 182 507	94,5%	23 990 188	1 737	72	14	3
19	KALIR0	15 470	13 038	15,7%	321	266	24	4 140	14 141 300	13 715 268	97,0%	11 714 765	899	100	9	3
20	KALISIZO	33 377	28 652	14,2%	399	336	62	0	33 809 360	34 201 712	101,2%	25 755 441	899	100	13	5
21	KALUNGU	10 327	9 107	11,8%	216	210	32	0	13 248 291	13 634 423	102,9%	13 557 275	1 489	100	32	7
22	KAMULI	71 355	54 512	23,6%	916	805	62	0	64 555 231	55 504 608	86,0%	38 734 669	711	100	8	7
23	KAPCHORWA	139 893	43 464	68,9%	392	326	0	0	23 022 154	7 463 063	32,4%	8 537 502	196	87	10	4
24	KASAMBYA	6 692	3 803	43,2%	100	70	2	50	8 845 200	4 755 300	53,8%	3 990 113	1 049	100	30	3
25	KATAKWI	18 637	17 069	8,4%	138	128	14	700	20 679 497	20 334 458	98,3%	42 131 050	2 468	48	36	5
26	KATWE-KABATORO	15 851	14 854	6,3%	128	121	57	1 400	14 744 800	11 477 384	77,8%	32 021 000	2 156	36	23	3
27	KAYUNGA	38 742	30 323	21,7%	587	350	0	1 660	30 916 293	18 612 857	60,2%	22 151 682	731	84	7	4
28	KIBIBI	15 867	13 660	13,9%	75	62	19	800	13 400 513	11 168 263	83,3%	11 102 351	813	100	67	5
29	KIBOGA	32 062	31 009	3,3%	103	94	10	0	33 948 136	17 999 812	53,0%	24 018 326	775	75	29	3
30	KINONI	11 401	9 886	13,3%	294	269	21	0	15 459 268	12 449 530	80,5%	19 919 400	2 015	62	14	4
31	KISORO	205 905	164 409	20,2%	785	752	61	2 112	254 278 000	256 396 000	100,8%	238 295 000	1 449	100	24	19
32	KITGUM	109 514	79 154	27,7%	515	410	6	842	62 388 100	46 523 917	74,6%	57 513 010	727	81	31	16
33	KOTIDO	21 081	13 153	37,6%	116	83	8	750	34 008 105	22 046 040	64,8%	63 311 400	4 814	35	26	3
34	KUMI	20 558	18 487	10,1%	283	230	35	1	23 882 494	23 489 983	98,4%	27 770 048	1 502	85	14	4
35	KYAZANGA	21 792	20 457	6,1%	356	356	60	1	28 384 183	22 983 270	81,0%	22 549 150	1 102	100	8	3
36	KYENJOJO	14 380	12 828	10,8%	192	170	6	808	36 387 890	34 237 225	94,1%	30 070 581	2 344	100	21	4
37	KYOTERA													0		
38	LAROPI	962	855	11,2%	29	20	0	0	968 680	790 450	81,6%	24 148 158	28 260	3	103	3
39	LUKAYA	46 558	41 933	9,9%	503	488	79	50	53 225 491	54 900 098	103,1%	45 824 633	1 093	100	14	7
40	LUWERO	89 455	78 342	12,4%	876	793	22	0	94 010 700	87 707 700	93,3%	114 460 777	1 461	77	11	10
41	LWAKHAKHA	20 261	15 295	24,5%	298	222	3	1 300	7 930 972	5 631 900	71,0%	10 800 000	706	52	17	5
42	LYANTONDE	42 814	35 780	16,4%	471	409	41	0	63 679 187	62 413 565	98,0%	76 402 850	2 135	82	13	6
43	MBIRIZI	12 179	10 850	10,9%	240	218	15	0	13 439 565	12 649 700	94,1%	15 994 540	1 474	79	21	5
44	MOROTO	5 258	3 780	28,1%	166	92	0	2 500	5 530 000	3 362 500	60,8%	11 387 233	3 012	30	24	4
45	MOYO	95 925	52 833	44,9%	371	309	18	1 147	52 311 720	46 464 572	88,8%	50 501 402	956	92	11	4
46	NAKASONGOLA	22 271	19 257	13,5%	267	237	17	600	31 036 165	25 714 953	82,9%	46 585 748	2 419	55	22	6
47	NGORA	49 395	33 118	33,0%	160	97	28	0	40 590 680	43 997 725	108,4%	46 939 658	1 417	94	38	6
48	NKONKONJERU	10 048	5 941	40,9%	240	177	8	0	11 361 392	7 184 425	63,2%	31 142 230	5 242	23	17	4
49	NTUNGAMO	72 460	56 244	22,4%	415	374	14	500	70 565 968	70 548 986	100,0%	43 287 092	770	100	12	5
50	PAKELE	8 166	7 102	13,0%	56	52	11	2 153	8 861 250	6 459 940	72,9%	20 349 253	2 865	32	54	3
51	PALLISA	41 195	23 188	43,7%	527	200	3	2 850	28 890 185	27 479 206	95,1%	17 768 651	766	100	11	6
52	RAKAI	16 311	11 856	27,3%	288	227	3	0	25 563 430	17 419 445	68,1%	30 287 440	2 555	58	17	5
53	RUKUNGIRI	69 229	57 123	17,5%	547	493	32	0	69 552 422	72 317 656	104,0%	50 523 223	884	100	9	5
54	SEMUTO	14 815	11 842	20,1%	128	120	44	87	17 820 243	12 114 525	68,0%	9 974 610	842	100	31	4
55	SERERE	1 517	1 375	9,3%	55	38	7	300	2 278 521	2 267 711	99,5%	13 878 000	10 093	16	55	3
56	WAKISO	191 263	38 535	79,9%	487	446	40	0	41 614 043	32 827 065	78,9%	32 931 252	855	100	10	5
57	WOBULENZI	72 494	53 163	26,7%	501	433	0	0	52 804 250	55 321 793	104,8%	41 268 197	776	100	14	7
	AVERAGE			**22,2%**							**83,1%**		**2 057**	**77**	**23**	
	TOTAL	**2 179 322**	**1 646 320**		**18 795**	**15 420**	**1 356**	**47 006**	**1 963 468 853**	**1 736 412 560**		**1 855 327 089**				

Key Issues and Recommendations on Small Towns Management

A number of issues arise from the findings of this audit, however, the key areas of concern which require attention and respective recommendations for action are categorized below:

1. Reporting Format

The current reporting format is biased towards quantitative data and does not provide sufficient information for management decision making based on well-informed analysis. In future reports from Water Authorities should be structured in a way to show trends, deviations from approved business plan targets and decisions taken by responsible institutions on such deviations. This will not only assist in quick detection of declining trends, but will result in the responsible parties to the contracts (especially Water supply Boards) responding to such situations before reporting on them. This should be applicable to all quantitative data reported.

2. Data Capture and Storage

Water Authorities do not keep independent records of the operations in the towns. They should be required as per their obligations under the Performance Contracts to keep and update data alongside that of the Operators. This will minimise the need for Operators and other technical staff becoming pseudo and full time members of the Water Supply Boards, and limit them to providing well written reports as a basis for WSB deliberations. Further it will mitigate any otherwise diverse effects caused by operators who vandalise and delete data before they leave towns. Technical officers should be required to provide verification reports on which the WSB bases its decisions.

3. Procurement of Private Operators

It has been established from an earlier report (Situation Analysis of Operating Environment in Small Towns Water Supply), that procurement of Private Operators is characterised by bribe seeking by officers and offers by bidders, which does not necessarily lead to the most suitable bidders acquiring management contracts. This has also been identified in this audit where local council politicians even seek to terminate ongoing contracts soon as they assume office because of the electoral promises they make to different parties (people with business interest in water supply contracts). This practice undermines quality and effectiveness and must be stopped. The Ministry of Water and Environment should institute procurement audits at the slightest detection of such practices, which are usually come with very glaring evidence.

4. Escrow Accounts

In the towns were escrow accounts were noted to have anomalies, revenue performance was also better than those were no anomalies were detected. This trend is likely to recur when other towns perform better. In the quarterly reports submitted, a requirement for information on withdrawals and monthly statements should be made. This is especially because escrow accounts have very few transactions and illegitimate transactions can very easily be detected.

5. Water Board Expenses

Some towns pay WSB expenses directly form Escrow Accounts as they have not opened up special accounts for the purpose. Some times these expenses are drawn on the same vouchers and cheques for other operational expenses making it difficult to clearly establish the percentage paid to the WSB. This practice also conceals illegitimate costs under WSB expenses. All towns that have not established and operate WSB expense accounts should be compelled to do so, and WSB expenses should not be allowed to exceed 5%. Such expenses should be broadly defined and not presumed to cater for only sitting allowances.

6. Financial Auditing

Town Council internal auditors are part of the routine approval process for withdrawals. Water accounts in small towns are shielded from outright public audits, despite that Local Government Financial & Accounting Regulations demand so, and the Performance Contract re-enforces this. The same Auditors carry out special or other forms of auditing on Escrow accounts. This is not only in violation of the regulations but presents a clear case of conflict of interest. This practice must be stopped and a more effective mechanism established to guarantee compliance and transparency. All Water authorities should be required to comply with the provisions of the Local Government Financial & Accounting Regulations and the Performance Contracts (Clause 16.1) on auditing, appoint Auditors and provide certified annual audit reports along with the final quarter of the financial year being reported.

7. Redress Mechanisms

While a few cases of ineligible payments have been noted, the responsible officers should account for the transactions of such nature and report on the steps taken to recover whatever money is considered spent irregularly.

8. Capacity Building for WSB

WSB are an important instrument in sustainable delivery of services and it is clear that they are inadequately capacitated. Alongside training, simplified hand books (popular versions) of duties and obligations of members should be printed and distributed to all old

and new board members. This can in future be incorporated in the WSB expenses as the hand book will utmost constitute less than ten pages which can easily be photo copied.

9. Centralised Accounting by Private Operators

A number of operators with management contracts in two or more towns have tended to centralise accounting processes; a positive undertaking in cost saving. Such operators should be strongly advised that the data they hold belongs to the Water Authorities from where they operate and must thus disaggregate this information, make it available in full at the relevant area offices, customers when they need it and to other relevant authorities for inspection.

10. Accumulated Revenue Arrears

It is noticeable that a large portfolio of revenue arrears is held by government departments and institutions, especially Police, Prisons, Courts and schools. The Ministry of Water and Environment, should work closely with these departments to secure a reasonable and acceptable schedule of payments in order to avoid crippling the operations in small towns if dependence on revenue is to be realised.

11. Technical Verification by Technical Officers

Technical Officers often find it hard to carry out independent supervisory work and prepare the necessary reports for the WSB for lack of funding. This is partially responsible for their permanent presence at WSB meetings. A special ring fenced percentage or inclusion into WSB expenses should be provided to enable them carry out supervisory work and provide independent reports on operations.

12. Regulating Water Authorities without Conditional Grants

In the past conditional grants have provided (though not so effectively) a tool for enforcing compliance with regulations. Water Authorities that generate revenues over and above total cost of O&M may become difficult to regulate. The Ministry of Water and Environment should establish a direct partnership with that of Local Government as supervision of most of the small towns' accounting officers has now been re-centralised. This way appropriate ways of enforcing compliance can be explored.

The above recommendations are derived from the findings of the audit and are therefore limited in nature to the issues identified in the sample towns. However considering the similarities in occurrence in the towns, when implemented they provide another step in improving operations and sustainability in small towns water supply.

Annex 5-5 Grant allocation and releases per district for O&M in Small Towns

PAF CONDITIONAL GRANT ALLOCATIONS AND RELEASES PER DISTRICT FOR O&M IN SMALL TOWNS - FY 2006/2007			
DISTRICT	**VOTE**	**ALLOCATION / UGX '000**	**TOTAL RELEASE / UGX '000**
Adjumani	501	48 000	45 120
Apac	502	36 000	33 840
Bugiri	504	24 000	22 560
Bundibugyo	505	24 000	22 560
Bushenyi	506	24 000	22 560
Busia	507	24 000	22 560
Iganga	510	51 000	47 940
Jinja	511	18 000	16 920
Kaberamaido	514	24 000	22 560
Kalangala	515	30 000	28 200
Kamuli	517	24 000	22 560
Kanungu	519	18 000	16 920
Kapchorwa	520	24 000	22 560
Kasese	521	34 000	31 960
Katakwi	522	34 000	31 960
Kayunga	523	24 000	22 560
Kiboga	525	24 000	22 560
Kisoro	526	24 000	22 560
Kitgum	527	24 000	22 560
Kotido	528	24 000	22 560
Kumi	529	72 000	67 680
Kyenjojo	530	34 000	31 960
Luwero	532	72 000	67 680
Masaka	533	120 000	112 800
Moyo	539	42 000	39 480
Mpigi	540	24 000	22 560
Mubende	541	24 000	22 560
Mukono	542	29 000	27 260
Nakasongola	544	60 000	56 400
Ntungamo	546	24 000	22 560
Pallisa	548	24 000	22 560
Rakai	549	72 000	67 680
Rukungiri	550	24 000	22 560
Sembabule	551	30 000	28 200
Sironko	552	24 000	22 560
Soroti	553	18 000	16 920
Wakiso	555	48 000	45 120
Butaleja	557	18 000	16 920
Ibanda	558	18 000	16 920
Kaliro	561	18 000	16 920
Manafwa	566	18 000	16 920
Nakaseke	569	18 000	16 920
Budaka	571	24 000	22 560
Dokolo	575	24 000	22 560
Lyantonde	580	36 000	33 840
Moroto	762	28 000	26 320
	TOTAL RELEASE		**1 410 001**

Annex 5-6 Donor contribution to WASH Cluster NGOs

SUMMARY OF FUNDING STATUS AS PROVIDED BY WASH CLUSTER MEMBERS IN US$																		
NGOs	DONORS																	
	ECHO	UNICEF	USAID/ OFDA	Oxfam	Oxfam Ireland	OGB	German Gov.	Dutch Gov.	UNHCR	PRM	CIDA	World Vision UK	Irish Aid	Private C&D donors	COOPI	UN WFP	Donor not defined	Total
ACF	582 847	1 065 736	281 618															**1 930 201**
ASB							187 787											**187 787**
AVSI	726 520	33 500	835 000					344 428										**1 939 448**
C&D														376 664	71 916	58 000	32 825	**539 405**
CESVI		479 786																**479 786**
CONCERN (Pader)																	572 292	**572 292**
CPAR																	130 508	**130 508**
FOOD FOR THE HUNGRY			419 422															**419 422**
GAA							400 000											**400 000**
GOAL	608 000																	**608 000**
IMC		110 417																**110 417**
IRC	375 000		770 274						32 000	70 000								**1 247 274**
MED AIR	121 363	60 682	935 513															**1 117 557**
MERCY CORPS		110 417	25 000															**135 417**
OXFAM	1 380 099	153 130		87 824	326 207	26 103												**1 973 363**
PSI		626 371																**626 371**
UWASNET		80 000																**80 000**
COOPI	812 000	242 955																**1 054 955**
WVI											450 000	245 000	135 000					**830 000**
Total	**4 605 829**	**2 962 994**	**3 266 827**	**87 824**	**326 207**	**26 103**	**587 787**	**344 428**	**32 000**	**70 000**	**450 000**	**245 000**	**135 000**	**376 664**	**71 916**	**58 000**	**735 625**	**14 382 203**

Annex 6-1 Summary of District Situation Analysis 2006/7

	Districts (excl Kla)	Prot. springs.		Deep BH.		Shal. well		Dug well		Rain Water Tanks		Valley Tank		GFS Taps		RGC systems	Population served by point sources	Rural population (Projections June 2007)	% Coverage
		Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn				
1	KALANGALA	11	5	0	1	50	8	14	0	29	0	0	0	11	0	0	26 636	43 334	61
2	KIBOGA	98	24	137	18	186	30	53	0	0	0	2	0	38	0	0	157 300	264 284	60
3	LUWERO	7	0	391	61	0	0	323	0	36	0	0	0	0	0	0	234 116	320 901	73
4	NAKASEKE	0	0	171	15	7	0	227	33	37	0	0	0	0	0	1	124 189	156 063	80
5	MASAKA	454	135	158	252	690	253	0	0	45	6	9	0	0	0	0	519 453	718 829	72
6	MPIGI	533	17	105	12	375	28	0	0	91	0	2	0	29	0	3	258 478	422 838	61
7	MITYANA	71	59	125	41	359	108	0	0	355	72	0	0	4	0	0	178 487	263 737	68
8	MUBENDE	116	0	219	0	337	0	0	0	88	0	0	0	60	0	1	203 987	463 177	44
9	MUKONO	1 591	0	397	0	380	0	23	0	18	0	0	0	54	0	2	554 065	745 147	74
10	NAKASONGOLA	0	2	110	42	54	0	7	10	3	0	2	0	0	0	1	66 852	132 580	50
11	LYANTONDE	0	0	61	37	6	0	0	0	43	0	2	0	0	0	0	31 763	63 756	50
12	RAKAI	128	33	161	53	269	139	44	0	162	0	18	0	0	0	0	231 615	425 642	54
13	SSEMBABULE	1	0	78	74	1	1	78	32	15	5	22	4	0	0	0	80 002	192 662	42
14	KAYUNGA	28	26	368	16	132	27	0	0	0	0	0	0	0	0	0	173 700	300 772	58
15	WAKISO	517	75	245	46	684	130	0	0	22	5	0	0	4	1	1	444 348	1 018 539	44
16	BUGIRI	142	41	235	46	109	31	0	0	64	22	0	0	0	0	0	163 528	494 239	33
17	BUSIA	185	0	287	23	3	0	30	0	39	0	0	0	0	0	0	140 134	214 155	65
18	BUSIKI	41	0	248	14	133	0	106	23	23	0	0	0	0	0	0	162 580	195 219	83
19	IGANGA	51	1	755	51	252	46	0	0	73	0	0	0	0	0	0	342 016	583 858	59
20	JINJA	300	10	194	4	275	4	0	0	0	0	0	0	0	0	0	204 550	339 965	60
21	KALIRO	0	0	286	26	10	3	0	0	0	0	0	0	0	0	0	97 500	180 057	54
22	KAMULI	2	0	736	33	311	10	0	0	0	0	0	0	0	0	0	327 400	630 184	52
23	BUKWA	85	8	0	0	0	0	0	0	9	5	0	0	79	19	0	33 384	59 760	56
24	KAPCHORWA	439	0	12	3	0	0	0	0	8	28	0	0	89	28	0	106 251	161 989	66
25	AMURIA	49	25	373	25	80	18	0	0	21	0	0	0	0	0	0	162 596	241 671	67
26	KATAKWI	1	1	253	37	38	28	0	0	6	1	0	0	0	0	0	107 242	151 719	71
27	BUKEDEA	133	77	83	37	50	0	58	20	39	0	0	0	20	0	1	120 405	150 177	80
28	KUMI	191	82	285	49	52	0	153	8	81	0	0	0	33	0	0	224 136	316 985	71
29	MANAFWA	302	42	102	10	5	0	0	0	23	0	0	0	68	10	0	115 738	304 220	38
30	BUDUDA	198	65	16	2	0	0	0	0	10	0	0	0	58	9	0	67 254	142 633	47
31	MBALE	159	15	209	17	13	2	0	0	11	0	0	0	168	12	0	134 166	302 917	44
32	BUDAKA	62	0	196	16	15	4	0	0	0	0	0	0	0	0	0	81 181	158 895	51
33	PALLISA	112	22	386	46	71	19	0	0	0	0	0	0	0	0	0	183 400	419 619	44
34	SOROTI	134	32	663	87	247	41	0	0	56	12	0	0	0	0	1	330 540	418 008	79
35	BUTALEJA	7	9	232	26	16	19	0	0	3	0	0	0	0	0	0	91 118	179 039	51
36	TORORO	229	16	543	27	0	0	29	6	0	0	0	0	0	0	3	240 312	391 742	61
37	KABERAMAIDO	64	11	299	41	104	17	0	0	64	0	0	0	0	0	0	140 989	157 102	90
38	MAYUGE	88	2	218	32	112	8	0	0	17	0	0	0	13	0	0	131 052	367 827	36
39	SIRONKO	631	0	84	0	46	0	0	0	0	0	0	0	386	0	0	215 355	306 182	70
40	ADJUMANI	17	0	463	49	46	5	0	0	5	0	0	0	1	5	1	176 412	247 220	71

Annex 6-1 Summary of District Situation Analysis 2006/7 (Continued)

	Districts (excl Kla)	Prot. springs.		Deep BH.		Shal. well		Dug well		Rain Water Tanks		Valley Tank		GFS Taps		RGC systems	Population served by point sources	Rural population (Projections June 2007)	% Coverage
		Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn	Fn	N Fn				
41	OYAM	128	16	184	61	124	79	0	0	63	0	0	0	0	0	0	163 578	316 963	52
42	APAC	164	18	388	106	130	0	7	0	97	0	0	0	0	0	0	226 282	478 772	47
43	KOBOKO	268	191	83	16	26	3	0	0	23	4	0	0	8	11	0	107 131	119 088	90
44	MARACHI	406	69	320	73	67	1	0	0	76	18	0	0	62	0	1	239 682	361 871	66
45	ARUA	618	100	353	78	60	2	0	0	91	13	0	0	11	0	0	298 455	429 707	69
46	AMURU	151	0	234	0	64	0	5	0	0	0	0	0	0	0	0	116 235	202 834	57
47	GULU	177	0	262	0	96	2	43	0	0	0	0	0	1	0	0	155 835	205 548	76
48	KITGUM	0	0	448	66	102	6	0	0	22	27	0	0	0	12	0	142 761	292 275	49
49	KAABONG	0	0	151	39	22	0	3	0	7	1	5	0	0	0	0	64 548	555 065	12
50	KOTIDO	0	0	113	65	0	0	0	0	25	13	5	0	0	0	0	53 656	221 267	24
51	ABIM	2	0	68	37	53	39	0	0	10	14	0	0	0	0	0	46 402	83 341	56
52	AMOLATAR	0	0	150	44	2	5	0	0	0	0	27	14	24	6	0	64 800	113 048	57
53	DOKOLO	131	20	51	31	104	32	0	0	0	0	14	12	13	0	0	97 550	152 063	64
54	LIRA	523	100	161	67	223	84	0	0	0	0	23	15	0	0	0	284 266	510 993	56
55	MOROTO	0	3	300	38	0	0	0	0	59	0	26	16	9	28	1	113 196	240 466	47
56	MOYO	16	8	280	46	18	19	3	13	5	0	0	0	63	0	0	127 980	263 385	49
57	NEBBI	792	101	344	130	80	22	0	0	113	97	13	0	91	7	1	321 655	421 670	76
58	NAKAPIRIPIRIT	1	3	126	115	3	14	0	0	0	0	0	0	0	0	0	78 200	202 296	39
59	PADER	8	0	520	111	80	3	0	0	48	0	0	0	0	0	0	215 461	402 817	53
60	YUMBE	23	4	145	50	35	3	1	0	0	0	0	0	0	0	0	75 600	344 021	22
61	BUNDUBUGYO	304	29	12	20	0	0	57	103	25	88	0	0	260	0	0	156 174	248 791	63
62	BUSHENYI	1 855	449	69	89	0	0	146	17	164	2	0	0	678	0	3	629 228	762 740	82
63	HOIMA	542	0	317	14	145	0	176	6	13	0	0	0	23	7	0	297 086	389 975	76
64	KABALE	1 352	241	51	53	6	0	0	0	1 015	112	0	0	1 314	471	4	413 260	433 124	95
65	KABAROLE	266	107	61	25	341	42	22	0	46	2	0	0	77	0	1	233 738	339 252	69
66	KASESE	1 091	67	108	62	0	0	0	0	0	0	0	0	1 785	0	0	442 552	549 707	81
67	KIBAALE	635	0	364	0	0	0	617	0	176	0	0	0	0	0	0	400 889	513 505	78
68	KISORO	275	6	2	0	0	0	0	0	69	5	0	0	91	0	2	74 757	223 354	33
69	BULISA	33	0	47	21	0	0	32	0	0	0	0	0	11	0	0	38 250	79 968	48
70	MASINDI	268	60	314	94	216	20	162	1	0	0	0	0	0	0	4	308 565	464 222	66
71	IBANDA	159	24	21	20	56	0	0	0	292	7	0	0	328	16	0	116 444	200 930	58
72	ISINGIRO	55	4	97	56	56	7	0	0	527	0	0	0	167	3	0	104 694	360 980	29
73	KIRUHURA	1	0	144	45	70	0	0	0	399	0	7	0	14	1	0	80 188	242 407	33
74	MBARARA	306	89	88	46	27	6	0	0	423	2	0	0	509	58	0	200 430	333 667	60
75	NTUGAMO	978	0	121	139	0	0	367	0	97	0	0	0	283	0	2	374 232	401 298	93
76	RUKUNGIRI	989	183	47	43	68	2	0	0	57	0	0	0	164	10	3	265 005	281 775	94
77	KAMWENGE	531	21	35	40	318	14	0	0	283	0	0	0	275	12	1	237 124	279 317	85
78	KANUNGU	698	297	39	51	30	3	0	0	99	25	0	0	396	27	3	211 772	211 973	95
79	KYENJOJO	381	36	192	36	346	42	0	0	77	50	4	11	70	33	1	284 164	431 713	66
	Total	**21 304**	**3 081**	**16 694**	**3 396**	**8 486**	**1 429**	**2 786**	**272**	**5 897**	**636**	**181**	**72**	**7 842**	**786**	**42**	**15 246 052**	**25 313 834**	**60**

Annex 6-2 Sub-counties with coverage rates below 20%

District	County	Sub county	Coverage (%)	No. of S/C with coverage< 20%	% of S/C with coverage < 20%
Nakaseke	Nakaseke	Ngoma	16.5	1	13
Mukono	BuvumaIslands	Bugaya	7.0		
Mukono	BuvumaIslands	Bweema	7.8		
Mukono	Mukono	KkomeIslands	19.2	3	13
Nakasongola	Buruli	Kalongo	13.8		
Nakasongola	Buruli	Lwabyata	12.8	2	25
Rakai	Kooki	Ddwaniro	9.5		
Rakai	Kooki	Kagamba	8.6		
Rakai	Kooki	Kyalulangira	7.2	3	17
Wakiso	Kyadondo	Kira	15.2		
Wakiso	Kyadondo	Makindye	18.8		
Wakiso	Kyadondo	Nabweru	13.3	3	21
Bugiri	Bukooli	Banda	7.9		
Bugiri	Bukooli	Buyinja	18.4		
Bugiri	Bukooli	Mutumba	7.2		
Bugiri	Bukooli	SiguluIslands	14.9	4	27
Manafwa	Bubulo	Bugobero	17.1		
Manafwa	Bubulo	Butiru	17.2	2	20
Tororo	WestBudama	Kirewa	11.9	1	7
Apac	Kwania	Abongomola	4.5	1	7
Arua	Madi-Okollo	Rigbo	13.2	1	6
Kitgum	Chua	Lagoro	2.0		
Kitgum	Chua	OmiyaAnyima	1.7		
Kitgum	Lamwo	ParabekOgili	2.9		
Kitgum	Lamwo	PadibeWest	2.1		
Kitgum	Lamwo	Paloga	2.6	5	28
Kaabong	Dodoth	Kalapata	6.8		
Kaabong	Dodoth	Kapedo	17.0		
Kaabong	Dodoth	Kathile	10.4		
Kaabong	Dodoth	Lolelia	6.0		
Kaabong	Dodoth	Loyoro	11.0		
Kaabong	Dodoth	Sidok	13.5		
Kaabong	Dodoth	Kaabong	6.2	7	88
Kotido	Jie	Panyangara	17.9	1	20
Moyo	Obongi	Gimara	17.5	1	14
Nakapiripirit	Pokot	Karita	15.2	1	11
Yumbe	Aringa	Kei	19.9		
Yumbe	Aringa	Midigo	9.5		
Yumbe	Aringa	Odravu	18.6	3	43
Kisoro	Bufumbira	Chahi	0.4		
Kisoro	Bufumbira	Muramba	10.1		
Kisoro	Bufumbira	Nyakabande	19.9		
Kisoro	Bufumbira	Nyarusiza	2.8	4	31
Isingiro	Isingiro	Kikagate	17.3		
Isingiro	Isingiro	Nyakitunda	16.6	2	20
Mbarara	Kashari	Rubaya	13.4	1	8
Total			n/a	**46**	

Annex 6-3 DWSCG allocation per person for the ten districts with the lowest coverage

District	Rural Pop Census (2002)	Projected Rural Pop 2007	Grant Release 2006/07	Allocation per rural person
Bugiri	395,345	494,239	738,121,000	1,493
Manafwa	262,566	304,220	298,409,000	980
Mayuge	315,959	367,827	740,782,000	2,014
Kaabong	353,483	555,065	528,544,000	952
Kotido	140,910	221,267	317,999,000	1,437
Nakapiripit	152,854	202,296	259,111,000	1,280
Yumbe	236,383	344,021	443,820,000	1,290
Kisoro	208,984	223,354	324,197,000	1,532
Isingiro	316,025	360,980	499,374,000	1,383
Kiruhura	212,219	242,407	388,079,000	1,600
		3,315,676	4,538,436,000	Av 1,396

Annex 6-4 DWSCG allocation per person for the ten districts with the highest coverage

District	Rural Pop Census (2002)	Projected Rural Pop 2007	Grant Release 2006/07	Allocation per rural person
Busiki	167,691	195,219	350,140,000	1,793
Kaberamaido	129,301	157,102	306,620,000	1,951
Koboko	99,421	119,088	269,775,000	2,265
Bushenyi	693,615	762,740	946,976,000	1,242
Kabale	416,974	433,124	779,229,000	1,799
Kasese	463,305	549,707	640,394,000	1,165
Ntungamo	366,667	401,298	614,316,000	1,596
Rukungiri	262,397	281,775	640,421,000	2,273
Kamwenge	250,409	279,317	612,756,000	2,193
Kanungu	191,849	211,973	326,224,000	1,539
		3,391,343	5,486,851,000	Av 1,782

Annex 6-5 List of Small Towns and their coverage *(Towns where "total connections" is zero have no piped water supply and the coverage figures are based on access to protected springs and deep boreholes)*

No.	Town	Population June 2007	Total Connections	Total population served	Total %age covered
1	ABIM	5 469	0	1 200	22
2	ABOKE	6 476	0	600	9
3	ADJUMANI	25 244	281	10 182	40
4	ADUKU	5 968	86	2 814	47
5	AMOLATAR	6 273	0	600	10
6	AMURIA	7 915	0	300	4
7	AMURU	5 598	0	1 200	21
8	ANAKA	8 254	0	600	7
9	ANYEKE	10 038	0	1 050	10
10	APAC	22 823	0	1 050	5
11	ATANGA	5 557	0	450	8
12	ATIAK	6 584	0	600	9
13	BOMBO	14 086	364	7 914	56
14	BUDADIRI	15 865	490	11 634	73
15	BUDAKA	18 489	242	7 320	40
16	BUGIRI	22 702	637	14 580	64
17	BUHIMBA	4 936	0	600	12
18	BUJEJE	1 737	50	1 650	95
19	BUKOMANSIMBI	4 786	186	4 547	95
20	BUKWA	8 652	0	300	3
21	BULANGA	3 883	0	1 200	31
22	BULISA	5 548	0	300	5
23	BUNAGANA	6 776	15	2 400	35
24	BUNDIBUGYO	17 319	224	7 530	43
25	BUSEMBATYA	4 533	281	4 306	95
26	BUSIA	43 662	603	15 252	35
27	BUSOLWE	19 527	239	7 170	37
28	BUWAMA	4 580	0	1 500	33
29	BUWENGE	15 991	615	15 192	95
30	BUYANJA	7 923	50	2 766	35
31	BWIJANGA	1 448	50	1 376	95
32	DOKOLO	4 344	67	4 127	95
33	HIMA	50 515	0	450	1
34	IBANDA	26 342	689	15 210	58
35	IGANGA	44 213	408	11 316	26
36	ISINGIRO	39 355	0	750	2
37	KAABONG	4 497	0	1 350	30
38	KABERAMAIDO	23 304	50	4 740	20
39	KABWOHE-ITENDERO	16 644	518	12 114	73
40	KAGADI	13 447	0	600	4
41	KACHUMBALA	9 099	50	2 850	31
42	KAKIRI	6 224	149	5 622	90
43	KAKUMIRO	7 349	0	900	12
44	KALANGALA	3 920	211	3 724	95
45	KALIR0	17 211	321	8 226	48
46	KALISIZO	15 230	399	8 556	56
47	KALONGO	5 923	0	1 050	18
48	KARUJANGA	5 703	0	600	11
49	KALUNGU	5 856	216	4 230	72
50	KAMBUGA	5 532	29	4 914	89

Annex 6-5 List of Small Towns and their coverage *(Towns where "total connections" is zero have no piped water supply and the coverage figures are based on access to protected springs and deep boreholes)* **(Continued)**

No.	Town	Population June 2007	Total Connections	Total population served	Total %age covered
51	KAMDIN	11 049	0	2 100	19
52	KAMULI	13 064	916	12 410	95
53	KAMWENGE	14 519	6	1 800	12
54	KANGULUMIRA	12 380	200	5 250	42
55	KANUNGU	5 703	88	4 212	74
56	KAPCHORWA	10 653	392	10 121	95
57	KARENGA	8 133	0	1 800	22
58	KASAMBYA	8 399	100	3 150	38
59	KASHENSHERO	4 979	15	3 300	66
60	KATAKWI	9 226	138	5 304	57
61	KATETE	2 898	17	1 164	40
62	KATOVU	4 899	0	750	15
63	KATWE-KABATORO	6 708	128	3 828	57
64	KAYUNGA	22 456	587	15 510	69
65	KIBAALE	13 100	0	750	6
66	KIBIBI	4 651	75	2 550	55
67	KEBISONI	12 188	17	2 514	21
68	KIBOGA	14 178	103	5 292	37
69	KIGANDA	6 284	0	300	5
70	KIGOLOBYA	6 039	0	900	15
71	KIGUMBA	33 567	0	1 500	4
72	KIHIHI	13 057	54	2 946	23
73	KINONI	7 459	294	7 086	95
74	KILEMBE	22 829	50	2 100	9
75	KIRUHURA	13 041	0	750	6
76	KISIIZI	3 472	9	2 496	72
77	KISORO	11 756	785	11 168	95
78	KITGUM	51 184	515	14 946	29
79	KITWE	4 859	71	4 410	91
80	KOBOKO	30 886	0	3 600	12
81	KOTIDO	14 731	116	6 480	44
82	KUMI	9 989	283	9 408	94
83	KYAZANGA	10 633	356	8 088	76
84	KYATIRI	2 262	50	2 149	95
85	KYEGERWA	4 990	0	600	12
86	KYENJOJO	18 121	192	5 580	31
87	KYOTERA	8 584	130	3 876	45
88	LAROPI	6 876	29	2 028	29
89	LORO	8 510	0	750	9
90	LUKAYA	15 287	503	11 382	74
91	LUWERO	26 946	876	13 008	48
92	LWAKHAKHA	6 646	298	6 313	95
93	LYANTONDE	9 424	471	8 953	95
94	MAGAMAGA	12 368	0	300	2
95	MASAFU	5 538	0	600	11
96	MATANY	5 325	50	2 250	42
97	MAYUGE	9 495	0	2 850	30
98	MBIRIZI	8 517	240	6 210	73
99	MIGYERA	1 806	50	1 650	91
100	MIRAMA HILLS	4 914	17	1 164	24

Annex 6-5 List of Small Towns and their coverage *(Towns where "total connections" is zero have no piped water supply and the coverage figures are based on access to protected springs and deep boreholes)* **(Continued)**

No.	Town	Population June 2007	Total Connections	Total population served	Total %age covered
101	MITOOMA	7 236	67	2 490	34
102	MITYANA	68 744	0	4 500	7
103	MOROTO	9 104	166	5 562	61
104	MOYO	16 321	371	13 158	81
105	MUYEMBE	5 441	50	2 250	41
106	MPIGI	20 286	0	750	4
107	MUHANGA	2 720	24	2 584	95
108	NAGONGERA	6 143	140	5 836	95
109	NAKALOKE	4 580	0	1 500	33
110	NAKAPIRIPIT	2 705	0	900	33
111	NAKASEKE	6 603	0	1 800	27
112	NAKASONGOLA	7 389	267	7 020	95
113	NAMALU	5 927	0	1 200	20
114	NAMAGERA	6 310	0	900	14
115	NAMUTAMBA	4 523	0	600	13
116	NANKOMA	2 225	0	450	20
117	NAZIGO	7 056	0	1 800	26
118	NEBBI	51 426	0	1 500	3
119	NGORA	22 168	160	6 822	31
120	NKONKONJERU	12 779	240	7 068	55
121	NTUNGAMO	15 017	415	8 820	59
122	NYADRI	5 772	50	2 100	36
123	NYAKAGYEME	6 665	98	2 982	45
124	NYAPEA	5 711	50	1 500	26
125	PABBO	5 661	0	900	16
126	PAIDHA	28 719	24	6 900	24
127	PAJULE	4 920	0	1 350	27
128	PAKELE	8 077	56	4 788	59
129	PAKWACH	57 838	0	1 800	3
130	PALLISA	27 809	527	14 676	53
131	PATONGO	4 833	0	1 050	22
132	RAKAI	6 874	288	6 530	95
133	RUBUGURI	2 750	15	2 612	95
134	RUKUNGIRI	19 190	547	16 176	84
135	RWASHAMEIRE	5 325	19	456	9
136	RWEBISENGO	5 183	50	3 150	61
137	RWENTOBO	4 241	68	2 010	47
138	RWERERE	4 017	53	1 776	44
139	RWIMI	14 467	3	750	5
140	RYAKARIMIRA	4 793	15	3 450	72
141	SEMBABULE	7 029	120	3 180	45
142	SEMUTO	6 957	128	3 822	55
143	SERERE	4 059	55	3 120	77
144	SIRONKO	9 813	0	2 250	23
145	SUAM	8 506	0	300	4
146	VILLA MARIA	5 573	0	1 050	19
147	WAKISO	11 013	487	10 463	95
148	WOBULENZI	22 196	501	17 310	78
149	YUMBE	16 321	0	2 550	16

Annex 6-6 Water facilities constructed by NGOs/CBOs operating outside emergency areas

	District	Boreholes	B/holes Reh	Shallow wells	S/wells Reh	Springs	Springs Reh	Tapstands	RWH Tanks	Filters	Water Containers	Valley Tanks Const
1	Amuria	12		3	1				29			
2	Soroti	1		6	1				9	170		
3	Kumi	2		4				2	1			
4	Kyenjojo			37		39		8	4			
5	Kamwenge			41		20		9	4			
6	Kabarole			71		25	1	9	12			
7	Bundibugyo			25		15		9	1			
8	Mayuge			11		2	3		3			
9	Mukono				3			3	24			
10	Kamuli			1	21							
11	Kaliro								116			
12	Jinja				4	1						
13	Iganga			2					48			
14	Luwero			22	8				19			
15	Arua			2		7						
16	Maracha - Terego					7			12			
17	Wakiso			128		65			25			
18	Kampala							13	16	15		
19	Mbarara							15	91			2
20	Isingiro								89			
21	Kisoro							4	11			
22	Mbale			3		3						
23	Bugiri		22	3		22	1					
24	Mubende								2		30	
25	Kasese					4		58	6			
26	Masaka	2	1	9					4			
27	Rakai	1		8					12			
28	Sembabule	1		8					4			
29	Bukedea		10	5	12	1	2					
30	Rukungiri					1			89			
31	Kanungu								89			
32	Mpigi	12	10	28		2			34			
33	Kabale					12		60	935	30		
34	Yumbe			6								
35	Tororo	9	4		2	13	3		9		600	
36	Kapchorwa						4		94			
	TOTAL	**40**	**47**	**423**	**52**	**239**	**14**	**190**	**1 792**	**215**	**630**	**2**

Annex 7-1 Trends in functionality rates per districts (Presented as percentage functionality)

	District	2004/5	2005/6	2006/7
1	KALANGALA	67,0	83,8	89,1
2	KIBOGA	81,0	87,0	87,7
3	LUWERO	94,0	91,4	92,5
4	NAKASEKE	n/a	84,5	90,2
5	MASAKA	71,0	68,2	67,7
6	MPIGI	92,0	93,2	95,0
7	MITYANA	n/a	95,0	76,5
8	MUBENDE	81,0	95,0	95,0
9	MUKONO	79,0	95,0	95,0
10	NAKASONGOLA	75,0	75,3	76,5
11	LYANTONDE	n/a	n/a	75,2
12	RAKAI	63,0	68,5	77,7
13	SSEMBABULE	69,0	72,1	62,7
14	KAYUNGA	89,0	89,8	88,4
15	WAKISO	83,0	84,5	85,1
16	BUGIRI	82,0	87,3	79,7
17	BUSIA	86,0	95,0	95,0
18	BUSIKI	n/a	n/a	93,7
19	IGANGA	92,0	92,7	92,0
20	JINJA	98,0	95,0	95,0
21	KALIRO	n/a	90,3	91,1
22	KAMULI	87,0	95,0	95,0
23	BUKWA	n/a	92,7	84,4
24	KAPCHORWA	97,0	95,0	90,3
25	AMURIA	n/a	83,0	88,5
26	KATAKWI	80,0	79,4	81,6
27	BUKEDEA	n/a	n/a	74,1
28	KUMI	88,0	90,0	85,1
29	MANAFWA	n/a	84,7	89,0
30	BUDUDA	n/a	n/a	78,8
31	MBALE	79,0	92,4	92,4
32	BUDAKA	n/a	n/a	93,2
33	PALLISA	80,0	83,3	86,7
34	SOROTI	90,0	88,9	86,5
35	BUTALEJA	n/a	91,3	82,7
36	TORORO	92,0	94,1	94,2
37	KABERAMAIDO	85,0	87,5	88,5
38	MAYUGE	92,0	93,0	91,4
39	SIRONKO	80,0	95,0	95,0
40	ADJUMANI	83,0	89,3	90,0

Annex 7-1 Trends in functionality rates per districts (Presented as percentage functionality) (Continued)

	District	2004/5	2005/6	2006/7
41	OYAM	n/a	n/a	76,2
42	APAC	81,0	86,2	85,9
43	KOBOKO	n/a	65,6	64,5
44	MARACHI	n/a	n/a	85,3
45	ARUA	80,0	85,8	85,4
46	AMURU	n/a	n/a	95,0
47	GULU	79,0	95,0	95,0
48	KITGUM	77,0	83,7	81,3
49	KAABONG	n/a	85,1	82,5
50	KOTIDO	83,0	65,7	64,7
51	ABIM	n/a	n/a	59,6
52	AMOLATAR	n/a	81,0	74,6
53	DOKOLO	n/a	n/a	76,7
54	LIRA	78,0	76,4	77,8
55	MOROTO	83,0	86,0	82,3
56	MOYO	84,0	95,0	81,7
57	NEBBI	83,0	82,8	80,4
58	NAKAPIRIPIRIT	71,0	43,3	49,6
59	PADER	86,0	81,1	85,2
60	YUMBE	78,0	78,2	78,2
61	BUNDUBUGYO	71,0	84,0	71,1
62	BUSHENYI	78,0	83,6	83,9
63	HOIMA	87,0	95,0	95,0
64	KABALE	79,0	78,6	81,0
65	KABAROLE	79,0	81,0	82,7
66	KASESE	82,0	95,0	95,0
67	KIBAALE	88,0	95,0	95,0
68	KISORO	92,0	88,8	95,0
69	BULISA	n/a	n/a	85,4
70	MASINDI	82,0	83,9	84,6
71	IBANDA	n/a	94,2	92,7
72	ISINGIRO	n/a	88,9	92,8
73	KIRUHURA	n/a	89,3	93,2
74	MBARARA	84,0	93,8	87,1
75	NTUGAMO	82,0	91,5	93,0
76	RUKUNGIRI	82,0	84,5	82,1
77	KAMWENGE	60,0	68,3	94,4
78	KANUNGU	68,0	76,1	75,8
79	KYENJOJO	86,0	88,3	83,8

Annex 8-1 Latrine coverage for districts in 2006 and 2007 (Source: HIASS 2007)

DISTRICT	LAT COV (%) 2007	LAT COV (%) 2006	% CHANGE
KABONG	2	2	0
ABIM	2	ND	NA
KOTIDO	2	2	0
NAKAPIRIPIRIT	3	3	0
MOROTO	10	10	0
KITGUM	19	15	4
AMURIA	21	21	0
PADER	38	16	22
BUKWA	40	40	0
BUKEDEA	42	ND	NA
NAMUTUMBA	42	ND	NA
GULU	42	42	0
AMURU	42	ND	NA
LIRA	45	46	-1
BUNDIBUGYO	46	36	10
MASINDI	48	48	0
AMOLATAR	48	46	2
DOKOLO	49	ND	NA
BULISA	50	ND	NA
BUDAKA	50	ND	NA
KOBOKO	50	50	0
MAYUGE	51	49	2
KABERAMAIDO	52	51	1
SEMBABULE	52	53	1
MPIGI	52	67	-15
KUMI	53	53	0
OYAM	53	ND	NA
APAC	53	55	-2
KALANGALA	54	48	6
SOROTI	55	59	-4
KATAKWI	55	56	-1
LUWERO	55	66	-11
ARUA	57	50	7
KAPCHORWA	57	53	4
IGANGA	57	48	9
MARACHA	57	ND	NA
MBALE	57	57	0
KIBOGA	58	53	5
NEBBI	58	52	6
BUDUDA	58	ND	NA
KAMULI	58	56	2
ISINGIRO	59	74	-15

Annex 8-1 Latrine coverage for districts in 2006 and 2007 (Source: HIASS 2007) (Continued)

DISTRICT	LAT COV (%) 2007	LAT COV (%) 2006	% CHANGE
KAYUNGA	59	74	-15
ADJUMANI	61	66	-5
SIRONKO	64	56	8
BUTALEJA	64	63	1
MANAFWA	64	64	0
YUMBE	65	51	14
BUGIRI	65	55	10
MUBENDE	67	67	0
NAKASEKE	67	66	1
HOIMA	68	64	4
KIBALE	68	65	3
KAMWENGE	69	60	9
PALLISA	70	67	3
NAKASONGOLA	70	66	4
KANUNGU	70	90	-20
KISORO	71	65	14
MOYO	71	71	0
LYANTONDE	71	ND	NA
JINJA	71	71	0
MITYANA	72	69	3
WAKISO	72	65	7
TORORO	73	67	6
KYENJOJO	75	75	0
MBARARA	76	74	2
KIRUHURA	76	74	2
RAKAI	76	66	10
BUSIA	78	74	4
KALIRO	79	56	23
KASESE	80	75	5
IBANDA	80	79	1
NTUNGAMO	86	88	2
MASAKA	86	82	4
KABALORE	86	86	0
MUKONO	86	75	11
KABALE	89	87	2
BUSHENYI	91	80	11
KAMPALA	94	94	0
RUKUNGIRI	98	95	3

Annex 11-1 Mean sub-county deviation from the district average – an explanation

The indicator is based on the number of people per improved water point and **not** the proportion of the population that has access to safe water. The indicator helps to determine deviation between the number of persons per improved water point in the district and that of the sub counties.

To determine the indicator:

Step 1 – calculate how many rural people there are per improved water source in an entire District (ie District rural population divided by number of improved water sources).

Step 2 - calculate how many rural people there are per improved water source in each sub-county (ie sub-county rural population divided by number of improved water sources in the sub-county)

Step 3 – calculate the difference between the District people per improved water point and the sub-county people per improved water point

Step 4 – calculate the absolute value of the difference obtained in step 3.

Step 5 – add up the absolute values and divide by the number of sub-counties.

The table below uses data from Apac District as an example.

			Step 1 & 2	**Step 3**	**Step 4**
Subcounty (S/C)	Population (June 2007)	Total Number of Improved Sources	Average number of persons per improved source	District average minus S/C averages.	Absolute value of difference between S/C and District averages
ABOKE	39,680	51	778	-189	189
AKALO	23,598	80	295	294	294
ALITO	59,692	100	597	-8	8
AYER	37,171	53	701	-112	112
BALA	35,791	42	852	-263	263
ABONGOMOLA	31,080	5	6,216	-5,627	5,627
ADUKU	31,346	96	327	262	262
CHAWENPE	24,627	59	417	171	171
INOMO	25,821	51	506	83	83
NAMBIESO	38,836	49	793	-204	204
AKOKORO	31,607	66	479	110	110
APAC	41,503	46	902	-313	313
CEGERE	29,046	65	447	142	142
IBUJE	28,974	50	579	9	9
	478,772	813	589		
Step 5. Mean sub-county deviation from the district average ie sum of sub-county deviation/no of sub counties					556

Note: *The higher* ***the numerical value, the higher the inequity; the lower numerical vale indicates better equity.***

Annex 11-2 Trends in Mean Sub-County deviation from the District Average

Equity					
Districts	**2002/2003**	**2003/2004**	**2004/2005**	**2005/2006**	**2006/2007**
CENTRAL DISTRICTS					
Nakasongola	152	970	727	715	692
Lyantonde	n/a	n/a	n/a	n/a	113
Rakai	544	691	703	715	801
Sembabule	268	279	364	309	308
Wakiso	686	686	407	415	297
Mpigi	350	140	333	540	208
Kalangala	402	249	288	168	153
Mukono	454	609	287	602	421
Mubende	744	260	255	222	230
Mityana	n/a	n/a	n/a	358	233
Masaka	604	190	199	143	132
Kiboga	100	337	189	176	175
Luwero	181	163	163	97	117
Nakaseke	n/a	n/a	n/a	238	286
Kayunga	445	91	76	54	46
EASTERN DISTRICT					
Bugiri	1065	2090	1020	980	684
Jinja	829	263	261	260	250
Mayuge	477	216	210	547	224
Kamuli	397	163	196	161	127
Kaliro	n/a	n/a	n/a	75	56
Mbale	489	122	165	213	219
Manafwa	n/a	n/a	n/a	222	235
Sironko	385	153	151	126	115
Pallisa	559	155	139	112	93
Tororo	456	160	120	127	196
Butaleja	n/a	n/a	n/a	97	87
Bududa	n/a	n/a	n/a	n/a	195
Namutumba	n/a	n/a	n/a	n/a	66
Budaka	n/a	n/a	n/a	n/a	143
Iganga	186	186	114	108	90
Bukedea	n/a	n/a	n/a	n/a	62
Kumi	223	91	104	103	83

Equity					
Districts	**2002/2003**	**2003/2004**	**2004/2005**	**2005/2006**	**2006/2007**
Katakwi	418	78	97	77	76
Amuria	n/a	n/a	n/a	102	84
Kapchorwa	242	91	93	73	71
Bukwo	n/a	n/a	n/a	58	37
Soroti	255	134	87	78	72
Kaberamaido	168	60	60	61	49
Busia	262	25	56	56	61
NORTHERN DISTRICTS					
Kotido	1891	1226	1214	388	204
Kaabong	n/a	n/a	n/a	5,775	1203
Abim	n/a	n/a	n/a	n/a	223
Nakapiripirit	636	658	553	270	397
Pader	-	544	533	381	170
Moyo	826	434	446	481	348
Yumbe	472	334	353	381	411
Adjumani	273	41	225	63	59
Kitgum	n/a	177	177	4,068	4092
Apac	359	339	174	862	556
Maracha/ Terego	n/a	n/a	n/a	n/a	83
Arua	317	154	156	156	218
Koboko	n/a	n/a	n/a	87	84
Moroto	332	332	153	150	203
Dokolo	n/a	n/a	n/a	n/a	102
Oyam	n/a	n/a	n/a	n/a	97
Lira	229	147	152	135	154
Amolatar	n/a	n/a	n/a	60	112
Amuru	n/a	n/a	n/a	n/a	199
Gulu	-	155	147	141	69
Nebbi	301	117	82	82	133
WESTERN DISTRICT					
Kisoro	91	393	398	422	1408
Mbarara	648	402	390	280	396
Isingiro	n/a	n/a	n/a	436	439
Kiruhura	n/a	n/a	n/a	276	259
Ibanda	n/a	n/a	n/a	210	206
Kamwenge	164	376	329	340	129

Equity					
Districts	**2002/2003**	**2003/2004**	**2004/2005**	**2005/2006**	**2006/2007**
Kyenjojo	426	426	167	130	87
Kasese	509	153	155	143	133
Kabarole	155	162	151	154	109
Buliisa	n/a	n/a	n/a	n/a	189
Masindi	295	147	144	132	98
Bundibugyo	188	125	137	145	109
Hoima	343	106	123	124	117
Kibaale	154	118	108	113	103
Bushenyi	162	72	74	106	83
Ntungamo	136	63	62	56	52
Rukungiri	55	64	59	59	44
Kabale	-	-	-	-	56
Kanungu	159	38	40	39	42

Source: District Reports

Annex 12-1 Community level training by NGOs/CBOs operating outside emergency areas

	District	Sc. Tr. Trained	Sch H. Clubs trained	WUC trained	HPM Trained (M)	HMP Trained (F)	HPM Equiped
1	Amuria	8	4	25	12		
2	Apac		54				
3	Kyenjojo	1	5	85	5		
4	Kamwenge	1	5	61	7		
5	Kabarole	2	62	101	5		
6	Bundibugyo		3	52	4		
7	Kamuli	87	30	18			
8	Mayuge	2	2	13		1	1
9	Mukono	4		50			
10	Iganga	2	2	8			
11	Jinja	12	4				
12	Luwero			2			
13	Arua			168			
14	Nebbi		1	398			
15	Maracha - Terego	24		16	4	2	6
16	Yumbe		3	10	3	1	
17	Koboko	30		19			
18	Wakiso	91	15	174	3		
19	Kampala		10	46	6		1
20	Mbarara	30			6		
21	Isingiro				6		
22	Kanungu		2	13			
23	Kisoro	6					
24	Mbale			11			
25	Mubende		7	22	5	1	3
26	Kasese			5			
27	Kamwenge	40		8			
28	Rakai		9	29			
29	Soroti	5		21			
30	Kumi			36	24	23	
31	Rukungiri			14			
32	Wakiso						
33	Mpigi		4	13			
34	Ntungamo			10	12	3	13
35	Tororo	24	24	23	29	1	15
	TOTAL	**369**	**246**	**1 451**	**131**	**32**	**39**