Government of Uganda

Ministry of Water, Lands and Environment

Water and Sanitation Sector Performance Report 2005

September 2005

Foreword

Government of Uganda is implementing the Poverty Eradication Action Plan (PEAP), which articulates a national vision for wiping out mass poverty by 2017. Water as a basic need and resource for social and economic development is a key factor in ensuring social transformation. Human life, as well as the flora and flora are dependent on water, thus "Water is Life'.

Inadequate water supplies are both a cause and an effect of poverty. Those without adequate and affordable water supplies are mainly the poor; and the effects of inadequate water supply like disease burden, time and energy spent in water collection, high costs worsen their plight. Adequate sanitation and good hygiene practice is essential for the full benefits of water supply services.

Over the past years, a great deal of significant headway has been made in providing basic water and sanitation services to the population. The coverage of water supply and sanitation in rural areas has increased from 49.8% in 2000 to 61.3 % in June 2005. However, the challenges for provision of water and sanitation services have greatly increased due to vibrant economy, high population growth that stands at 3.3 % per annum, urbanization and environmental degradation, among others.

The Uganda Water and Sanitation Sector Performance Report, 2005 provides an overview of the activities and achievements of the Ugandan Water and Sanitation Sector. It is my sincere hope that this report will be one of the guiding factors for my ministry in collaboration with other line ministries, local governments, development partners and other stakeholders to improve service delivery and achievement our sector targets.

Government of the Republic of Uganda recognizes and appreciates all financial and technical support provided by the development partners and other stakeholders. The role played by the communities, NGO's and the private sector is also acknowledged.

Hon Kahinda Otafiire (Maj. Gen.)

MINISTER

Ministry of Water, Lands and Environment

Executive Summary

Introduction. This is the third annual performance report for the Uganda water and sanitation sector. It presents a detailed analysis of the status of the sector in 2004/5 and trends. It acts as a focus for the continued improvement of sector performance. The report has been produced through combined efforts of officials from the sector ministries and UWASNET.

This 2005 report presents an overview of sector performance as measured against ten golden indicators which cover the themes of access, functionality, investment, hygiene and sanitation, water quality, water for production and equity. The golden indicators cover a range of performance themes and enable a balanced and thorough analysis of sector performance. The indicators are referred to in the Government of Uganda's Poverty Eradication Action Plan (PEAP) and are also used as part of the monitoring and reporting processes under the Government's Fiscal Decentralisation Strategy (FDS).

Resource allocation during 2004/05. The total budget for the sector during 2004/05 was UShs 156 bn of which UShs 101 bn was released and UShs 93 bn was spent. The major source of the difference between budgets and amounts released was donor funding (UShs 98 bn budgeted and UShs 46 bn released). The sub-sector budget allocations under MTEF / sector ceilings were apportioned as follows: rural water and sanitation - 48%; urban water and sanitation – 33% ; water resources management – 6%; water for production – 4%; , project management support - 6% and urban reform project - 3%. In addition to the MTEF, donor funds of UShs 46 bn were allocated to urban water supply and sanitation.

Investment Requirements. In the case of rural water supplies, high population growth means that the PEAP coverage target of 77% by 2015 will not be met if funding under the District Water and Sanitation Conditional Grant (DWSCG) continues at UShs 32 bn per year. For achievement of of 77% rural coverage by 2015, an estimated annual minimum investment of UShs 53 bn is required.

Overall performance assessments for 2004/05. Three other key sources of data are available to assess overall sector performance during the year – the Poverty Action Fund (PAF) monitoring reports, the National Service Delivery Survey (NSDS) and the Tracking Study.

The MWLE PAF monitoring reports provide generic sector issues and constraints to good performance such as functionality assessments, spare parts availability, status of water user committees and staff vacancies, but because PAF monitoring visits are typically limited to one day in each district, it is difficult to make detailed analysis and draw meaningful overall conclusions.

The 2004 NSDS concluded that 60% of rural and 88% of urban dwellers obtain drinking water for protected sources. Rural dwellers spend between 63 and 93 minutes to collect water depending on the season, whilst for urban dwellers the range was found to be between 42 and 60 minutes. The survey also concluded that 30% of rural households and 69% of urban households pay for water services.

The rural water and sanitation sub-sector provided improved water supplies for over 680,000 people through the DWSCG, another 66,882 people in seven IDP camps and 39,092 in seven rural growth centres. 758 springs were protected, 971 shallow wells constructed, 563 deep boreholes constructed, 279 boreholes rehabilitated and 408 gravity flow scheme tap stands installed. In addition other efforts by NGOs/CBOs were made to improve water supplies in rural areas and IDP camps.

The urban sector is sub-divided into large and small towns. For large towns, NWSC provided 22,218 new water connections and produced 57 million cubic meters of water. Service coverage is stated as 68% and collection efficiency as 89%. Recently, NWSC is taking a more active role in supplying water to the urban poor, reviewing connection policies and tariff

rates. Small towns completed six schemes serving over 55,000 people and designed to benefit over 129,000 people.

The water resources management sub-sector collected 1,167 water quality samples, and recorded 993 surface water and 863 ground water readings. 18 water permit holders were monitored and 6 permits renewed. Monitoring of the water levels of Lake Victoria was also carried out. The lake level has fallen from 1,135.1m above mean sea level in May 2002 to 1,133.9m by March 2005. This drop of 1.2 metres is equivalent to the loss of about 82.6 billion cubic metres of lake storage.

Summary of performance as measured against the 'golden' indicators in 2004/5

The following table sets out performance trends and targets as measured against the 10 'golden' indicators of the water and sanitation sector.

Table 1. Golden indicators – targets and achievements

Golden indicators			2004/5 Achievements	Targets		
				2004/5	2006/7	2014/15
1	% of people within 1.5 km (rural) and 0.2 km (urban) of an improved water source	Rural	61.3%	58	62	77
		Large Towns	67%	70	75	100
		Small Towns	36%			
2	% of improved water sources that are functional at time of spot-check	Rural	82%	82	85	90
		Urban	no data	83	90	95
		WfP	no data	Targets to be set		
3	Average cost per beneficiary of new water and sanitation schemes (USD)	Rural	$31	45	40	40
		RGCs	$56	58	55	50
		Small Towns	$72	80	75	75
4	% of people with access to improved sanitation (household and schools)	Rural HHs	57%	58	62	77
		Urban HHs	no data	77	92	100
		Schools	no data	82	100	100
	Pupil to latrine/toilet stance ratio in schools		57:1	57:1	40	40
5	% of water samples taken at the point of water collection, waste discharge point etc that comply with national standards	Protected	no data	95	95	95
		Treated	no data	100	100	100
		Wastewater	no data	Targets to be set		
6	% increase in cumulative storage capacity availability of water for production		0	0	3.1	3.1
7	Mean *Parish* deviation from the District average in persons per improved water point	Rural	n/a	Targets to be set		
		Urban	n/a	Targets to be set		
8	% of people with access to and using hand-washing facilities	Households	Not measured in 2004/5	14	23	50
		Schools		Targets to be set		
9	% of water points with actively functioning Water and Sanitation Committees		Not measured in 2004/5	Not measured in 2004/5		
10	% of Water and Sanitation Committees/Water Boards with women holding key positions	Rural	Not measured in 2004/5	Targets to be set		
		Urban		Targets to be set		

Access to improved water supplies. For rural households, the estimate of the proportion of Ugandans with access to improved water is based on an estimated average number of users per technology. As of June 2005 the coverage was estimated to be 61.3%. The approach based on the estimated number of people who live within 1.5km of an improved water point gives an access rate of 55.5%. Overall, in the last ten years the trend in rural access has been

upwards from around 35% in 1995 to around 60% now. However, coverage increase over the last five years has only just kept ahead of population growth.

This is the second year in which district comparisons of rural access have been analysed. Not surprisingly, there are still significant differences in access rates between districts, ranging from little more than 20% to more than 80%. .

The access to improved water supply in each of the 143 small towns (managed by private operators and/or water authorities on behalf of DWD) ranges from less than 35% to more than 80%. These figures are estimated based on an assumed number of users for each type of connection for the town water supply scheme. The average water access for all these small towns is estimated to be 36% but data and calculation methods need to be reviewed. .

The coverage in the 19 large towns under NWSC is an estimate based on the total amount of domestic water billed divided by assumed per capita consumption. The towns served by NWSC now have access rates of 68%, up from around 65% in 2004 and 58% in 2001. However, this masks a range from around 35% in Soroti to 80% in Mbarara.

Functionality of existing water facilities. For rural areas, functionality rates are reported on a quarterly basis by districts. The overall functionality rate of rural water points reported in this way increased from 70% in 2002/03 to 80% in 2003/04 to 81% in 2004/05. 23 districts have functionality rates below the national average of 81%. Districts with reported functionality rates above 90% are Jinja, Kapchorwa, Luwero, Mayuge, Iganga, Mpigi, Tororo and Kisoro.

In urban areas (small and large towns) functionality is defined as the percentage of active connections. The overall functionality rate is small towns for 2004/05 is 87%, rising from a reported 80% in 2003/04 and higher than around 84% in 2002/03. Part of the increase in functionality this year might be due to less rigour in the disconnection of non-paying customers. Active connections in the large NWSC towns for 2004/05 average 85%, up from around 82% the previous year. Functionality rates in individual towns range from less than 70% in Soroti to almost 100% in Mbale and Bushenyi / Ishaka.

Per capita investment costs. In rural areas, the average per capita investment cost of supplying an additional person with water varies significantly from district to district - over UShs 100,000 in Nakapiripirit, Sembabule and Yumbe; less than UShs 20,000 in Bushenyi, Tororo, Hoima, Kabarole, Luwero, and Sironko. The average total rural investment cost in 2004/05 was UShs 52,929 compared to UShs 47,500 in 2003/04. Preliminary analysis of available data seems to indicate that districts which are water stressed (low coverage) tend to have higher per capita investment costs. The major reason for this is the limited technology options available (usually deep boreholes and valley tanks which are more expensive).

An estimated 3% (UShs 780m) of the DWSCG for 2004/05 was spent on sanitation activities. According to UWASNET data, 23 NGOs spent UShs 700m on sanitation over a 6 month period. Given that there are up to 100 NGOs investing money throughout the year, it is likely that NGO/CBO expenditure on sanitation is in excess of amounts invested from the DWSCG.

The average per capita investment cost for small towns completed in 2004/05 was UShs 120,545, ranging from UShs 50,718 in Matany to UShs 150,413 in Masindi town. Towns which only involved rehabilitation of existing schemes were not included in the analysis. The average per capita investment cost for rural growth centres completed in 2004/05 was around UShs 95,665. This is within the targeted per capita investment cost of UShs 101,500. Per capita investment costs ranged from UShs 84,013 in Mahyoro to UShs 126,377 in Ciforo.

61 small towns have operational piped water supplies of which 57 are operated by the private sector and four by the town councils. The average cost of producing water in small towns (UShs 1,282 per cubic metre) is three times that of large towns (UShs 408 per cubic metre). Further investigation is required into why this is the case and lessons should be learned for reducing average costs of providing water supply to small towns in the future.

15 of the 19 large towns operated by NWSC have an average unit cost of supplying water of UShs 408 per cubic metre, varying from UShs 282 in Kampala to UShs 1,386 in Bushenyi / Ishaka. Large towns are able to wholly meet their operation and maintenance costs from revenue collected as opposed to small towns which on average collect enough to only cover 76% of these costs (although there is great variation between towns).

The 2004 Tracking Study compared the average cost of providing water in Uganda with some neighbouring countries (for a sample of centrally managed projects). The data presented showed an average per capita cost of UShs 85,000 to 170,000 in Uganda, compared to UShs 68,000 to 136,000 in Kenya, UShs 68,000 t0 119,000 in Tanzania and UShs 102,000 to 170,000 in Ghana. Although some of the higher costs in Uganda can be explained by factors external to the water and sanitation sector (such as taxation rates on imported spare parts) there does appear to be scope for reducing average costs in Uganda.

Hygiene and sanitation. According to the annual Health Sector Performance Report for 2003/04, national latrine coverage stood at 57% in June 2004. The figures vary considerably throughout the country from 94% in Rukungiri to 2% in Kotido. Between 2002/03 and 2003/04, 29 districts increased their latrine coverage with increases of over 20% in Busia, Kabarole and Mayuge. This can partly be attributed to effective home improvement campaigns and active District Water and Sanitation Committees, but further assessment of causal factors should be undertaken and lessons disseminated to other districts. On the other hand, 11 districts experienced a decline in latrine coverage – Wakiso and Rakai had the highest stated decline with 18% and 10% respectively. Data should be checked for accuracy and steps taken to reverse these downward trends in future.

The 2004 National Service Delivery Survey (NSDS) found that 82% of rural households had access to a pit latrine. However, the Ministry of Health figures are deemed to be more accurate as health assistants collect this data and these officers also spend time inspecting latrines. The NSDS stated that 83% of urban households have access to a pit latrine, but again such data needs to be treated with caution. In addition, in future data needs to be collected to measure evidence of the actual use of latrines.

Latrines are not sufficient by themselves to break the faecal-oral route of disease transmission and to ensure maximum health benefits. Access to and use of hand-washing facilities are critically important. There is limited data to measure hand washing, but data available to the Ministry of Health suggests that only 25% of rural households and 40% of urban households actually have hand-washing facilities. Actual usage rates are likely to be significantly lower than this. For example, none of 57 households visited in Bushenyi and Sembabule districts showed any evidence of hand washing at all. This needs to be addressed by the sector.

Access to good sanitation in schools is a key issue not just to help ensure a healthy environment for children, but to encourage children (especially girls) to attend school. The national pupil to latrine stance ratio for 2004 is estimated at 61:1. This significantly exceeds the national target of 40:1 and suggests that a lot of investment is still required to provide adequate latrines in schools. There are also concerns about hand washing in schools. For example, in 15 schools visited in Bushenyi, only 40% had hand-washing facilities and only 26% had soap and water and evidence of usage. The funding and promotion of good hygiene in schools (building on good practices which do exist) should be a key sector priority as it could be expected to lead to significant health and well-being benefits to pupils.

Water quality. It is still not possible to get data on the percentage of water samples complying with national standards on a district-by-district basis. Fieldwork undertaken in both Rukingiri (with 94%) sanitation coverage) and Gulu (with 42% sanitation coverage) revealed significant falls in the quality of water by about 25% from source to the household (drinking). This is likely to be due to poor hygiene and cultural practices for water storage and dinking. It can be concluded that more work needs to be done to promote the use of a safe water chain in households.

The quality of water supplied in urban towns varies greatly depending on the type of water and the private operator concerned. All large town water supplies under NWSC are reported to provide good quality water.

Pollution is becoming an increasing problem in Lake Victoria. It has been found that 72% of this is caused by urban centres, 13% by industries and 15% by fishing villages. Municipal wastewater treatment and disposal for the NWSC towns is the responsibility of NWSC. In many of the NWSC towns with sewerage systems, the treatment of wastewater is inadequate and effluents do not meet the required limits. Most industries have no wastewater treatment facilities and effluents do not meet standards.

Out of 1,280 manufacturing industries, only 76 have applied for wastewater discharge consent and a mere 45 have been issued permits. Moreover, there is no enforcement of the respective permit conditions. Although it can be argued that not all such industries produce waste water, it is vital to establish an inventory of potential wastewater applicants for the regulatory function to be carried out to stem further damage to the environment. There is a need to identify pollution sources, to better dispose of solid waste, to raise awareness of better industrial waste treatment, to improve effluent treatment plants, to improve hygiene awareness of communities, and to implement and enforce wastewater regulations. This will not be easy to do, but is essential in light of the deteriorating quality of water in Lake Victoria and elsewhere in Uganda.

Water for production. The cumulative storage capacity for water for production was estimated as 13 million cubic metres in 2004/05, the same as for 2003/04. The increase during the year has therefore been zero. No valley tanks or dams were constructed during the year and none were rehabilitated. Resources during the year were used to cover outstanding costs for surface water reservoirs contracted during 2003/04.

The Ministry of Agriculture prepared a draft irrigation strategy during the year, the National Livestock Productivity Improvement project was launched and plans were made to combine domestic and livestock water supply in some districts.

Equity of water provision. The equity of water point distribution within districts is measured as the average parish deviation from the district average in the number of people per improved water point. Two districts can have the same overall improved water access rates, but this can mask big differences in access rates within the district – this indicator measures the extent of these differences.

The districts in which water supply is most inequitably distributed are Kotido, Bugiri, Nakasongola and Rakai. However, the first three of these have demonstrated improvements in equity during 2004/05. Districts that have shown large reductions in equity during the year include Wakiso and Mpigi.

Factors that affect the equitable distribution of water points were found to include the allocation of resources based on demand not actual need, local political considerations during the allocation process, pressures to spend money quickly to avoid return of the funds to the central consolidated fund, the policies of NGO water point providers, hydro-geological factors, and ease/cost of supplying water.

Equity is a key issue to address if the sector policy of 'some for all, not all for some' is to be followed. Too little has been done to address equity issues in the past. It is important to keep track of equity changes within districts and to challenge districts that show high and / or falling equity levels. More work needs to be done on how to more equitably allocate resources between districts and within districts. In short, an increased focus on equity should be one of the key sector priorities in future.

Gender issues. Gender is considered as a key aspect of management of water and sanitation projects. Monitoring visits to districts found that women were well represented on the water and sanitation committees - overall membership of women in WSCs was 48%, 43% and 45%

in Rukungiri, Sembabule and Gulu respectively. Women and men are considered as bringing different qualities and expertise in management of water facilities

Financial issues for O&M of water facilities. Regular collection of user fees is considered as a key for ensuring O&M, although it is still a challenge in many communities. Poor or non-enforcement of the critical requirements, especially community contributions, is widespread. However, there are cases where NGOs have found innovative ways of collecting and using O&M funds, e.g. revolving loans, fines, donations from well-wishers, local fundraising and tapping into the 25% of local revenue retained by the LC1. In some cases, mixed messages by politicians (especially in election years) as well as NGOs and different Government/donor projects mitigate against good O&M practices and financial contributions by communities in particular.

The late release of funds to the Districts and the requirement to return unspent funds to MFPED at the end of the financial year is a major constraint to O&M - in the rush to spend funds, there is a tendency to neglect the software activities like community mobilisation and collection of community contribution towards capital costs.

Overall conclusions and recommendations

(i) Definition and Calculation of Access

Currently, rural access to safe water is defined as an improved water source within 1.5 km of the home. ***It is recommended that the walking distance of 1.5 km is reconsidered and methods used to compute coverage are improved.***

Given the fact that rainwater harvesting is an important technology for water supply in Uganda, ***it is recommended that mechanisms are developed to include it in the computation of coverage.***

Small and large (NWSC) towns have different ways of calculating access. ***It is recommended that the method for estimating access to safe water in urban areas is reviewed and RGCs be clearly classified as urban or rural. .***

When calculating access, consideration should be given to households which are currently considered as un-served. ***It is recommended that the sector considers how to incorporate sources which have been improved by users themselves when considering access to safe water.***

(ii) Water Resources Regulation

Although poor water quality may be having adverse affects on people's health there is no mechanism for systematic monitoring of drinking water quality. ***It is recommended that the water quality monitoring strategy is implemented.***

Out of 1,280 manufacturing industries, only 76 have applied for wastewater discharge permits and 45 have been issued. In addition there is no inventory of industries which produce waste water. ***It is recommended to compile an inventory/database of all potential producers of wastewater who require a permit(s) under the present law.***

It is recommended to undertake awareness raising to sensitise industrialists about the importance of wastewater treatment before discharge into the environment. Municipalities should have effluent treatment facilities and ensure compliance to environmental standards and ensure proper disposal and management of solid wastes.

The permit for Nalubaale,and Kiira dams has been renewed. ***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.***

(iii) Sanitation and Hygiene

There significant differences in access to latrines around Uganda and sanitation access in schools is below the target. Also, evidence collected so far suggests that hygiene practices in households are inadequate. The performance as measured against the hand-washing indicator is the most worrying of all the indicators.

It is recommended that a higher proportion of sector resources are devoted to hygiene and sanitation. The theme of the 2005/06 sector performance report could be sanitation and hygiene. More could be done to identify, disseminate and replicate good practices as well as an incentive / penalty system to ensure better sanitation and hygiene performance in the future.

It is recommended that all sectors (water, health, education and local government) identify budget lines for sanitation and hygiene.

There is a need to standardize key sanitation terminologies and define minimum standards. Furthermore, there is need to improve the quality of data and avoid controversy over its validity.

(iv) Water for Production

In comparison to the other water and sanitation sub-sectors, water for production lags behind conceptually, and in terms of institutional development, demand identification, planning community participation, construction and operation and maintenance (O&M).

It is recommended that institutional roles and responsibilities are clarified and/or agreed. The coordination between stakeholders needs to be improved.

It is recommended that a comprehensive database of all existing water for production facilities is established. This needs to include all facilities constructed by all actors investing in water for production.

(v) Investment and Allocation

The different sub-sectors have developed investment plans to meet their targets but the sub-sector investment plans have not yet been revised or integrated into a comprehensive sector investment plan.

It is essential that the consolidated sector investment plan is finalised setting out allocation criteria and funding priorities between and within the sub-sectors.

A key sector objective is '*some for all not more for some'* but there are inequalities in the provision of water and sanitation services both between districts and within districts in Uganda.

It is recommended that the resources allocation mechanism between and within districts be reviewed with the aim of making allocations more equitable.

NGOs/CBOs are making a significant contribution to increase access to safe water and sanitation in Uganda.

It is recommended that Government and, in particular key sector donors should boost NGO/CBO involvement by providing mechanisms to enable them to access more funds.

The water and sanitation services in many of the IDP camps are still insufficient.

It is recommended that investment into the provision of water and sanitation in the IDP camps is increased.

(vi) Improving sector performance

Previous sector monitoring and review work has tended to be very broad and has involved short visits to many parts of Uganda. Work undertaken by MWLE (PQAD), DWD, MoH,

consultants and others is not well coordinated, overlaps and tends to be inadequate to make meaningful conclusions.

It is recommended that future sector monitoring and review work is better coordinated, is much more focused in fewer parts of the country, is based on an assessment of poor and good performers (as measured by absolute and incremental performance levels using the 'golden' indicators). The information should be analysed and reflected upon by senior management in order to improve overall sector performance.

Linked to improved performance reporting is the need to more systematically find out what is causing better performance and what can be done to disseminate learning more widely.

It is recommended that more effort is made to disseminate the good operational practices that are leading to good performance, through district assemblies, guidance notes, articles, exchange visits and other mechanisms.

NGOs/CBOs are making a significant contribution to increase access to safe water and sanitation in Uganda.

It is recommended that efforts of UWASNET to capture NGO inputs in the sector should be further strengthened.

Some very interesting results have been obtained from the analysis of district data on the indicators. However there are concerns regarding the accuracy of the data.

It is recommended that in 2005/06, data supplied by districts under the Fiscal Decentralisation Strategy becomes the primary source of data used to measure performance against the golden indicators and that monitoring mechanisms are strengthened to check the accuracy of the data that is provided.

Current analysis of urban functionality considers active connections only. This focuses on the user and does not include sufficient analysis of supply related issues and customer care.

It is recommended that entire water system is to be considered in analysis of functionality.

The indicator used to measure equity is rather complicated and difficult to relate to translate into physical realities. This makes it a difficult tool to be used for planning purposes and it does not seem to be readily applicable in the urban setting.

It is thus recommended that the equity indicator be simplified for next year's sector performance.

Acronyms and Glossary

CBO	Community Based Organisation
DFID	Department for International Development
DHI	District Health Inspector
DWD	Directorate of Water Development
DWO	District Water Office(r)
DWSDG	District Water and Sanitation Development Grant
EHD	Environmental Health Division
FDS	Fiscal Decentralisation Strategy
FDS	Fiscal Decentralisation Strategy
GFS	Gravity Flow Scheme
GoU	Government of Uganda
HIASS	Health Inspectors Annual Sanitation Survey
HSSP	Health Sector Strategic Plan
HWF	Hand Washing Facilities
IDAMC	Internally Delegated Area Management Contract
IDP	Internally Displaced Person
JPF	Joint Partnership Fund
JSR	Joint Sector Review
KCC	Kampala City Council
LGDP	Local Government Development Programme
MDG	Millennium Development Goal
MoES	Ministry of Education and Sport
MoFPED	Ministry of Finance, Planning and Economic Development
MoGLSD	Ministry of Gender, Labour and Social Development
MoH	Ministry of Health
MoLG	Ministry of Local Government
MoU	Memorandum of Understanding
MWLE	Ministry of Water, Lands and Environment
NACES	National Advisory Committee on Ecological Sanitation
NGO	Non Governmental Organisation
NSDS	National Service Delivery Survey
NUSAF	Northern Uganda Social Action Fund
NWSC	National Water and Sewerage Corporation
O&M	Operation and Maintenance
OPM	Office of the Prime Minister
PDU	Procurement and Disposal Unit of the Ministry of Water, Lands and Environment
PEAP	Poverty Eradication Action Plan
PMF	Performance Measurement Framework
PQAD	Planning and Quality Assurance Department
RGC	Rural Growth Centre
RUWASA	Rural Water And Sanitation (Eastern Uganda) Project
RWSS	Rural Water Supply and Sanitation
SIP	Sector Investment Plan
SPHERE	Humanitarian Charter and Minimum Standards in Disaster Response
SWAp	Sector Wide Approach
SWG	Sanitation sub-sector Working Group
SWIP	South West Integrated Health and Water Project
TEC	Technical Evaluation Committee
ToR	Terms of Reference
TSU	Technical Support Unit
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic and Household Survey
UEGCL	Uganda Electricity Generation Company Limited

UfW	Unaccounted for Water
UNHS	Uganda National Household Survey
UN-OCHA	United Nations Organisation for Humanitarian Affairs
UShs	Uganda Shillings
UWASNET	Uganda Water and Sanitation NGO Network
UWSS	Urban Water Supply and Sanitation
VfM	Value for Money
WES	Water and Environmental Sanitation
WFP	Water For Production
WRM	Water Resources Management
WSCG	Water and Sanitation Conditional Grant
WSS	Water and Sanitation Sector
WSWG	Water and Sanitation sector Working Group
ZPCs	Zonal Performance Contracts

Exchange rate: $1 = UShs 1700

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Chapter 1

Introduction

1.1 Introduction

This is the third Water and Sanitation Sector Performance Report for Uganda. The report draws together and analyses extensive information from four sub-sectors, namely rural, urban, water for production and water resources. The themes of access, functionality, investment, hygiene and sanitation, gender, community management and equity are considered in detail. The report has been prepared with information from Government and NGOs and thus provides a comprehensive overview of the sector.

Sector performance reporting should be viewed as an ongoing process. Work still remains, especially to agree on basic definitions for some of the indicators[1] and improve further on data collection and management. However, the quality of the reports and level of analysis has improved considerably over the years. In 2005, two new indicators (for gender and community management) have been added. This year's report therefore considers ten golden indicators.

Availability of reliable data for both water and sanitation remains a major challenge for analysis and consequently monitoring and assessment of sector performance. Several inconsistencies were found during the process of compiling this report. Specific recommendations have been given to address these issues for the rural and urban water sub-sectors. Water for production does not have a database of existing facilities, making analysis of their performance difficult. A database of existing industries which produce waste water is also lacking. It is hoped that the on-going MIS review for DWD/MWLE will address most of the shortcomings or at least provide concrete recommendations on how they should be addressed.

A lot of work remains to be done to enable accurate and timely data analysis and reporting for school and household sanitation. The three central ministries with responsibilities in the area of sanitation need to work more closely to enable this to happen. Furthermore, there is little data available for urban sanitation/sewerage for both NWSC towns and the small towns managed by water authorities and private operators. The report is therefore not detailed enough in the area of sanitation.

The 2005 report adds significant value to the previous annual sector reports by addressing key issues facing the sector in more depth. A separate chapter on functionality of rural water supplies is included, which examines underlying causes of good and poor functionality, and sets out mechanisms for improvements. Findings of a short study on the safe water chain are included (section 4.6) in view of the PEAP (MoFPED, 2004a), which states that there is increasing concern that despite improvements in access to safe water supplies, the water quality at point of

[1] e.g. what is meant by a functional water facility, coverage as applicable for urban water supply, what constitutes an improved or basic sanitation facility.

consumption is frequently diminished as a result of poor domestic hygiene practices in maintaining a safe water chain.

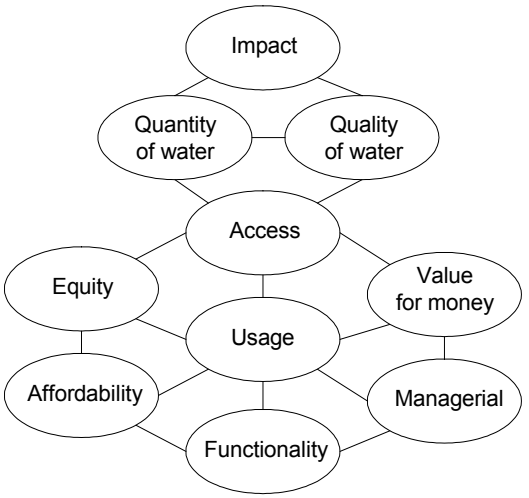
The report is structured as follows. Chapter 2 provides an overview of the sector development framework, policies and emerging policy issues and finance. Chapter 3 gives an overview of sector performance, including targets and outputs for four sub-sectors and insights from in-depth studies. Chapter 4 analyses sector performance against eight golden indicators. An in-depth analysis of functionality, the underlying causes and attempts to address those is provided in chapter 5. Chapter 6 provides a synthesis of conclusions and recommendations.

1.2 History of sector performance

A number institutions have responsibilities for programmes in the Ugandan water and sanitation sector. These include several Government Ministries and departments, local Governments, non-government organisations (NGOs), community-based organisations (CBOs), development partners and the private sector. Prior to 2003, the only way to assess overall sector performance was through the numerous documents published by these diverse stakeholders. Although considerable high quality information was available, it tended to focus on certain aspects of performance, particularly the number of infrastructure projects completed and overall expenditure.

The production of the 2003 sector performance report (MWLE, 2003b) involved an extensive consultative process involving key stakeholder representatives agreed on 10 key performance themes for the water and sanitation sector (Figure 1). Each theme was reported on separately.

Figure 1.1 Key Performance Themes for the Water and Sanitation Sector



In 2003, the Minister of State for Water presented a report entitled "*Water and Sanitation in Uganda – Measuring Performance for Improved Service Delivery"* (MWLE, 2003b) to the Joint Government of Uganda/Development Partners Sector Review (JSR). This report brought together the achievements of various sector players into one document and assessed performance on a much broader basis than had been done previously.

A sister document to the 2003 (MWLE, 2003c) sector performance report, the "*Uganda Water and Sanitation Sector Performance Measurement Framework"* set out the existing system for performance measurement, its strengths and weaknesses and made recommendations for further improvements and institutionalisation.

The 2004 sector performance report (MWLE, 2004c) built on the previous work. A major development was to focus the detailed analysis of performance on eight 'golden' indicators for the sector. Two more 'golden' indicators have been added in 2005, bringing the total to ten (Table 1.1). Additional Performance indicators have also been developed for each water and sanitation sub-sector but have not yet been adopted.

Table 1.1. Water and sanitation sector 'golden' indicators

Performance Theme	'Golden' indicator	
Water access/use	1	% of people within 1.5km (rural) and 0.2km (urban) of an improved water source
Functionality	2	% of improved water sources that are functional at the time of a spot-check
Value for money	3	Average investment cost per beneficiary of new water and sanitation schemes
Sanitation access/use	4	% of people with access to (and use of) improved and basic latrines / toilets
Quantity of water	5	% increase in cumulative storage capacity of water for production
Water Quality	6	% of water samples taken at the point of collection or discharge that comply with national standards
Equity	7	Mean parish deviation from the district average in persons per improved water point
Hygiene access/use	8	% of people with access to (and use of) hand-washing facilities
Gender	9	% of water and sanitation committees where at least one woman holds a key position
Community management	10	% of water points with actively functioning water and sanitation committees

DWD is aware that a number of terms within these indicators (improved, functional, basic latrines, water for production, national standards, hand-washing facilities, and key positions) require clear definitions.

This 2005 sector performance report builds on the previous sector reports.

1.3 Aims of Sector Performance Reporting

A comprehensive system of sector performance reporting contributes to improved management of the water and sanitation sector and highlights opportunities for improvements in the delivery of services to the citizens of Uganda. The overall aims of sector performance reporting are:

- To collate and synthesise key information on the performance of the sector as basis for further discussion, further analysis and action.
- To assess the effectiveness of water and sanitation policies and improve them.
- To improve the accuracy, focus and integration of performance data.
- To analyse performance changes over time, by geographical location, by income group, gender, and other themes.
- To be able to readily identify good and poor performance and strengthen mechanisms for identifying underlying causes.
- To focus institutional roles for assessing and acting on sector performance.
- To integrate the 'tools' of performance measurement (eg operational monitoring, value for money review, technical audits, financial tracking studies, evaluation) in one place
- To provide a credible system for arguing for more resources for the sector and for effective and equitable resource allocation.
- Support implementation of sector reforms including improving efficiency, effectiveness and performance.

The use of a prioritised set of 'golden' indicators aims to:

- Link the water and sanitation sector to the Poverty Eradication Action Plan (PEAP) which provides a wider framework for assessing Uganda's overall progress against eradicating poverty.
- Ensure that overall sector resource allocations can be matched to performance targets and subsequently the MDGs.
- Improve the linkages between local Government resource allocations and sector performance.

1.4 Information sources

Several national data sources play a role in monitoring the performance of the water and sanitation sector:

DWD Management Information System (DWD-MIS) and National Water and Sewerage Corporation Management Information System (NWSC-MIS). These systems capture the infrastructure services provided in rural and urban areas. The focus is on the provision of services and potential users.

The **National Population and Housing Census (UPHC)** is a source of demographic, sanitation and water related information. This provides one of the main sources of demographic and socio-economic statistics. 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.

The **Uganda National Service Delivery Survey (NSDS)**, This survey is conducted by UBOS. Information is collected on selected sectors like education health, water and sanitation, agriculture, transport and governance. The survey aims at providing information about the performance of the selected sectors for policy formulation, implementation and monitoring at all levels of governance.

The **Health Inspectors Annual Sanitation Survey (HIASS)** is an annual event organized by Environmental Health Division of the Ministry of Health. A format with sanitation indicators on rural sanitation, urban sanitation, schools, and health units is circulated to all Districts for the attention of all District Health Inspectors (DHIs). This is undertaken at least 2 months before the Annual Sanitation Conference normally held in September or October. The DHIs link up with the Health Assistants (HAs) at the Sub counties and under their supervision collect and fill in the forms. The DHIs summarise the data for the District and present it. This data is compiled for the whole country during the Annual Sanitation Conference and kept on a database kept at the Environmental Health Division (EHD) of MoH.

Weaknesses detected in this method include limited staff in the sub counties and limited time to carry out the survey in view of other on going activities in the Districts. Efforts to improve this system have been directed towards developing a ***Household Sanitation Assessment Book,*** to be used routinely by Health Assistants and HAs and other extension workers to collect sanitation data. This strategy is being implemented in an integrated manner with EHD (through Health Inspectors and Health Assistants) and DWD (through TSUs) working together. However, the process is not yet fully operational due to many challenges including inadequate funds and lack of transport and equipment.

The Uganda Participatory Poverty Assessment Process (UPAP) is based on discussions with 60 communities.

The Uganda National Household Survey (UNHS) and **The Uganda Demographic and Health Survey (UDHS),** are regular national household surveys which focus on the outcomes of investments.

Tracking studies and technical audits monitor the flow of resources, efficiency of systems and delivery of services. These studies are used to examine service delivery and associated costs.

Small scale surveys conducted by NGOs including UWASNET and international organisations (eg UNICEF).

Other reports from DWD, MoES and MoH have been utilised.

Performance Measurement field visits (PM Field Visits) to provide in-depth information for this report were undertaken. EHD and MoES visited 26 households in Rwebitakuli and Mateete sub counties (Sembabule district) and 31 households were visited in Kyamuhunga and Kicwamba sub counties (Bushenyi district). To consider issues of gender and community management, a team of six professionals from DWD spent four days in three Districts in consultation with key informants and water users. 81 people were interviewed [Gulu – 23, Sembabule – 29, Rukungiri - 29] [male -55; female - 26] [water users – 60; District officials – 21]. Two case studies on functionality, one by Rakai DWO (point water sources) and the other by TSU and DWO (RGCs) were conducted in 2005. Visiting 34 rural communities and 10 in RGCs, 289 stakeholders (WUC members, Hand Pump Mechanics, LCs and the user beneficiaries) were interviewed. Case studies on functionality were also made in Iganga Districts, involving visits to 50 water sources.

It should be noted that basic definitions vary between surveys and even over time for a given data source. These differences are explained where data is presented and analysed. The 2003 sector performance report provided a detailed analysis of these differences.

1.5 Report production process

The 2005 report has been produced in three key stages.

Planning. Members of the Sector Performance Thematic Team (SPTT) and individuals involved with the production of the 2004 sector report held a series of planning meetings in April 2005. Lessons learned from previous years were reviewed and used to set out the following general requirements for the 2005 report:

- Considerable analysis and discussion of performance league tables and trends
- Integration of primary data with other data used as part of the analysis
- Data from other on-going work and sources to be integrated in the report e.g. UNICEF, MoES, MoH, UWASNET, MoLG and tracking study.
- Analysis of gender and community management
- Case studies on good practices
- Detailed information on sector financing
- Priorities for the future in terms of resource allocation, policies, in-depth studies
- Present targets for next year

A draft structure for the 2005 report was then prepared and steps taken to mobilise data collection activities, including the appointment of data collection teams and a coordination group, and the circulation of guidance notes and terms of reference for each.

Data collection. Six teams were formed to collect data for the 2005 Sector Performance Report. Each team focused on between one and three indicators. The teams reviewed relevant studies,

highlighted key findings and documented lessons about how sector performance could be improved. Districts with high or low performance were selected for in-depth study.

Analysis and report production. The Coordination Group pulled together the data collected by the teams, undertook quality assurance and further analysis where required. They held detailed discussions with senior management to discuss implications of the analysis and develop conclusions and recommendations. Support was provided by the MIS section of DWD to produce graphs and maps.

Chapter 2

Water and Sanitation Sector Overview

2.1 Sector Development Framework

The Ugandan Government has put in place a Poverty Eradication Action Plan (PEAP) as a national framework for poverty eradication. The PEAP was prepared in1997 and revised in 2000 and 2004 (MoFPED, 2004a). It has adopted a multi-sectoral approach, recognizing the multi-dimensional nature of poverty and the links between influencing factors. The issues raised in the PEAP are being addressed through various programmes including water and sanitation.

In the revised PEAP (MFPED, 2004a), 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 water supply and sanitation)[2].

The Government of Uganda has reformed the water and sanitation sector in order to ensure that services are provided and managed with improved performance and cost effectiveness, the Government's burden is decreased while maintaining commitment to equitable and sustainable provision of services in Uganda. The reforms required in-depth studies, situation analysis, and studies of African region experiences. Rural Water Supply and Sanitation (RWSS) and Urban Water Supply and Sanitation (UWSS) reform studies were completed in 2000 (Wardrop, 2000; Consult4, 2000). The Water for Production and the Water Resources Management Reform studies were completed in December 2003 and January 2005 respectively. The reform studies included sector strategic investment plans (SIPs) with appropriate policies, strategies and action plans.

2.2 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:

- "*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, 1999a).
- 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*

[2] Pillar 5 states that a healthy and educated population is both a necessary condition for and an objective of national development.

80%-90% effective use and functionality of facilities" (MWLE, 2004e), 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. This corresponds to 72% access to safe water by 2015.

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

A Sector Wide Approach to Planning (SWAP) for the Water and Sanitation Sector was adopted in September 2002. SWAP is a mechanism whereby Government and development partners support a single policy and expenditure programme which is under Government leadership and follows a common approach. The rural water and sanitation sub-sector is the most advanced in terms of SWAP implementation.

2.3 Policy and Regulatory Framework

Sector policies and the legal framework present a comprehensive regulatory framework for the management of the water sector:

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

The current policies reflect the socio-economic, development and financial fabric prevailing in present day Uganda with foresight to the future. However, the policy measures are not fully implemented, especially at the local government and community levels. There is need to review some provisions of the laws in order to incorporate regulatory functions and allow greater participation of all stakeholders, including the private sector.

2.4 Institutional Framework

2.4.1 *Sub-Sectors*

The water and sanitation sector consists of four sub-sectors.

The **Water Resources Management (WRM)** sub-sector is concerned with the integrated and sustainable management of the water resources of Uganda so as to secure and provide water of adequate quantity and quality for all social and economic needs for the present and future generation. It does this through monitoring and assessing the quality and quantity of water resources, storing, processing and disseminating water resources data and information to users, providing advice and guidance to water development programmes, providing advice on management of trans-boundary water resources, regulating water use through issuing of water permits and providing water quality analytical services. WRM functions are centralised and handled by DWD through the Water Resources Management Department (MWLE) but proposals have been made to decentralise some functions to the lowest appropriate levels.

The **Rural Water Supply and Sanitation (RWSS)** sub-sector comprises the provision and maintenance of adequate supply of water for human consumption and domestic chores. Sanitation aspects include sanitation promotion and hygiene education in rural communities and schools. Rural water supply falls under the Directorate of Water Development and implementation is decentralised to local Government. Sanitation is the mandate of Ministry of Health (MoH), Ministry of Water, Lands and Environment (MWLE) and Ministry of Education and Sports (MoES) according to a memorandum of understanding signed in 2001[3].

The **Urban Water Supply and Sanitation (UWSS)** sub-sector comprises services for human consumption, industrial and other uses to gazetted towns and centres with population of more than 5,000 people. Urban WSS is sub-divided into 19[4] large and 143 small towns. Large towns are managed by NWSC under a performance contract arrangement with Government. Once constructed, small town schemes are managed by private operators accountable to Local Government.

The **Water for Production (WFP)** sub-sector refers to water for agricultural production, which includes water for irrigation, livestock, fish farming and rural based industry. 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). DWD/MWLE and the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) are both responsible[3] for WFP.

2.4.2 *Roles and Responsibilities*

Several ministries, line departments and non-governmental organisations are involved in the water and sanitation sector as follows:

The **Ministry of Finance, Planning and Economic Development** (MFPED), mobilises funds, allocates them to sectors and coordinates donor inputs. MFPED reviews sector plans as a basis for releasing allocated funds, and reports on compliance with sector objectives.

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[3] The roles and responsibilities of these Ministries are set out in section 2.4.2

[4] As of June 2005, the National Water and Sewerage Corporation (NWSC) operations in the nineteen towns of: Kampala, Jinja/Njeru, Entebbe, Tororo, Mbale, Masaka, Mbarara, Gulu, Lira, Fort Portal, Kasese, Kabale, Arua, Bushenyi/Ishaka, Soroti, Mukono, Malaba, Iganga and Lugazi.

The **Ministry of Water, Lands, and Environment (MWLE)** has overall responsibility for initiating the national policies and for setting national standards and priorities for water development and management.

The **Directorate of Water Development (DWD)**, under MWLE is the lead agency responsible for managing water resources, coordinating and regulating all water and sanitation activities and providing support services to local Governments and other service provides. DWD regulates water use and waste discharge, supports districts in implementing decentralised WSS programmes and implements scheme (new construction and rehabilitation) in small towns and rural growth centres. DWD has established eight Technical Support Units (TSUs) to support Districts to build their capacity to implement their sector mandates. DWD is responsible for the development of water supplies for water for production. MWLE/DWD is also involved in a number of trans-boundary initiatives relating to Lake Victoria and the River Nile under the auspices of the East African Community and the Nile Basin Initiative.

The **Planning and Quality Assurance Department (PQAD)** of MWLE is mandated to monitor and evaluate "*sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery*" (MWLE, 2004a). Professionals from the department undertake field trips on a quarterly (or six-monthly) basis to all 55 Districts which are used as the basis for the "*PAF Monitoring Report for Programmes and Activities under MWLE*".

The National Water and Sewerage Corporation (NWSC) operates and provides water and sewerage services 19 large urban centres[4] assigned to it. 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. The implementation of urban reform aims to create an independent regulatory framework and an asset holding authority, which will affect the future management of urban water and sanitation systems.

The **Ministry of Health (MoH)** is responsible for hygiene promotion and household sanitation. The Public Health Act (1964) provides the legal foundation for the promotion of good sanitation in Uganda and has been augmented by the issue of further guidance. The Health Sector Strategic Plan (HSSP) includes the output: "*personal, household, institutional and community health promoted*". The **Environmental Health Division (EHD)** is the main part of the MoH responsible for the development / initiation of good strategies and approaches and for the provision of support to the decentralised structures.

The **Ministry of Education and Sports (MES)** is responsible for hygiene promotion and sanitation in primary schools. It works to ensure that schools have the required sanitation facilities and provide hygiene education to the pupils. It also promotes harvesting of rainwater for hand washing after latrine use.

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, including the use and management water for water for production (irrigation, animal production and aquaculture). It interfaces with MWLE in the implementation of water for production programmes.

Local Governments (Districts, towns, Sub-Counties) are empowered by the Local Governments Act (1997)to provide safe water. They receive grant funding and may mobilise local resources for implementing rural WSS programmes and to support small town WSS. Local Governments

also appoint and manage private operators for urban schemes outside the jurisdiction of NWSC. District Governments are being encouraged to set up District Water and Sanitation technical Committees (DWSC) to oversee and provide effective coordination of water sector activities in the respective Local Governments.

Non-Government Organisations (NGOs) and Community Based Organisations (CBOs) complement Government in sector service delivery in terms of finance and implementation. The GoU and development partners have supported the Ugandan Water and Sanitation NGO Network (UWASNET) which has a secretariat and over 100 member organisations.

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 provide piped water in the majority of small towns and vendors often bring water from the point of collection to the user.

Communities are responsible for demanding for, planning, contributing a cash contribution to, operating and maintaining most rural WSS facilities. A water and sanitation committee (WSC) should be established at each water point.

2.4.3 *Sector Coordination*

At national level, two committees have been established to provide policy and technical guidance for the sector development for the country. The **Water Policy Committee (WPC)** as provided for in the Water Act Cap 152, article 9. In conformity with the Water Act Cap 152, the second WPC members were appointed on 25 November 2004 by the Minister, MWLE and inaugurated on 17th December 2004. The **Water and Sanitation Sector Working Group (WSWG),** chaired by PS/MWLE meets at least every quarter and provides policy and technical guidance for sector development in the country. It comprises representatives from MWLE/DWD, NWSC, MoH, MES, MFPED, development partners and NGOs (represented by UWASNET).

At district level, District Water and Sanitation Coordination Committees (DWSCs) have been established. They comprise administrative and political leaders, technocrats and NGO/CBO representatives. The role of the DWSCs 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).

2.5 Funding Sources

The water and sanitation sector has three main sources of funding, Donor funding (in terms of both 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 as follows:

- 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 project

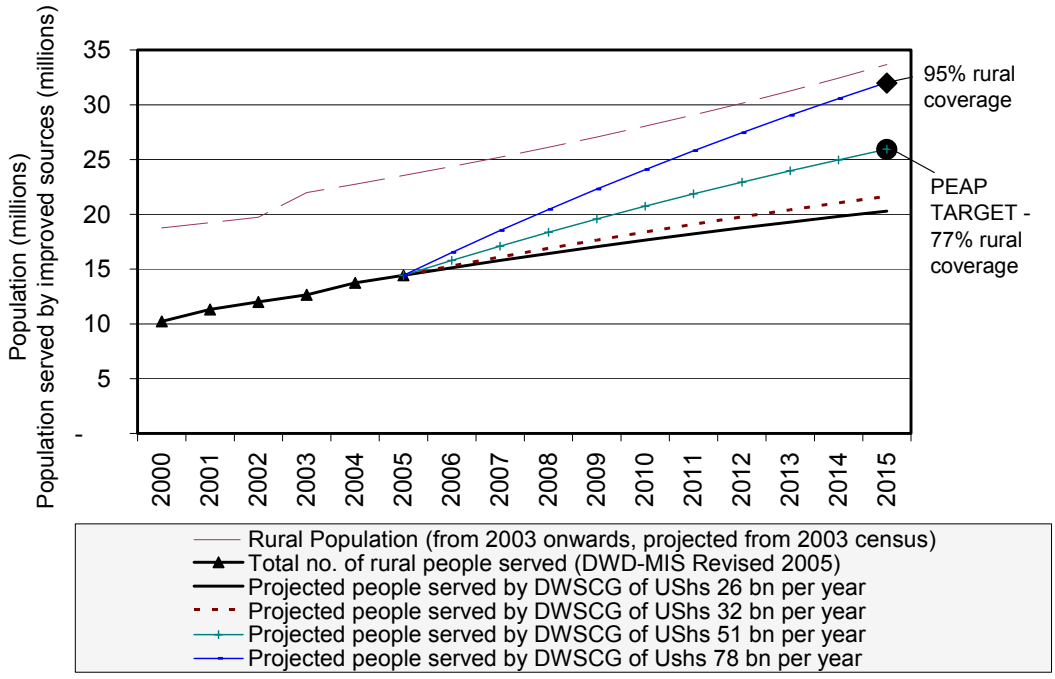
International and national NGOs (some of which are supported by donors) make a significant contribution to the sector in the areas in which they operate, but such funds are considered off-budget and not included in the analysis of direct sector funding.

2.6 Investment Requirements

The different sub-sectors have developed investment plans to meet their targets. Unfortunately the sub-sector investment plans have not yet been revised or integrated into a comprehensive sector investment plan which would enable realistic estimates of overall investment requirements, committed funding and any financing gaps. Presently, the Government, through the Medium Term Expenditure Framework (MTEF), sets ceilings for funding to the various sectors.

In the case of **rural water supplies**, the present high population growth (3.3%), coupled with current costs per water point[5] means that funding of UShs 32 bn per year to the District Water and Sanitation Conditional Grants (DWSCG) will not enable the PEAP target of 77% coverage to be met by 2015 through DWSCG investment alone[6] (Figure 2.1). Note that the PEAP target for Uganda is higher than the MDG. Assuming current investment costs over the next ten years, a minimum annual investment of UShs 51 bn is required[7]. However, the true figure is likely to be higher due to annual increases in investment requirements associated with higher costs for more difficult areas to serve. Assuming that the cost of providing improved water sources under the conditional grant remains at the 2004/5 levels over the next ten years, and accounting for 4% inflation, maintaining the % coverage of 60% bn 2015 requires a minimum district investment UShs 26 bn.

Figure 2.1 Analysis of investment in DWSCG and rural population served



[5] See section 4.4 for more details

[6] The figure has been calculated based on the increase in coverage due to the DWSCG in 2004/5, ie 699,350 users and the DWSCG expenditure for the same period, ie UShs 24.7bn. The projected no of new users per annum for an investment of UShs Z bn have been estimated as follows [690,000 x Z/22.8]. An inflation rate of 4% per annum is also included.

[7] As District Conditional Grant (assuming that central rural projects continue at levels)

Chapter 3

Overall Sector Performance

3.1 Introduction

This chapter sets out the respective sub-sector achievements and summarizes other important activities carried out or completed in the year 2004/05, but which may not necessarily fall directly under any of the 10 golden sector indicators.

A status on the provision of water and sanitation services for Internally Displaced Peoples (IDPs) camps in Northern Uganda is also included in this chapter. Much remains to be done in this area to alleviate the plight of more than 1.4 million people who are presently still trapped in a situation that is not of their own making. This chapter also includes a short section on piped water schemes for rural growth centres (population 500 – 5000). Rural Growth Centres (RGCs) are seen a catalyst for the economic and social development in rural Uganda.

As part of urban water supply, a summary is provided on the key achievements in small towns water supplies, internal management reforms by NWSC and initiatives to provide water services for the urban poor (in the 19 towns managed by NWSC).

A summary of the findings of monitoring work carried out by DWD/MWLE on water levels for Lake Victoria over the last 4 years is included. This is deemed important since the lake is key for the social and economic development of the 10 countries within the Nile Basin.

Summaries of the results National Service Delivery Survey (NSDS, 2004) and the Tracking Study are included. The findings of both these studies are generally in agreement with the results of the analysis of sector performance using the golden indicators under Chapter 4.

3.2 Sector Financing

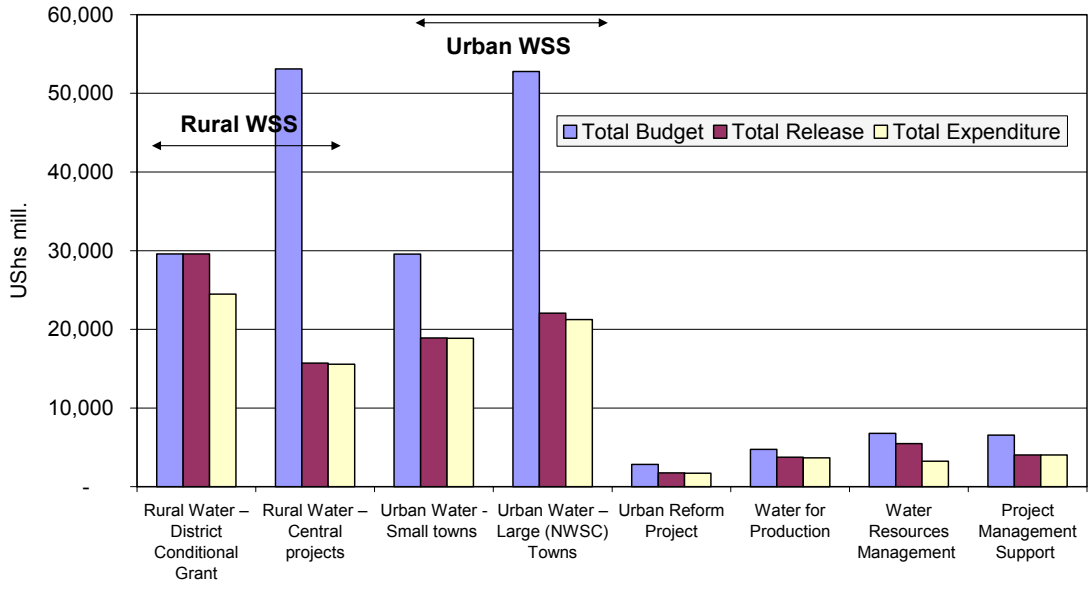
Table 3.1 sets out the funds which were budgeted, released and utilised under the different sub sectors in 2004/5. Overall, a total of UShs 156 bn was budgeted for the sector (including UShs 46 bn equivalent as NWSC donor funding).[8] Of this amount, approximately 65% of the budget was released (UShs 101bn). From Figure 3.1 it can be seen that considerable donor funds for rural water central projects and NWSC were not released. This largely accounts for the 35% unreleased budget. In the case of urban water supplies, funds were not released due to the late start of projects. Actual expenditure was UShs 93 bn (ie about 92% of the release). Although Water Resources Management, spent 56% of released funds, all other programmes spend more than 82% indicating high rates of absorption. The average absorption of released funds (92%) is higher in 2003/4 (81%).

[8] NWSC Donor and internally generated funds of UShs 46 bn equivalent are not included under the sector ceiling.

Table 3.1 Water and Sanitation Sector Budgets, Releases and Expenditure (FY 2004/5)

Programme	Allocated budget (UShs m)		Released (UShs m)		Expenditure (UShs m)	
	GOU	Donor	GOU	Donor	GOU	Donor
Rural Water – District Conditional Grant	29,602	-	29,602	-	24,484	-
Rural Water – Central projects	6,672	16,828	6,336	9,377	6,257	9,323
Urban Water - Small towns	8,304	21,262	7,839	11,068	7,802	11,068
Urban Water – Large (NWSC) Towns	6,314	46,446	5,174	16,883	4,355	16,883
Water for Production	4,762	-	3,745	-	3,665	-
Water Resources Management	1,930	4,856	1,688	3,786	1,636	1,611
Project Management Support	628	5,920	529	3,509	529	3,509
Urban Reform Project	468	2,380	339	1,400	331	1,400
TOTAL	**58,680**	**97,692**	**55,252**	**46,023**	**49,059**	**43,794**
GRAND TOTAL	**156,372**		**101,275**		**92,853**	

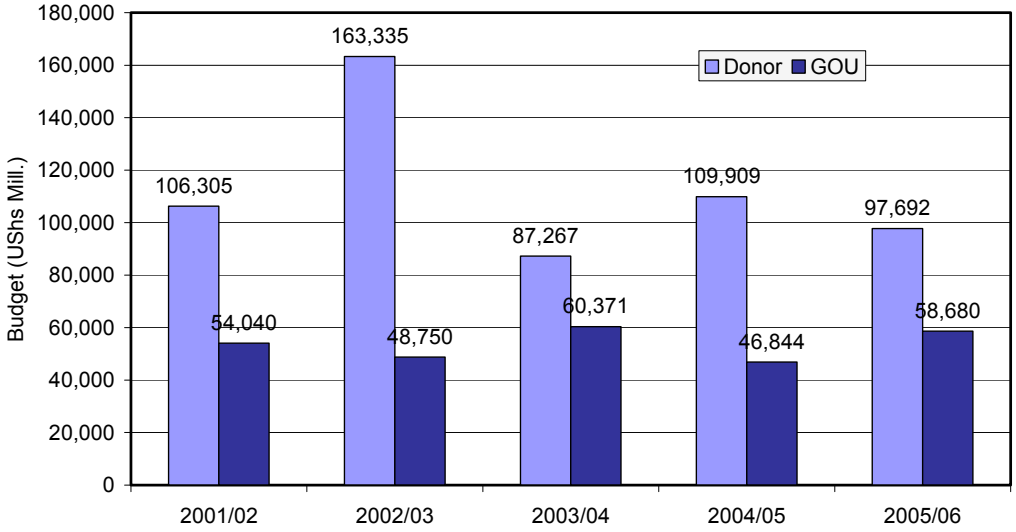
Figure 3.1 Budget Performance (GoU and Donor) 2004/5



Trends. Figure 3.2 sets out the sector budget over the last five years, and the proposed budget for 2005/6. These figures include MWLE central programmes and the District Water and Sanitation Conditional Grants[9]. Additional funding ie MoES (school sanitation), MoH (sanitation), LGDP and NGOs/CBOs (water and sanitation) and MAAIF (water for production) is not included.

[9] The GoU O&M grant is also included for FY 2001/2, 2002/3 and 2003/4.

Figure 3.2 Water and Sanitation Sector Budget Trend



Budget Allocation. The budget allocation between the four sub-sectors, policy management support and urban reform is shown in Figure 3.3.

Figure 3.3. Sub-sector budget allocations (Total) for 2004/5

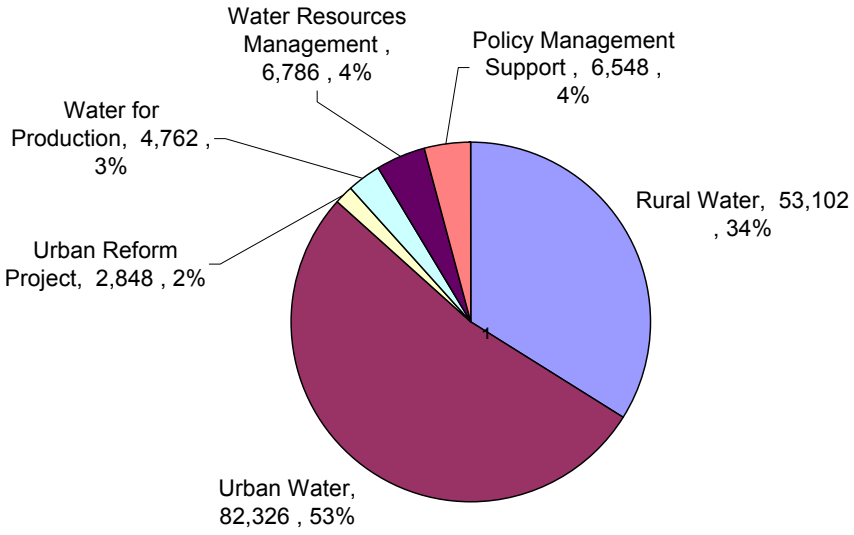
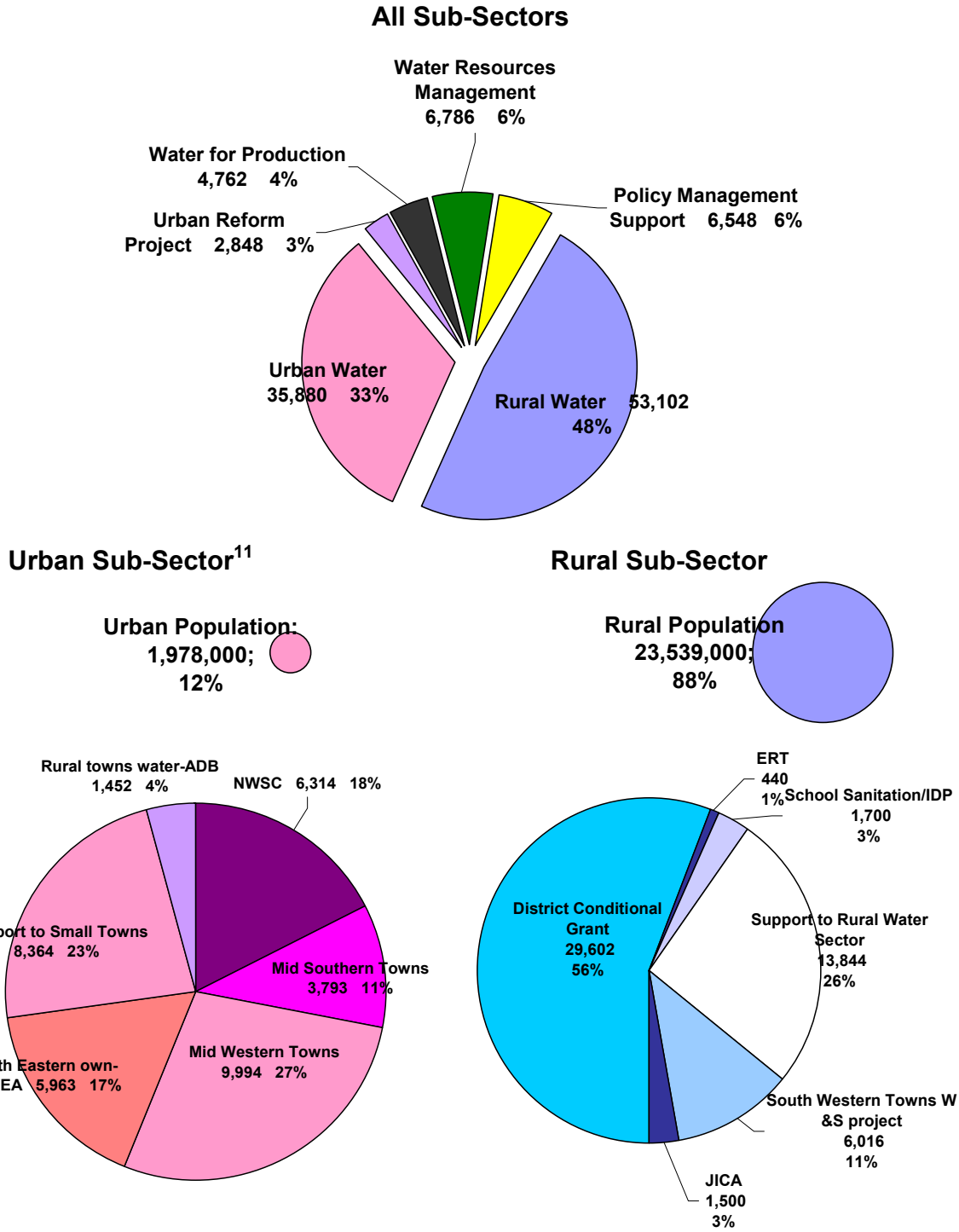


Figure 3.4 sets out the allocations under the MTEF. In this case NWSC donor funds (UShs 46.5 bn) are not included as these funds are not considered as contributing to the sector ceiling (ie not part of the MTEF). Figure 3.4 also provides the budget allocations within the rural and urban sub-sectors

.

Figure 3.4 Sub-sector budget allocations (under MTEF/sector ceiling) for 2004/5 (UShs m)[10]



[10] It should be noted that NWSC donor funds (UShs 46.5 bn) are not included in the analysis as these are not considered as contributing to the sector ceiling (ie not part of the MTEF).
[11] An additional UShs 46.4 bn for NWSC is not included as these donor funds are not part of the MTEF (ie not under the sector ceiling).

3.3 Rural Water Supply and Sanitation Sub-Sector

3.3.1 *Achievements*

Access to rural water supplies increased to an estimated 61.3% in 2004/5. This was achieved through the following outputs from the District Water and Sanitation Conditional Grant (DWSCG) which provided improved water supplies to over an estimated 680,000 people:

Number of springs constructed	771
Number of shallow wells constructed	1,010
Number of boreholes drilled	514
Number of GFS taps in place	462
RWH Facilities	1,372
Valley Tanks	7

In addition, 8 Rural Growth Centres (RGCs) were completed through central rural projects and piped water was provided in seven IDP camps.

3.3.2 *Internally Displaced People (IDP) Camps*

"*At the end of September 2004, there were 1.4 million internally displaced persons (IDPs) in some 200 camps benefiting from relief food distribution, down from 1.6 million in April 2004*" (UN-OCHA, 2004a). Using the SPHERE standards of 15 litres of water per capita per day and a latrine for every 50 people as examples, IDPs would require 21 million litres of safe water per day and some 28,000 latrines to dispose of their household excreta.

A mortality study (WHO, 2005) in the Acholi region revealed that the mean litres per person per day was 10.3 and the mean waiting time to collect water was 2.7 hours (SPHERE Standard is 15 minutes). The study, quoting reports by Health Inspectors gave person per latrine ratios in the camps as being 80 and 37 in the two district of Kitgum and Pader respectively There are obviously great variations between and within districts with poor indicators for the less accessible camps. One of the key recommendations of the study was to greatly improve on water and latrine availability. Diarrhoea was found to be the second leading cause of mortality for children under five and WES interventions have a demonstrated impact on incidence of diarrhoea and other water related diseases.

The strategy on Water and Sanitation for Emergency Response in Uganda (MWLE, 2004b) states that the appalling Water and Sanitation situation in the IDP camps requires immediate attention.

Many organisations are involved in the provision of water to IDP Camps (Table 3.2).

In 2004/5 DWD piloted the implementation of water supply and sanitation delivery and hygiene promotion to IDP camps in order to address the short term needs of some 80,000 people in seven camps (Table 3.3). Due to concerns about contamination of deep and shallow wells in the IDP camps, and the fact that many handpumps would need to be installed to supply the huge populations with improved water sources, focus has been placed on Motorised Reticulated Water Supply Systems (MWRSS). The Districts are responsible for O&M of the systems (including the provision of fuel).

Table 3.2 Provision of Piped Water in IDP Camps

District	IDP Camps	Camp Population	BH[12]	Piped water schemes	Collaborating partners
Katakwi	46	171,452	51		CCF, ACTIONAID,CWW,LWF SHI
Soroti	14	91,012	4	NWSC	Concern World Wide
Kaberamaido	3	4,242	9		Baptist Mission
Apac	24	25,576	9	3	CPAR, CARITAS,CCF
Gulu	34	489,802	125	5	ACF, AMREF, UNICEF
Kitgum	19	269,007	65	4	AVSI, IRC, OXFAM,WFP,UNICEF
Lira	67	141,084	33	3	IRC
Pader	13	235,166	38	4	UNICEF, IRC, WFP, UAF,
Total	**220**				

Table 3.3 Summary of IDP piped water schemes completed in 2004/05[13]

District	Camp name	Design Population	Budget (UShs)	Expenditure[14] (UShs)	Per Capita cost	Average per capita supplied[15]
Lira	Bar Legi	3,887	125,200,000	467,695,800	54,939	15l/p/d
Lira	Okwang	4,626	104,315,300			
Apac	Ojwii	9,500	150,000,000	150,000,000	15,789	15l/p/d
Gulu	Unyama	15,196	131,145,800	149,999,850	9,871	15l/p/d
Pader	Pader T.C	19,698	116,148,000	229,536,964	11,653	15l/p/d
Kitgum	Akwang	11,270	230,949,700	230,949,700	10,106	15l/p/d
Kitgum	Lagoro	11,582				
Total		66,882	857,758,800	1,228,182,314	18,363	

There were a number of constraints faced in the implementation of the pilot:

- The populations in the camps vary considerably with the security situation in the area. Communities are on the move, rendering it difficult to plan for a particular population.
- Delays were experienced in procuring goods and services for the pilot.
- There was a security risk for contractors and consultant personnel while implementing the pilot. With the exception of Unyama, all camps required a heavy security presence on a daily basis. This is part of the contract sum.

Given the ongoing suffering in terms of insecurity and high risk to health and lives from the appallingly low service of water and sanitation and poor hygiene practices, it is proposed that the pilot is extended in 2005/6 while the emergency response strategy is finalised and toolkits are developed. The extended pilot will ensure that a safe and hygienic environment is created in more IDP camps.

The draft strategy for "*Water and Environmental Sanitation Emergency Response in Uganda*" (MWLE, 2004b) has been taken forward, with appointment and reorientation of District Disaster Committees (DDMCs) with support from the OPM. although it should be noted that this has a wider scope than the IDPs.

[12] Borehole

[13] Design and construction of piped reticulation water supply system including supervision.

[14] At the tender stage, standard designs were envisaged. However, these were not appropriate for all situations and a range of designs had to be utilised. This increased the expenditure in several cases.

[15] Calculated as follows [Yield (m^3/h) x no of hours pumped (12 hours)]/[design population]

3.3.3 *Rural Growth Centres*

Rural Growth Centres (RGCs) are defined as communities whose population is between 500 and 5,000 (Table 3.4). Viable and growing RGCs are crucial for the economic and social development in the rural Uganda. However growing urbanisation[16] means that protected point sources become more prone to contamination, thereby creating the need for protected piped water supply systems for RGCs.

Table 3.4 Rural Growth Centre Categories

	Category 1	Category 2	Category 3	Total
Population	500–1,500	1,500–3,000	3,000 – 5,000	
No of RGCs	365 (43 %)	277 (33 %)	202 (24 %)	844

The rural sub-sector programme for improving water supplies in RGCs initially involves the selection, design and construction of 56 RGC schemes (at least one per district) and includes structured and effective training of district Governments. Six RGC schemes commenced in FY 2003/4[17]. Three were completed in the same financial year. The remaining three were completed in FY 2004/5. Eight others were commenced in FY 2004/5[18], of which four have been completed. Table 3.5 provides information on schemes completed in FY 2004/5. Costs include training and capacity building.

A draft strategy and investment plan for RGCs has been developed. District Governments are now mandated to plan for and construct RGC water systems with guidance from central Government. Given the size of the DWSCG, the contractual sums are prohibitive and require phased implementation.

Table 3.5 Summary of RGC schemes completed in 2004/05

District	RGC	Design Population	Expenditure (UShs)	Per Capita cost
Adjumani	Ciforo	4,021	508,160,566	126,377
Mubende	Kasambya	5,822	530,583,300	91,137
Kamwenge	Mahyoro	5,296	444,964,010	84,013
Nakasongola	Migera	4,967	427,205,550	86,007
Arua	Nyadri	4,931	484,260,422	98,211
Moroto	Matany	6,784	344,074,838	50,718
Nebbi	Nyapea	7,206	577,590,400	80,153
Total		**39,027**	**3,316,839,086**	

3.4 Urban Water Sub-Sector

3.4.1 *Targets and Achievements*

Table 3.6 shows the targets and achievements for the urban water and sanitation sub-sector for 2004/5. The increase in connections by NWSC marks an average growth of about 20% per annum.

[16] The populations in RGCs are expected to almost double by the year 2015. More than 50 % of the RGCs in Category 1 will have developed into Category 2, more than 60% of the RGCs in Category 2 will have developed into Category 3 and the typical RGC in Category 3 will then have grown into a small town with more than 5,000 inhabitants.

[17] Mahyoro, Kibibi, Matany, Kasambya, Semuto, Serere

[18] Migeera, Nyapea, Nyadri, Ciforo, Rwebisengo, Bulanga, Kachumbala, Muyembe

In the past, central and local Governments used to run small town water supply systems using their own staff. In order to improve efficiency and quality of water supply services it was decided to commercialise service delivery (through partnerships with the private sector) and separate asset ownership from system operations.

Table 3.6 Targets and Achievements for Urban Water Supply and Sanitation

Item	Large (NWSC) Towns		Small towns[19]		Water Auth.[20]
	Ach.	Target	Ach.	Target	Achievements
Coverage	68%	68%	36%	-[21]	n/a
NRW[22] Significant savings in water production.	33.4%	37.3%	n/a	n/a	n/a
Water works	n/a	n/a	15	20	n/a
Production wells drilled	n/a	n/a	13	30	n/a
New connections	22,218	12,000	1,156	n/a	2,606
Total no. Connections	120,046	110,000	n/a	n/a	15,656
Water produced (million m^3)	57	56.5	n/a	n/a	3.2
Staff per 1000 connections	9	10	n/a	n/a	33
Metering efficiency[23]	98%	97%	n/a	n/a	n/a
Collection efficiency[24]	89%	103%	n/a	n/a	88.6%
Water meters installed	n/a	n/a	n/a	n/a	3,000
Turnover UShs billion	51.7	48	n/a	n/a	2.2
Mains Extensions (km)	294.5	284.6			17 km
Unaccounted for water	33.4%	37.3%			
Waterborne (flush)toilets			4	4	
Ecosan toilets			7	8	

3.4.2 *Small Towns Water Supplies*

The urban sub-sector programme for improving water supplies in small towns involved the completion of six schemes as set out in Table 3.7. Over 55,000 people have been served and the schemes are designed to benefit over 129,000 people.

Table 3.7 Summary of small towns schemes completed in 2004/05

District	Initial Pop.	Design Pop.	Expenditure (UShs)	Per Capita Cost
Adjumani		34,935	196,698,441	5,630
Moyo	13,123	25,235	621,750,925	24,638
Katakwi	8,348	10,686	1,060,245,928	99,218
Kyenjojo	7,928	14,278	1,531,671,611	107,275
Masindi	21,090	39,200	5,896,175,153	150,413
Laropi	4,531	5,073	622,851,249	122,778
Total	**55,020**	**129,407**	**9,929,393,307**	

[19] Small Towns Water and Sanitation Project
[20] Water Authorities in Town councils
[21] The target has not been included as the method of estimation has been changed this year.
[22] NRW is the new term used instead of UFW or unaccounted for water. It implies water that is lost from production to sales. With the reduction in the percentage of water losses, there is more water available for water users. Water losses constitute commercial (illegal consumption) and technical losses (eg pipe bursts)
[23] Metering efficiency refers to % of connections that are metered. A higher level is a sign of better measurement of the consumption levels.
[24] Collection efficiency is the ratio between water billed or invoiced and actual amount of money collected from the bills. Ideally it should be 100%, but due to poor customer responses it is at times less than 100%.

3.4.3 *Water for the Urban Poor in Large (NWSC) Towns*

It has been established that some of Uganda's poorest people live in the urban areas. They tend to be further marginalised than the rural poor as they are not able to engage in subsistence agriculture. Water supply services to peri-urban areas and the urban poor continue to be a major challenge for the Government and are hindered by:

- Lack of physical and structural plans for settlements hence making it difficult to extend services to the areas
- Population increases which tend to outpace the rate of infrastructure development.
- Low income levels which hinders private connections and payment of services.

Despite these challenges, NWSC is trying to serve the urban poor through kiosks and public stand posts, preferential tariffs, a simplified connection policy and specific projects.

Kiosks and public stand posts for the urban poor. Currently, the NWSC provides cheaper water for the urban poor through the kiosk or public standpipe system. During the period 2000-2005, a total of 1,079 new water kiosks and public stand posts were erected (83 in 2000/1, 68 in 2001/2, 277 in 2002/3, 382 in 2003/4 and 269 in 2004/5). The growth in stand posts is not sufficient to meet the demand for water services in the poorer areas due to problems including management and overcharging by stand post operators.

Tariffs. The current NWSC tariffs have been designed so that the better-off pay more than the poor (Table 3.8). However it should be noted that the actual cost to the consumer is higher than the tariff. The stand pipe price is a subsidised rate of UShs 521 per m^3. Due to the uniform tariff structure across the NWSC towns, there are cross subsidies. The smaller areas with higher unit costs of water production are subsidised by the larger towns with lower unit costs of production. The Tracking Study (MWLE, 2005) also examined the tariff structures for urban water supplies (Box 3.1).

Table 3.8 NWSC Tariff Structure 2004/5

Customer Category	Tariff (USh/m^3)
Public Standpipe	521
Domestic	806
Institutions & Government	993
Commercial < 500m^3/month	1,379
Commercial 500-1500m^3/month	1,421
Commercial >1500m^3/month	1,324
Average Commercial	1,373
Average Water tariff	964

Simplified Connection Policy. At the end of the first quarter of the FY 2004/05 a new connection policy commenced to address, among other issues, the high level of water losses and the need for accelerated service coverage with special emphasis on serving the poor[25]. Quarterly monitoring and a review has shown that the number of new connections has nearly doubled indicating that there was a high level of suppressed demand for services.

[25] Under the policy, NWSC is directly responsible for procurement of all materials, carrying out execution/supervision of new connections installation up to a distance of 50 meters once the customer has paid fees. Distances above the mandatory 50 meters the customer will be charged but NWSC is still to handle the connection.

NWSC Projects for the Urban Poor. NWSC is implementing an urban poor project in the areas of Kamwokya/Kifimubira (Kampala) to intensify the network and provide more service points. Funding is from GoU and NWSC. KfW will provide funding for the implementation of the downstream activities recommended under the KfW funded Urban Poor Study. The implementation will commence with detailed designs then move on to construction. NWSC, KCC and MoH are involved in the Water for Africa, Phase II programme being formulated to alleviate the plight of the urban poor by UN Habitat. The programme will take an integrated approach to address water, sanitation and value based water and sanitation education for schools. An MoU is due to be signed between the GoU and the UN Habitat on the implementation of the programme.

Box 3.1 Tafiff Structure Comparison (Source: Tracking study, MWLE, 2005)

NWSC charges UShs 521 per m^3 for public stand pipes, UShs 806 per m^3 for private connections and UShs 993 per m^3 for institutions and for government departments. Commercial category rates are fixed at UShs 1,324, 1,379 and 1,421 per m^3depending on the volumes consumed. All these rates are VAT exclusive (MWLE, 2005).

In comparison, most of the small towns charge UShs 1,000 per m^3. However, in some towns (with more stand posts than yard taps), the rate at stand posts ranges from UShs 1,500 to 2,500 per m^3 (UShs 30-50 per 20 litres). This implies that tha populations in small towns pay more for water than populations in large (NWSC) towns. Poor people who fetch water from the stand posts pay more than the relatively higher income earners who can afford yard taps. This defeats the aim of provision of water to the poor in the slums of the small towns. If government subsidizes water for consumers in large towns, it could be argued that subsidies should be extended to the poor in small towns to make water more affordable and, hence, to contribute to the overall objective of provision of clean water to all the people. More detail on tariff comparisons is shown below:

A water tariff comparison between large towns and small towns in Uganda (MWLE, 2005)

Classification	Lower Limit	Upper Limit
Large (NWSC) Towns	UShs 521 - public stand pipes	UShs 806 for private connections to households
Small Towns	UShs 1,000 – Public/yard Taps	UShs 1,500-2,500 - stand posts in selected towns

MWLE (2005) points out that the tariff structure used in small towns is based on the volumetric charge which, when multiplied by the volume of water consumed in a charging period, gives rise to the charge for the period in question. The tariff is fixed per unit volume. Economic efficiency and environmental criteria both suggest that this element should, ideally, recover all the costs in the long-run. This practice differs from the Increasing Block Tariff (IBT) structure, applied by the NWSC, based on the lower and upper volumes of consumption per charging level. IBTs are often called 'lifeline' or 'social' tariffs and are created with the intent of protecting the poor. Under an IBT, the first block of water used is provided to a household at a low price, often below the cost of service provision. Another water charge is the connection charge - this is a one-off and normally up-front charge, for connecting a customer to the public water supply and/or sewage systems.

3.4.4 *NWSC Internal Reforms*

Since 1998, NWSC has undertaken a number of **change management programmes**[26] to revamp the performance of the Corporation. In order to sustain the efficiency gains realized as a result of the implementation of these programmes, the NWSC formulated Internally Delegated Management Contracts for all its areas of operation in the year 2004.

Internally Delegated Area Management Contracts (IDAMCs) (2004) are mechanisms for operationalising the performance contract between GoU and NWSC. IDAMCs started with seven pilot towns, beginning from January 1, 2004 and now cover all the NWSC towns. The evaluation

[26] 100 Days Programme (1999), the Service and Revenue Enhancement Programme (1999- 2000), Area performance Contracts (2000 – 2002), the Stretch out Programme (2003), and the One Minute Manager Concept (2003-2004).

of these contracts indicates significant achievement of targeted outcomes for all towns under IDAMCs[27]

They came as a result of NWSC's response to the need to further consolidate operations at the area (Town) level. These contracts differ from the earlier *Area Performance Contracts* by assigning more operating risk to the management teams of the services in the large (NWSC) towns. The management teams form a partnership and are paid partly based on the achievement of key performance indicators. The obligations of the contracting parties are more clearly defined to avoid ambiguity in the rights and responsibilities. Other features of these include increased autonomy to the Areas and team accountability.

The key feature distinguishing IDAMCs from a conventional management contract with a private service provider is that the IDAMC is a litigation-free partnership. The NWSC board is the final arbitrator in disputes and the NWSC headquarters perform the contract management roles of asset holding and performance monitoring. Furthermore, the IDAMC strategy is in line with the wider sector reform tenets of increased outsourcing and separation of WSS asset ownership from operation of WSS services.

Under the IDAMCs, the operator is obligated to operate and maintain WSS assets, rehabilitate and extend services, bills customers and collects charges, among many other obligations. The Head Office provides strategic guidance, carries out major capital works, and sets tariffs and other rates, pays management fees and undertakes monitoring and evaluation of performance.

The IDAMC regulatory/monitoring framework is based on monitoring by contract. The emphasis is on partnering ("we work together" approach) rather than legalistic approach. Therefore, the IDAMC contracts are more flexible with possibilities for amendment to suit the prevailing unanticipated operating conditions. In addition, the fairness principle is fully entrenched in the IDAMC structure to give either side full confidence that no malice will be exercised during the contract implementation process. The framework emphasises delivery of outputs but also incorporates a process/methods orientation to try as much as possible to prevent poor performance by the business units.

Zonal Performance Contracts (ZPCs). In recognition of the increasing level of activities in the Kampala area, and as a means of improving efficiency in service delivery, management key functions in Kampala were decentralised to zones. This led to the formulation of Zonal Performance Contracts (ZPC's) with more autonomy transferred to the zones. This has enhanced speed, and reduced red tape. The decentralized functions include installation of new connections, customer care, maintenance of the networks, leak control, meter servicing, mains extensions and billings. Preliminary reviews of the ZPCs so far indicate that the volume of backlogs in connections and response to customer complaints have reduced significantly.

Other Outsourcing/PSP Programmes NWSC also realised a need to outsource those services that could be better done by the private sector. As an initial move, the NWSC outsourced the non-core activities of grass cutting, building maintenance, vehicle repairs and guard services. Secondly, management strengthened the Management Contract in Kampala - Kampala Revenue Improvement Programme (KRIP). KRIP was a services improvement contract in Kampala City that covered about 70% of NWSC operations in terms of water production, customer base and revenue generation. After the expiry of the KRIP Management contract in June 2001, management mobilised a strong team of its own staff to run operations in Kampala, follows by a second management services contract with ONDEO Services (a French management utility company), signed in January 2002 and run up to February 2004.

[27] see NWSC website: www.nwsc.co.ug

Tariff Indexation. In order to protect the tariff from externalities such as inflation, and thus take into account changes in production costs, the NWSC tariff was indexed with effect from March 2002 with Cabinet approval. The indexation allows for the annual adjustment of the tariff, and entailed a 6% increase of the tariff in the first year of implementation. This is a significant achievement for the reform process, and is expected to protect the tariff in the wake of future reforms for NWSC.

Improved MIS. NWSC has also put emphasis on developing its Management Information System (MIS), which is a key ingredient to a robust commercialization process.

External Services. During the year 2004/05, a new product, the External Services Unit[28], was launched. This was a response to the demand from other utilities and institutions (both within Uganda, in the region and outside Africa) for NWSC expertise. The main aim of the unit is to share knowledge and experience as a means of fostering south-south and north-south cooperation. It is envisaged that this product will create synergies within Utility Providers and therefore improve performance. So far, IT/Commercial services have been provided to the Nairobi Water Company, and the Corporation is in advanced stages of twinning with Umgeni Water of South Africa, Dar es salaam Water Company and the German Technical Cooperation (GTZ).

3.5 Water for Production Sub-Sector

No new water for production facilities were constructed by central Government as funds were used to pay outstanding contracts from last year. Thus there was no increase in water for production storage capacity.

The Water for Production Strategy and Investment Plan (WFPSIP) was completed. Under the auspices of the Water for Production Sub-sector Working Group, the water for production study reform recommendations were prioritised and budgeted. A draft cabinet paper has been prepared for Government approval.

Although we have data from several studies, there is no up to date water for production database. This renders it very difficult to determine access and distribution of facilities on a national basis.

3.6 Water Resources Management Sub-Sector

3.6.1 *Water Quality Monitoring and Regulation*

In line with its mandate, the Water Resources Management sub-sector has strengthened the water resource and quality monitoring, regulation and data management aspects:

- The Support to Water Resources Management network stations (28 surface water, 10 ground water and 40 water quality monitoring) were identified for review and maintenance.
- Continued decentralisation of WRM activities is taking place in 3 pilot districts (Tororo, Mbale and Kasese).
- 1167 water quality samples, 993 surface water and 863 ground water records were collected.

[28] The components of this product include IT services, static plant maintenance, water quality management and block mapping among others.

- Groundwater recharge assessment studies in Wobulenzi and Kasese were carried out, water resource modelling and one water balance study were undertaken. Technical assistance was provided to water treatment works.
- In 2004/5 61 permits were issued (10 surface water abstraction, 19 groundwater abstraction, 18 wastewater discharge, 12 drilling permits, and 2 construction).
- 18 permit holders were monitored for compliance and 6 permits renewed.
- The Mitigation of Lake Kyoga Floods Project carried out routine monitoring on lake flooding and baseline. EIA/restoration redesigning study was commissioned and an inshore bathymetric map was developed.

3.6.2 *Lake Victoria Levels*

Lake Victoria is Africa's largest and the world's second largest freshwater lake. It is one of the most important shared natural resources of Eastern Africa. It straddles the common borders of Kenya, Tanzania and Uganda, with catchments extending to Burundi and Rwanda. The lake features the world's largest freshwater fishery and provides for local consumption as well as exports. It has a critical importance for the region as a source of income, hydropower, food, potable and agricultural water, transport and tourism. The catchment is valued for its socio-economic potential and as a global centre of aquatic diversity.

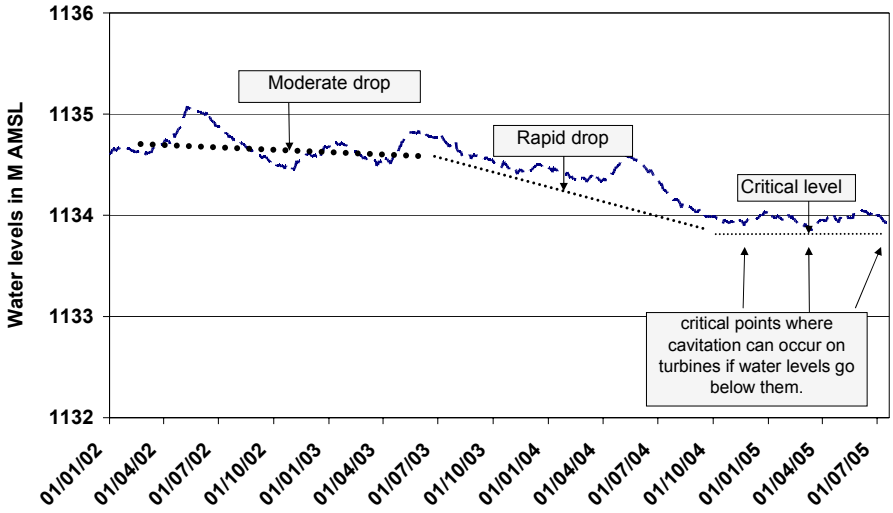
Declining Lake Levels. Since April 2002, Lake Victoria has experienced continuously falling water levels and reduced storage despite the fact that data on major hydrologic processes around the lake do not reveal below normal performance. The drop in levels has been a subject of social, economic and political concern in East Africa.

Situational analysis. The Water Resources Management Department (WRMD) has been keeping a watchful eye on the operations of both Nalubaale and Kiira Dams since the commissioning of the latter in April 2002. Ten day release data has been consistently submitted by Uganda Electricity Generation Company Limited (UGECL) and, at a later stage, by Eskom (Uganda) Limited in compliance with abstraction permits. Analysis of lake levels as well as expected and actual releases has been undertaken. Time series data (Figure 3.5) reveals the impact of commissioning Kiira on lake levels.

Time series. In the period under review, the level peaked at a level 1135.07 metres above mean sea level (mamsl) on 20th May 02. From the time that the first turbine (Unit 11) of Kiira Power Station was commissioned in April 2002 a gentle fall in lake levels took place until 30th May 03 (to 1,134.84 mamsl). This was when unit 12 at Kiira dam was commissioned. The Lake level then assumed a spiralling fall and by the 17th March 05 the lake level was 1,133.87 mamsl. This corresponds to a drop of 1.2 metres, equivalent to about 82.56 billion m^3 loss from lake storage. Release was 112.2 million m^3/day as opposed to 59.6 million m^3/day that should have been released according to the permit.

The rapid drop in levels seems to have now been checked although reasons have not yet been explained. One theory stipulates that below a certain level (around 1133.80 mamsl), turbines would suffer cavitation thereby reducing efficiency. Perhaps it is this technical limitation which has levelled the trend in water level drop. We may now predict a new regime at around that level.

Figure 3.5 Lake Victoria Levels at Jinja Gauge

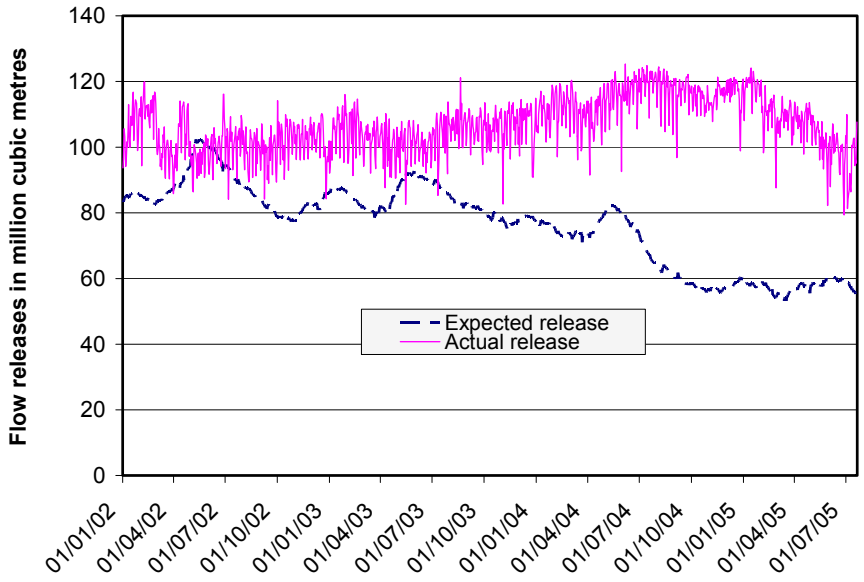


Comparative time series. The disparity between expected and actual releases at Jinja is shown in Figure 3.6. Since May 2002 there has been a sustained divergence between expected and actual releases which peaked on January 14th 2005. Since then, there has been a closing in of the disparity with the closest being on the 27th June 2005. This period coincided with heavy rains over the lake. One fear is that the lake started this dry period (June-August) from a low level. Excessive releases may undermine the brief gain acquired in May-June period and may lead to a severe drop in levels thus grossly affecting power production.

Conclusion. Apart from Hydropower potential of the Nile that is being harnessed by Uganda, Lake Victoria and River Nile controls the regime of other water bodies in Uganda (notably Kyoga to a tune of 92%). In addition, DWD/MWLE is nursing the plan to introduce bulk water transfer. These developments should be undertaken in tandem with a desire to maintain high water levels in order to enable the high investment to be economically viable. Thus maintaining high water levels in Lake Victoria should be considered as a priority interest that must be vigorously pursued.

The ESKOM Permit for Nalubaale,and Kiira dams has been renewed (September 2005) allowing a release of 59.6 million m^3/day. This needs 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.

Figure 3.6. Lake Releases at Jinja



3.7 Training and Capacity Building

Improving the performance of the water and sanitation sector requires a high quality workforce. Limited human resource capacity in terms of numbers, skills, attitude, focus, knowledge or experience can result in poor management, design, construction and O & M. The need for high levels of human resource capacity is even more critical given the changing institutional and organisational roles in the sector.

Capacity building and training in the sector has been the focus of '*Training For Real*', an action research project that is facilitated by Water Engineering and Development Centre (WEDC) of Loughborough University, U.K. The major findings of this research are that substantial amounts of funds have been set aside for training and capacity building activities in the sector yet there are no tangible outcome indicators to judge the added value arising out of these activities. For example, the Human Resource Development Unit of DWD/MWLE has a training and capacity building budget of US$ 2.3 million for the period 2003-07 (under the Policy and Sector Capacity Building component of the JPF). Box 3.2 sets out the findings from the Training for Real Study.

Box 3.2. Findings from the Training for Real Study (http://wedc.lboro.ac.uk/tfr/resources.htm)

Training and capacity building activities in the sector are uncoordinated and fragmented across departments or even divisions; they are usually haphazard, short-term and sometimes not aligned to sector priorities.

Over 70% of all capacity building activities are in the form of workshops and seminars. Yet most respondents attached a higher value to certificated courses. Over 50% of all workshops/seminars being conducted are for learning new skills/ideas. The rest are for consulting with stakeholders, planning, and review or information dissemination. Over 50% of workshop participants interviewed thought that the time provided for learning new skills/ideas in workshops was inadequate. About 25% also thought the quality of delivery was below required standards.

A survey carried out in various sector institutions revealed inadequate levels of institutional memory of lessons learnt from previous training and capacity building experiences. The level of involvement of institutions of higher learning in delivery of training and capacity building activities in the water sector is minimal. Therefore, it has been difficult to regulate the quality of training services provided by other consultancy firms.

In view of the above findings, it is recommended that the sector should develop policy guidelines for training and capacity-building, to cover the following:

- Development of minimum criteria for management of workshops/seminars
- Development of guidelines for measurement of training and capacity-building outcomes
- Development of mechanisms for increased involvement of higher institutions of learning in training and capacity building activities in the water sector
- Harmonisation of training and capacity building activities within the different sector institutions and in the sector as a whole.
- Scaling up the alternative training and learning interventions that were piloted under the Training For Real Project such as on-line courses and panel discussions.
- The sector should develop strategies to encourage the culture of continuous learning, and facilitate key sector personnel in improvement of knowledge and information management skills, and accelerate the process

3.8 PAF Monitoring

The Planning and Quality Assurance Department (PQAD) of the of the Ministry of Water, Lands & Environment has overall responsibility for monitoring all PAF programmes under the ministry. These are water supply and sanitation, Land Act Implementation, Wetlands Management and Meteorology. The PQAD ideally prepares quarterly monitoring reports after undertaking field visits for data collection to all districts. Typically, the reports cover staffing, office accommodation & equipment, financial & physical performance, procurement aspects and operation and maintenance issues.

The PAF monitoring reports usually provide generic sector issues and constraints to good performance such as functionality assessment, non-availability of handpump spare parts, status of water user committees and staff vacancies in the district water offices. This is primarily because the assessment does not make use of the water sector performance measurement framework/indicators and furthermore, the PAF monitoring field visits are typically limited to a day in each district, which makes it difficult to make detailed analysis and meaningful overall conclusions.

It is recommended that future sector monitoring and review work is better coordinated, is much more focused in fewer districts of the country and is based on an assessment of poor and good

performers (as measured by absolute and incremental performance levels) using the 'golden' indicators

3.9 Tracking Study

The 2005 tracking study analysed the financial flow through central projects (ie projects implemented by DWD rather than Districts) to the beneficiaries. The study covered ten centrally managed water and sanitation projects and considered monies expended in the financial years 2002/03 and 2003/04. The main objective of the study was to assess the flow of funds with respect to efficiency, timeliness, compliance, costs, resource utilization, and fulfilment of pre-determined targets. The tracking study assessed performance five areas. Selected findings are as follows:

Flow of Funds. Variances between the amounts released by MFPED and amounts received by projects were detected in 36% of all releases in FY 2002/03 and 29% in FY 2003/04**.** Total amounts utilised on projects exceeded the amounts released in 50% of the projects in FY 2002/03 and 20% in FY 2003/04. The latter is because, contrary to Accounting Regulations, all projects retained balances realised at the end of each Fiscal Year**.** The procurement process took 9 to 11 months on average, explaining largely why all the sampled projects over-shot their projected completion time by more than one year.

Compliance, book-keeping and accountability. Only four out of the six projects on which responses were received fully complied with the "*Guidelines for Application of Project Funds*". GOU Accounting Regulations were complied with for all six responsive Project Coordinators, except for the regulation requiring all unutilised balances to be surrendered to the Treasury at the end of each FY. Proper books of accounts were kept for all the six projects that responded.

Procurement plans of User Departments (ie originator of the procurement request) were neither received nor consolidated by the Procurement and Disposal Unit (P&DU), nor was a pre-qualification list of service providers developed as required by the "Public Procurement and Disposal of Assets Act (2003) Regulations"**.** No monitoring reports were submitted to the Procurement and Disposal Unit by User Departments the for presentation to the Contracts Committee. Procurement entities complied with the procurement procedures prescribed for each project.

In almost all procurements, long delays, adversely affecting timely implementation of the projects, did occur. These delays were mainly caused by failure by the User Department to originate procurement requests within agreed deadlines, delay in release of funds to the P&DU for procurement purposes, delayed composition of Technical Evaluation Committee (TEC) by the Contracts Committee (CC), delay in approval by supportive institutions (such as the CC and Solicitor General), poor coordination between procurement entities, and inadequacy of logistics within the P&DU.

Technical and economic assessment. All the water supply and sanitation systems visited were in place, as indicated in the tender documents, except for normally allowable, minor alterations**.** Water systems were generally functional, in that water was being supplied to the intended beneficiaries**.** However, land ownership was a major cross-cutting problem as most authorities had failed to pay for land on which water structures had been installed; hardly any had obtained land titles**.** Sanitation systems were not good enough in most of the towns visited. Very few projects made a deliberate effort to improve sanitation systems in the towns as part or a result of access to a more reliable water supply system**.** The model tariff was UShs 1 per litre of water although in some areas the cost was as high as UShs 2.5 per litre

Costs of service delivery. The cost of service delivery varied from project to project. The cost of service delivery is higher in Uganda than most other African countries. Various reasons were suggested for high levels of costs, including:

- Additional costs of support infrastructure.
- Expensive procurement systems.
- Lack of support information for designs which often necessitates pre-investment studies.
- Aggregation of contracts which limits competition.
- Excessive technical and financial thresholds for bidding purposes which eliminates the majority of upcoming local firms
- Application of locally unsuitable or unserviceable technology on the local market
- High and steadily rising cost of pipes on the local market

Key Recommendations made by the Tracking Study:

- De-concentration of some procurement aspects as necessary.
- The User Departments are recommended to forward their procurement plans to the P&DU within agreed deadlines so that the P&DU can consolidate them and make an overall yearly procurement plan.
- The P&DU and User Departments are recommended to make pre-qualification lists of Consultants and Contractors to quicken the process of sourcing for quality service providers and to improve coordination between themselves through regular reports and meetings.
- User departments should originate procurement requests within deadlines and funds should be released for procurement on time.
- P&DU is are recommended to prepare regular procurement reports on the basis of which User Departments can monitor progress.
- The User Departments and P&DU are recommended to pay more attention in the making of the initial designs and bills of quantities / specifications (quality assurance) to help guide the design consultants.
- TECs are recommended to scrutinise the consultants to ensure capacity to perform. With supervision consultants, it is recommended to set lump-sum contracts based on output rather than time-based contracts.
- In order to help create capacity among the local consultants and contractors, it should be a pre-condition for foreign bidders to associate with local firms. Conditions should set for local preference while tendering for local works.
- It is essential that before the central government implements water supply and sanitation systems, it should obtain sufficient evidence that the land issues will be solved.
- Central government should intensify the community mobilization aspects of the service delivery. This will only be done effectively if milestones are set and monitored before the construction proceeds
- The hygiene aspects of service delivery should be highlighted once more - the aspect of hygiene is as important for effective service delivery as safe water
- DWD should compile the necessary data / information needed for various designs such that costs for studies are reduced significantly.

Chapter 4

Performance Analysis using Golden Indicators

4.1 Summary of 'golden' indicators

Table 4.1 sets out a summary of the golden indicators. Achievements are given for the indicators which have been measured. Targets for several indicators are still to be set. Sub-sector indicators have also been defined but are not fully institutionalised.

Table 4.1. Golden indicators – targets and achievements

Golden indicators			2004/5 Achievements	Targets		
				2004/5	2006/7	2014/15
1	% of people within 1.5 km (rural) and 0.2 km (urban) of an improved water source	Rural	61.3%	58	62	77
		Large Towns	67%	70	75	100
		Small Towns	36%			
2	% of improved water sources that are functional at time of spot-check	Rural	82%	82	85	90
		Urban	no data	83	90	95
		WfP	no data	Targets to be set		
3	Average cost per beneficiary of new water and sanitation schemes (USD)	Rural	$31	45	40	40
		RGCs	$56	58	55	50
		Small Towns	$72	80	75	75
4	% of people with access to improved sanitation (household and schools)	Rural HHs	57%	58	62	77
		Urban HHs	no data	77	92	100
	Pupil to latrine/toilet stance ratio in schools		57:1	49	40	40
5	% of water samples taken at the point of water collection, waste discharge point that comply with national standards	Protected	not available	95	95	95
		Treated	not available	100	100	100
		Wastewater	not available	Targets to be set		
6	% increase in cumulative storage capacity availability of water for production		0	3.1	3.1	3.1
7	Mean *Parish* deviation from the District average in persons per improved water point	Rural	n/a	Targets to be set		
		Urban	n/a	Targets to be set		
8	% of people with access to and using hand-washing facilities	Households	Not measured in 2004/5	14	23	50
		Schools		Targets to be set		
9	% of water points with actively functioning Water and Sanitation Committees		Not measured in 2004/5	Targets to be set		
10	% of Water and Sanitation Committees/Water Boards with women holding key positions	Rural	Not measured in 2004/5	Targets to be set		
		Urban		Targets to be set		

4.2 Access to Improved Water Supplies

4.2.1 *Introduction*

Human life cannot exist without access to water. In some parts of Uganda, people, mainly women and children, walk extremely long distances to fetch water. This places an unnecessary burden on households, especially women and children, and results in very low rates of consumption and use for other purposes.. Further, some of the natural water sources are contaminated making them unsuitable for human consumption.

Bringing water closer to the home has a tremendous impact on the quality of life. Increased water consumption and use enables people to live with more dignity and positively impacts on health. Reduced collection times provide users with more time for other activities.

In order to provide water closer to the home, and of improved quality, the Government of Uganda is committed to providing improved water supplies – these comprise handpump sources, protected springs, piped water and improved rainwater harvesting. To date, attention has focused primarily on improving community and public sources.

This section analyses access to improved water supplies. The indicator "*percentage of people within 1.5 km (rural) and 0.2 km (urban) of an improved water source*" is used by the sector for the assessment of improved water coverage. However, given the difficulties in measuring this indicator, proxy figures for are used to estimate the number of users in both the rural and urban context.

The 1991 census and district population projection were used as a basis for calculating coverage from 1991 to 2003. From 2003 onwards, population data used in the analysis was based on the published 2002 population census results. For each of the rural and urban contexts three different approaches have been used to estimate access.

In order to provide a greater understanding of coverage, all six estimation procedures and alternative methods are utilised in this report. Data from the National Service Delivery Survey (NSDS, 2004), supporting studies undertaken by UWASNET, UBOS and Districts and information from other field visits is used for comparison and further analysis.

4.2.2 *Rural Water Coverage*

Definition of access: Estimates of the coverage of improved[29] rural water supply have been made using three approaches.

The *DWD-MIS* standard approach is based on a national survey of improved water sources, which was undertaken in 1991. On an annual basis, the improved sources[30] which have been constructed under various Government programmes (ie RUWASA, WES, SWIP) and by some NGOs have been added to the 1991 baseline information. This forms the basis of the *DWD-MIS* database. The database was "harmonised" to a certain extent with field surveys (covering certain parts of the country) undertaken in 1999, 2000, 2001 and 2002.

[29] Coverage figures consider several improved water sources (protected springs, deep boreholes and shallow wells fitted with handpumps and piped water). The improvements, or construction has been undertaken by various organisations.

[30] Both point water sources for rural communities and piped water in some rural growth centres (RGCs) are included in the rural coverage figures.

In order to calculate coverage as a result of improved water sources in the database, it is assumed that a fixed number of users utilise each source[31]. The total number of improved source water users for the district is estimated by summing the assumed users for each improved source. In order to calculate percentage coverage, the estimated total number of users is divided by the projected rural population for the district for the respective year. It should be noted that in preparing this year's sector performance report, a number of inconsistencies in previous *DWD-MIS* data from 1991 up to 2004 have been removed. The data presented in this report are thus an improvement on previous years and are referred to as *DWD-MIS (Revised 2005)* data.

The *District Situation Analysis* approach. From 2004/5 DWD, has synthesised data presented by Districts in their *District Situation Analysis* reports. This data source is likely to include more facilities which have been constructed by NGOs and other Government programmes than in the *DWD-MIS (Revised 2005)* data and usually excludes some sources which have been abandoned but are considered in the *DWD-MIS (Revised 2005)* data.

The *density* approach assumes uniform spatial population density and distribution of improved water sources (recorded on DWD-MIS database) in each sub-county. Based on this assumption, it calculates how many people live within a certain radius of an improved water source. If this calculates more than the maximum number of users for each water point[31], then the maximum number is used. If this method calculates a District average coverage of more than 95% then 95% coverage is assumed.

In cases where the sub-county population results in a lower number of users per technology than assumed by the standard DWD-MIS approach, coverage figures drop. The *density* approach has been used to analyse access for a distance of 1.5 km, 1km and 0.5km. The main drawback of this approach is that in cases where water sources are particularly unevenly distributed (ie several sources in one parish and very few in another, the method will over-estimate coverage). In order to improve accuracy, the *density* approach requires further information about settlement patterns and water source distribution at parish and village level.

National Coverage. Table 4.2 shows the estimated coverage at June 2005 as calculated using the three approaches set out above. Both the DWD-MIS and District Situation analysis correspond in broad terms to the findings of the NSDS (2004) ie rural access to safe[32] water of 60% and 52% in the wet and dry seasons respectively. Functionality is not referred to in the NSDS.

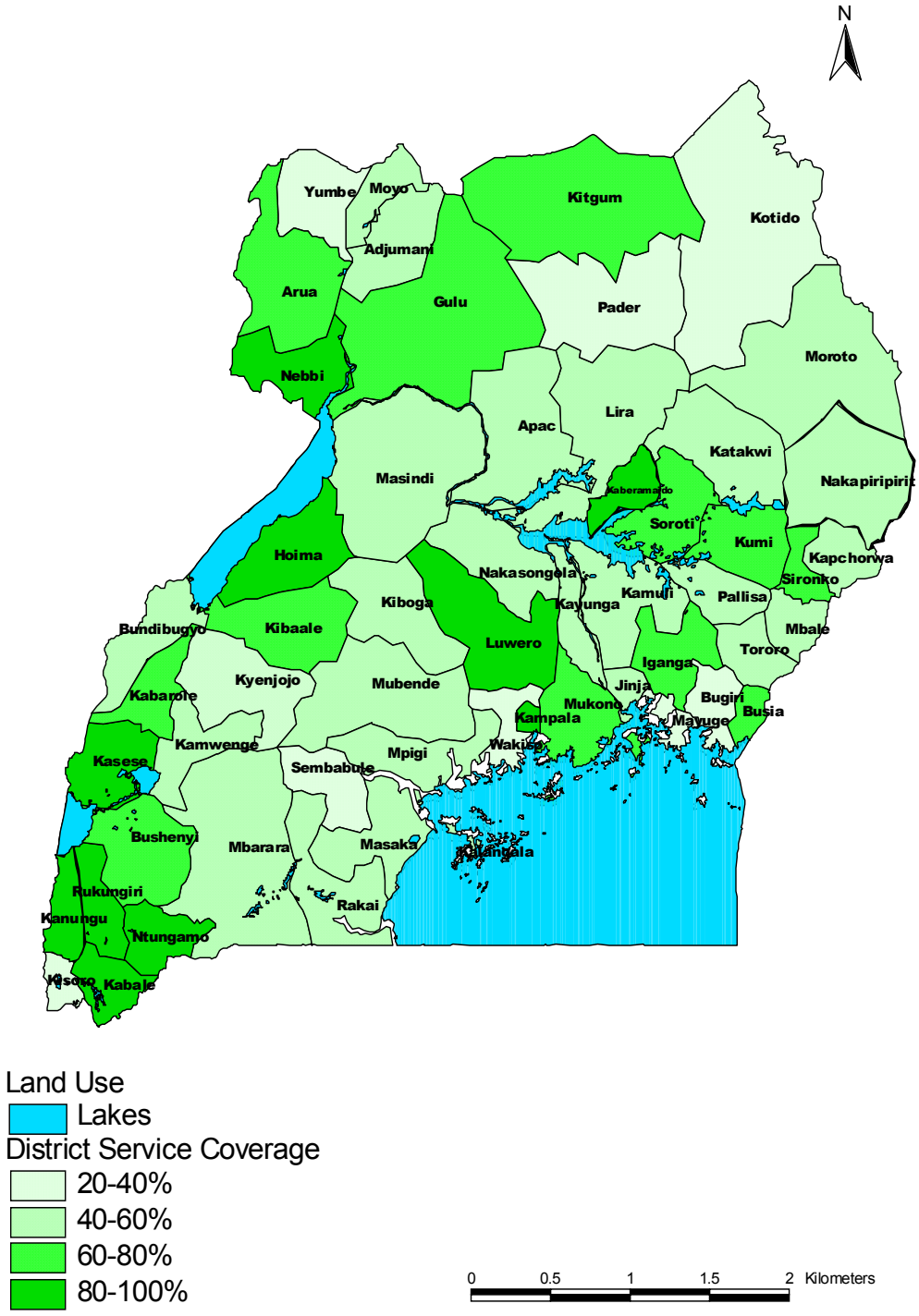
Table 4.2. Estimated Coverage of Improved Rural Water Supplies (June 2005)

	Estimated Coverage (%)	Estimated no. of users
1. DWD-MIS (Revised 2005) Approach		
Assuming 100% functionality	61.3%	14,427,250
Assuming reduced functionality[33]	49.7%	11,705,005
2. District Situation Analysis Approach		
Assuming 100% functionality	57.6%	13,781,027
3. Density Approach (assuming 100% functionality)		
1.5 km	55.7%	13,273,728
1 km	52.6%	12,583,320
0.5 km	36.0%	8,606,261

[31] 300 for a borehole, 200 for a spring and 150 for a GFS tap.
[32] Safe water sources are defined as piped water, protected water and gravity flow schemes.
[33] springs - 100%; handpumps - 70%; GFS taps - 90%

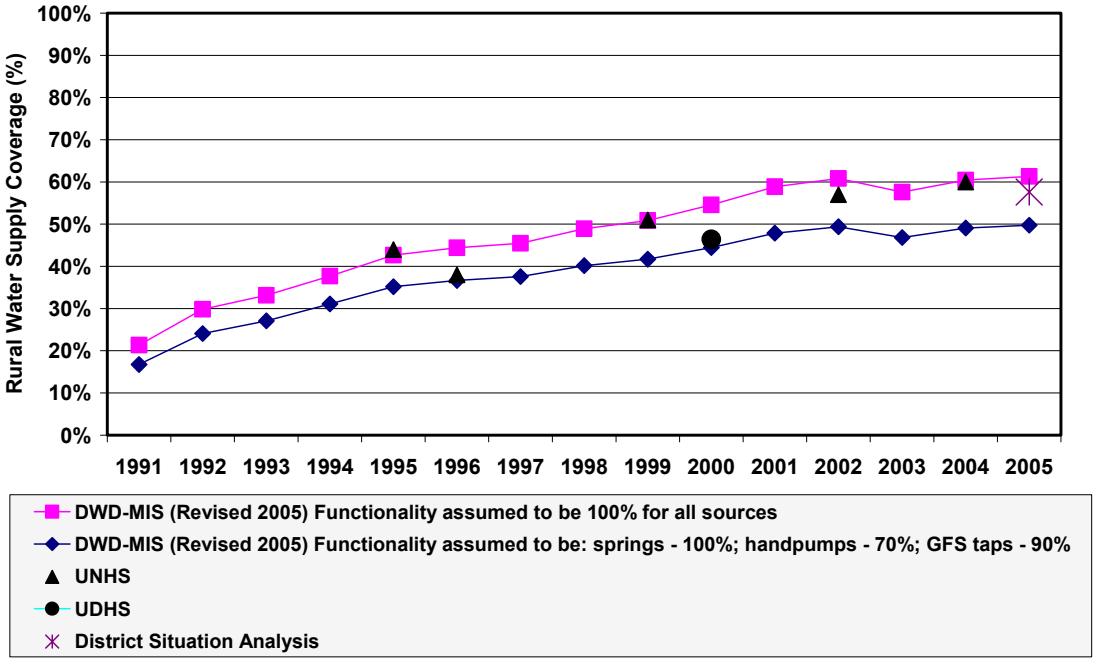
Coverage by District. Figure 4.1 presents the proportion of the population with access to an improved water source in each District in 2004/5 using the *District Situation Analysis* approach (detailed figures given in Annex 8). The figure shows that there is considerable inequity in coverage between districts. Five districts (Kabermaido, Luwero, Kabale, Kanungu, Kibaale) have an estimated coverage of over 80% and nine districts (Kisoro, Sembabule, Bugiri, Mayuge, Apac, Yumbe, Pader, Kotido and Palisa) have an estimated coverage of between 20 and 40%.

Figure 4.1. Rural Water Supply Coverage by District (District Situation Analysis)



Rural Coverage Trend. The *DWD-MIS* approach, and data from Uganda Demographic and Health Survey (UDHS), National Service Delivery Survey (NSDS) and Uganda National Household Surveys (UNHS) all show a steady increase in safe water coverage up to 2002 (Figure 4.2). The apparent drop in coverage from 2002 to 2003 was due to the use of the new population figures from the 2002 census. Coverage figures prior to this were based on population projections from the 1991 census. However actual population growth, as captured in the 2002 census, was higher than previous estimates. Figure 4.2 shows that new investments in rural water supplies have just kept abreast with population growth (3.3%) since 2002.

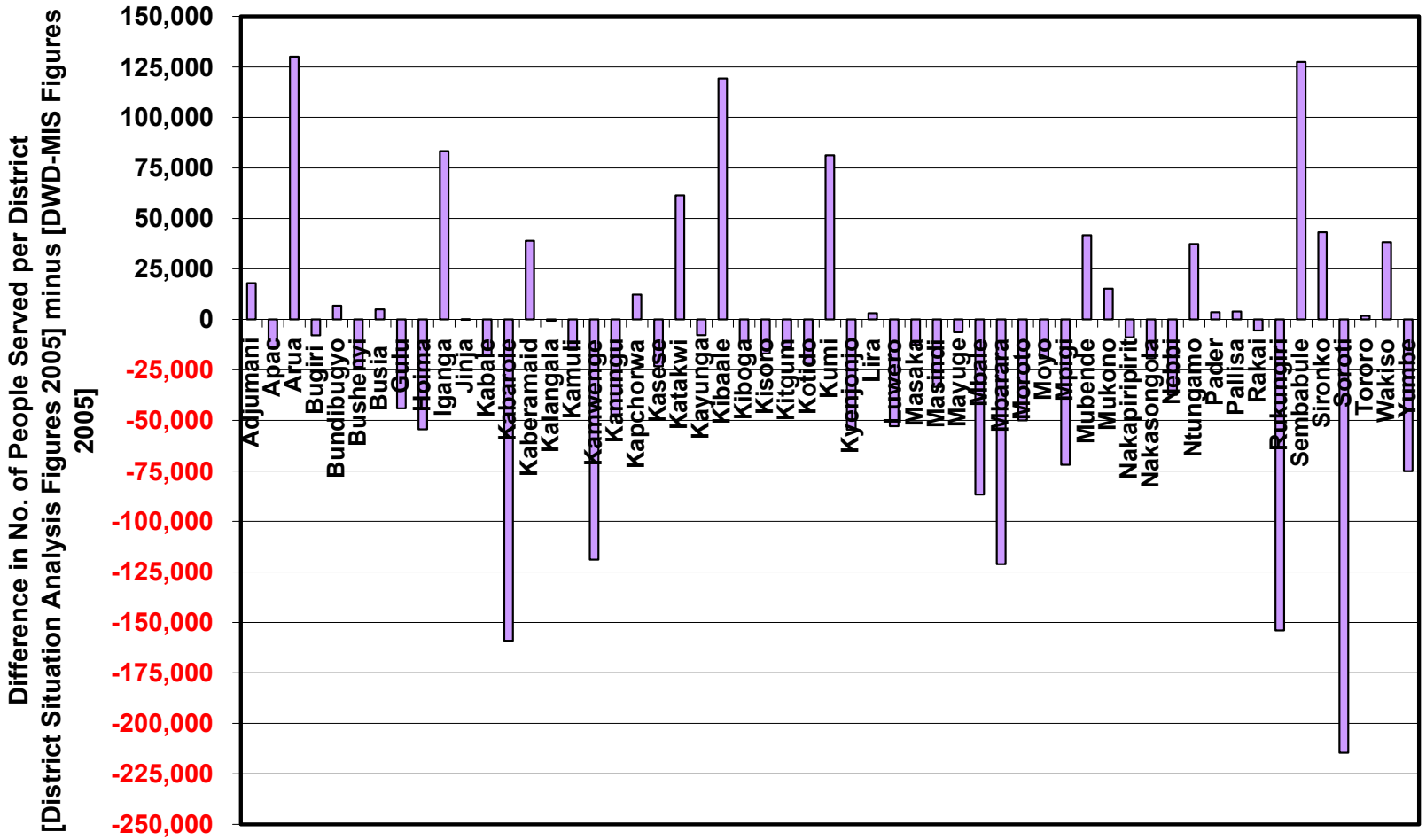
Figure 4.2 Rural Water Supply Coverage (1999 to 2005)



Prior to 2004/5, coverage figures issued by DWD did not capture all sources constructed by the various sector partners (eg NGOs, NUSAF, LGDP). For the first time, rural water supply coverage for 2005 include a coverage figure based on District situation analysis reports (see Figure 4.2). These reports should have captured more sources. Nationally, the *District Situation Analysis* figure is very close to the national *DWD-MIS (revised 2005)* figure. However, this national average hides considerable variation in figures for these two methods at District level.

Figure 4.3 shows the difference in number of people served between these two methods. Districts have been clustered according to their access (*District Situation Analysis*). Where the numbers are positive, the District Situation Analysis reports are higher than the *DWD-MIS (Revised 2005)* figures. This is to be expected as it is assumed that the District Situation Analysis captures sources not included in the DWD-MIS database. However, Figure 4.3 shows that in a number of cases, the *District Situation Analysis* figures are considerably lower than the *DWD-MIS (Revised 2005)* data. These disparities suggest that there may be problems in the reliability of the data or that there are a considerable number of improved sources which have been abandoned and are thus no longer counted by District Government.

Figure 4.3 Differences between District Situation Analysis Data and DWD-MIS (Revised 2005) Data for all Districts



It is hoped that coverage figures will become more representative following the introduction of new District (FDS) reporting formats. However, the data collection, database and analysis mechanisms for rural water supply coverage need to be examined in more detail. These have been designed to capture all water source improvements in districts.

Box 4.1 Findings of the National Service Delivery Survey (2004)

In March and April 2004 UBOS undertook a National Service Delivery Survey (NSDS, 2004) for all districts covering several sectors. The survey included questions on water access during the wet and dry season. 60% of rural and 88% of urban dwellers were found to obtain drinking water from protected sources[34] in the dry season. 1.1% and 9% of rural and urban dwellers respectively have piped water in the dwelling. Few households (less than 1%) reported rainwater as a source in the dry season. However, in the wet season, 18.4 % of rural and 13.2% of urban households reported that they use rainwater.

The survey found the average distance to a water source to be 1.1 km and 0.9km on the dry and wet season respectively. This was less than that of 2000 (1.5 km and 1.2 km in the wet and dry seasons respectively). The residents of Kalangala were found to travel the shortest distance (0.3km) while those in Sembabule the longest (3.2km). Both the issue of extensive use of lake water in Kalangala and the extremely long distances travelled in Sembabule needs to be further investigated to see how to improve service delivery in these Districts.

Water collection is mainly undertaken by women and children (86%). Waiting times (minutes) and amounts of water used per household are shown in below. On average, urban dwellers spend almost half an hour less in water collection (51 mins) than rural dwellers (78 mins). The reasons for the long water collection time were unreliable water sources, long distances and long queues at water points. The consumption rates shown in the table below are well below the desirable 20l/p/d.

Description	Dry Season		Wet Season	
	Rural	Urban	Rural	Urban
Waiting time at water source (min)	50	38	32	25
Travelling time to and from water source (min)	43	22	31	17
Total water collection time (min)	93	60	63	42
Water used (litres per household per day)	16	14	14	12

The main reasons expressed for not using protected sources are non-availability (54%), distance (19%) and unreliability (8%). 69% of urban and 30% of rural households pay for water services. The average monthly payments range from UShs 1,680 (rural) to UShs 6,820 (urban). Willingness to pay ranges from UShs 730 to UShs 3,400. It was found that most rural households paid for maintenance of water points (85%) while the majority of the urban households paid user fees (67%). Drinking water is treated (boiled and/or filtered) in 44% of rural and 67% of urban households, with the least treatment being in the north (2%). The most common way of storing drinking water in both rural and urban areas was using covered pots. However, some households used uncovered jerry cans.

[34] Rural details: piped water in dwelling – 1.1%; piped water in compound – 0.7%; piped water outside compound – 4.4%; borehole/protected spring/gfs – 54.1%; rainwater – 0.5%; unprotected source – 22.4; lake/river/pond/dam – 16.7%; other – 0.1%. Urban details: piped water in dwelling – 9%; piped water in compound – 12.5%; piped water outside compound – 27.3%; borehole/protected spring/gfs – 39.2%; rainwater – 0.3%; unprotected source –8%; lake/river/pond/dam – 3%; other – 0.7%.

4.2.3 *Small Towns*

According to DWD data, there are 143 small towns in Uganda with a total population of 1.6 million. 66 towns have been gazetted as water supply areas (small towns categories). 61 of these towns have operational piped water supplies and schemes of which 57 are managed by private sector water operators on behalf of the water authorities and DWD (this includes five which run under the South Western towns water supply umbrella organisation). An additional four are run by the town councils[35].

Five small towns are at the tendering and construction stage[36] although it should be noted that this is dynamic situation.

Definition of access: In the context of small towns, there are two ways of estimating access to an improved water supply:

(i) ***Local authority figures***: the percentage coverage is estimated by summing assumed numbers of users served by ***some*** water sources and dividing by the urban population. This method considers all piped water sources and some improved point sources in a given town and multiplies each by an assumed number of users[37]. In 23 of the 59 small towns with piped water the figures have been obtained directly from the local authorities. The basis for such coverage figures varies between the different water authorities.

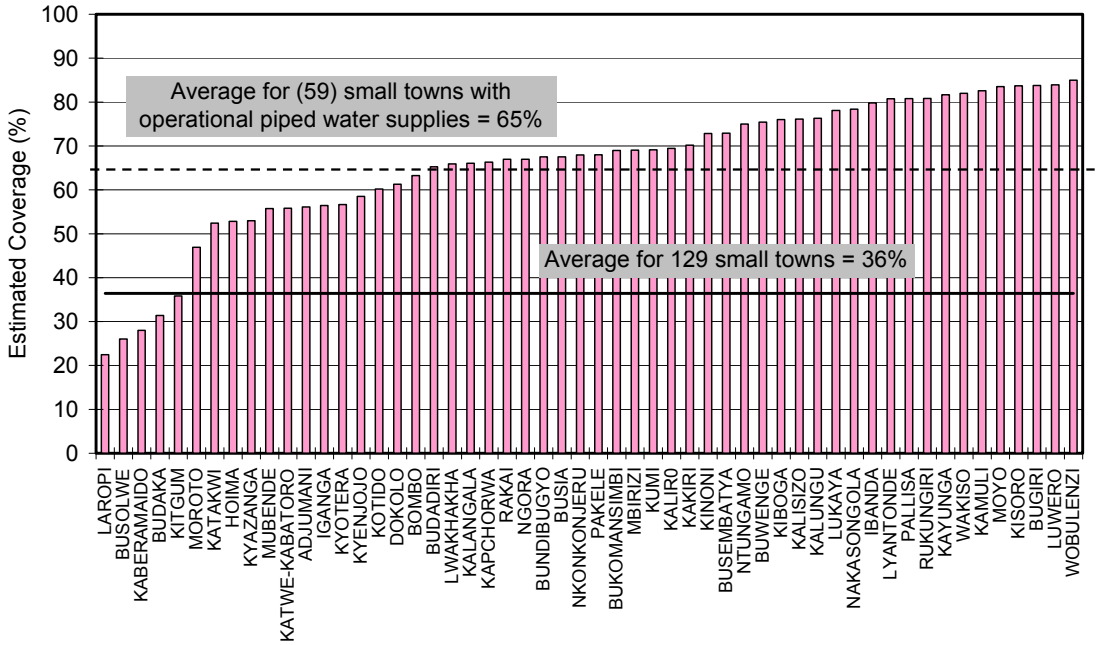
(ii) ***Figures derived from calculations***: the percentage coverage is estimated by summing the assumed number of users served by ***all*** water sources[37] divided by the urban population. However, this methods overestimates coverage. Out of the 59 towns with operational piped water supplies, this method estimates that 23 of have coverage of over 100%. There is thus need to review the criteria and develop realistic figures to determine the actual coverage.

Unfortunately information on improved point sources in the 84 towns which lack operational piped water systems is scanty. Coverage of small towns water supplies has thus been calculated with the information available. Overall coverage is estimated to be 36%. The latter figure will be changed once more work is undertaken to resolve the complexities of estimating coverage figures. The NSDS (2000) found that access to piped water in urban households was 9%, compounds was 12.5% and outside the compound was 27.3%.

Coverage of the towns with operational piped water supplies is estimated to be 65%. There is considerable variation in the coverage of the small towns with piped water supplies (Figure 4.4).

[35] Kyotera, Moroto, Apac and Kotido
[36] Sembabule, Nebbi, Mpigi, Kigumba, Pakwach
[37] House connection – 8; institutions, industry, yard tap – 32; kiosk – 300; shallow well – 300; protected springs – 200 and boreholes – 300.

Figure 4.4 Small town water coverage for operational piped systems (2005)[38]



4.2.4 *Large (NWSC) Towns*

Definition of coverage: NWSC assumes per capita daily water consumption of 60 litres. The coverage is estimated by taking the total amount of domestic water billed (daily average), divided by the assumed per capita consumption. The problem with this method is that some water, which is considered as domestic by NWSC, is actually used in construction, washing bays, watering gardens and livestock which if not taken into consideration leads to over-estimation of urban water coverage.

Trend. The overall coverage of the 19 large towns served by NWSC now stands at 68%. Coverage increased from by 3% per annum between 2001 and 2003 and by 2% over the last two years (Figure 4.5). The reduction in the growth rates is due to extension of services being made to the more difficult sparsely settled areas. In some of these areas, the rate of new connections has reduced. There has been a progressive growth in new connections over FY 2004/05. 22,218 new connections were made, averaging 1,800 new connections per month (Figure 4.6)and bringing the total number of connections to 123,046. New connections exceeded the target of 12,000, and the total number of connections exceeds the target of 110,000.

Coverage by town. Figure 4.7 shows the urban water coverage in 15 out of the 19 large (NWSC) towns. Nine of these (Kampala, Jinja/Njeru, Entebbe, Mbale, Masaka, Mbarara, Gulu, Kasese and Fort Portal) have a coverage greater than or equal to the average NWSC coverage. The towns of Tororo, Lira, Kabale, Arua, Bushenyi/Isaka and Soroti fall below the average. The NSDS (2000) found that access to piped water in urban households was 9%, compound 12.5% and outside the compound was 27.3%.

[38] Apac is not included as it is a very small scheme. Kihihi, Rwashamaine, Kambuga, Kelsoni and Buyanja are not included as they are part of the South Western Towns Water and Sanitation project. Reports for these towns were not available for the production of this report.

Figure 4.5 Growth in large (NWSC) Town Water Supply Coverage

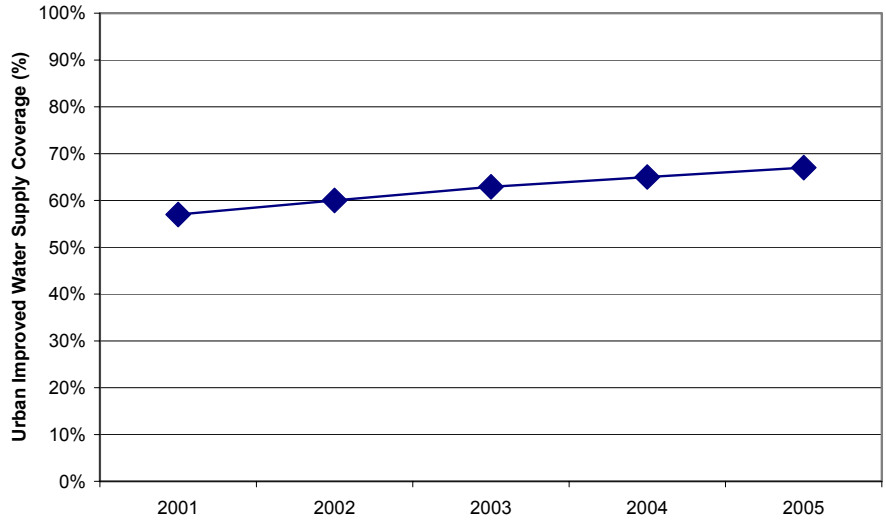
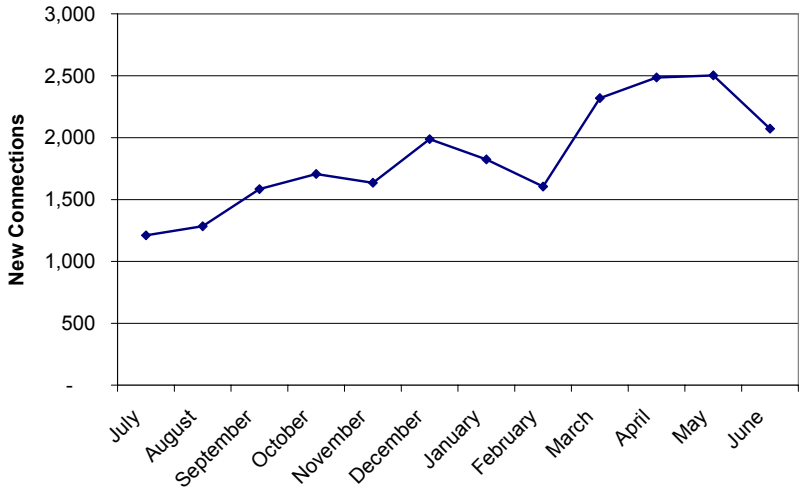
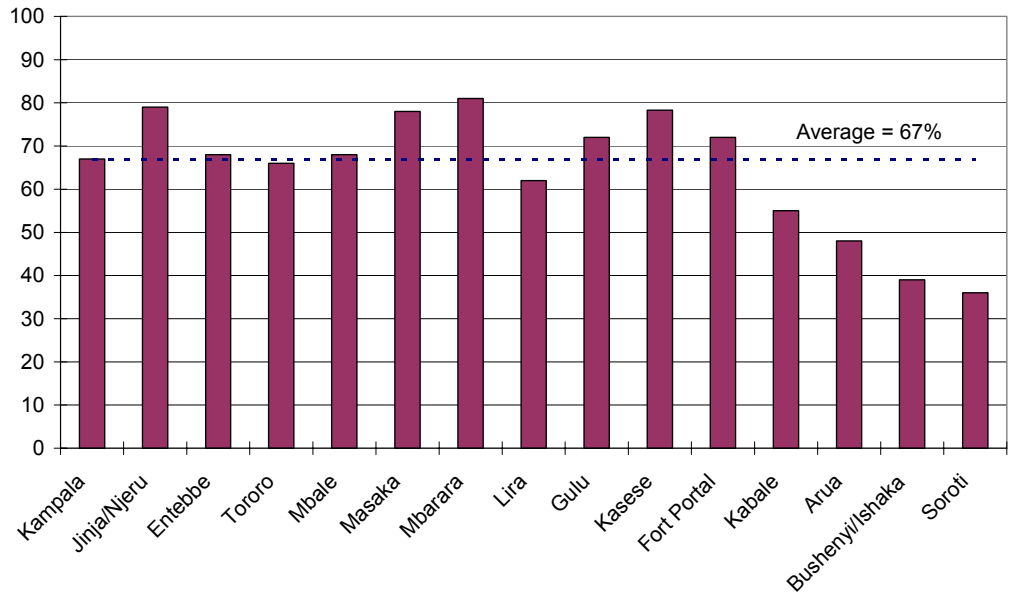


Figure 4.6 New connections in large (NWSC) towns in 2004/5



Urban poor. It has been established that some of Uganda's poorest people live in the urban areas. They tend to be further marginalised than the rural poor as they are not able to engage in subsistence agriculture. The situation in Greater Kampala and slum areas requires special attention. This topic is discussed in more detail in section 3.4.2.

Figure 4.7 Coverage in Large (NWSC) Towns



4.2.5 *Conclusions and Recommendations*

Access to rural water supplies. Currently, access to safe water is defined as an improved water source within 1.5 km of the home. It has been calculated based on an assumed number of users for each water point. However, given the importance of distance for increased consumption and reduced collection time, the acceptability of a walking distance of 1.5 km needs to be reconsidered. In addition, the methods used to compute coverage needs to be improved upon. This includes building on the way that districts currently collect, store and report data on coverage and ensuring that all improved water sources are included.

Rainwater harvesting facilities serve over 18% of the rural population in the wet season (NSDS, 2004). Districts are constructing rainwater harvesting facilities and providing training in construction, and DWD is promoting domestic roof water harvesting through pilot projects. Given the fact that this is an important technology for water supply in Uganda, mechanisms need to be developed to include it in the computation of coverage.

When calculating access, consideration should be given to households which are currently considered as un-served but draw water from sources that they have developed or improved themselves. Such sources can be upgraded to even safer supplies which offer great security of supply. Considering such water sources also overcomes the problem of trying to "*develop a sense of ownership*" in order to ensure that O&M requirements are met. Sources which have been developed by their users are actually owned by the users themselves. This provides one solution to the ongoing issues of O&M and limited available public finances.

Access to urban water supplies. Small and large (NWSC) towns have different ways of calculating access. This makes it very difficult to calculate overall urban coverage. A comprehensive database of water facilities for all 143 small towns is lacking. In addition, there is lack of clarity about whether the coverage (and investment figures) for rural growth centres should be considered as urban or rural. These three issues need to be considered in detail.

4.3 Functionality of Existing Water Facilities

4.3.1 *Introduction*

In the case of rural water supplies, the three 'golden' indicators which relate directly to functionality of rural water sources are:

- Functionality – *"% of water sources that are functional at time of spot check*"
- Community Management – *"% of water points with actively functioning water and sanitation committees"*
- Gender – *" % of water and sanitation committees in which at least one woman holds a key position"*

The indicators regarding gender and community management were defined in 2004. National baseline data for these do not exist but the gender indicator has been included in the new FDS District Reporting formats to be piloted in 2005/6.

In the urban context (large and small towns) functionality is defined as the percentage of active connections in a given town.

This section considers functionality of rural domestic water sources, water for production facilities and urban water supply schemes. The status for 2004/5 and trends are analysed. Chapter 5 provides a detailed analysis of the underlying causes for poor and good functionality.

4.3.2 *Rural water supplies*

Definition. Currently, the indicator for functionality is defined as the "*percentage of functional sources at time of spot check*". However, as no national definition of the term functionality has been set, there may be differences between whether improved sources are categorised as functional or not by Districts.

National functionality trend. The primary data sources for the functionality indicator are the District quarterly reports. Districts categorise improved water sources according to whether they are functional or non-functional. This information is synthesised to derive a national functionality figure. The overall national functionality rate of rural water supplies, increased from 70% in 2003 to 80% in 2004 and 81% in 2005 (Figure 4.8). Although this is within the desired range of 80-90%, the reason for the apparent increase is still not clear.

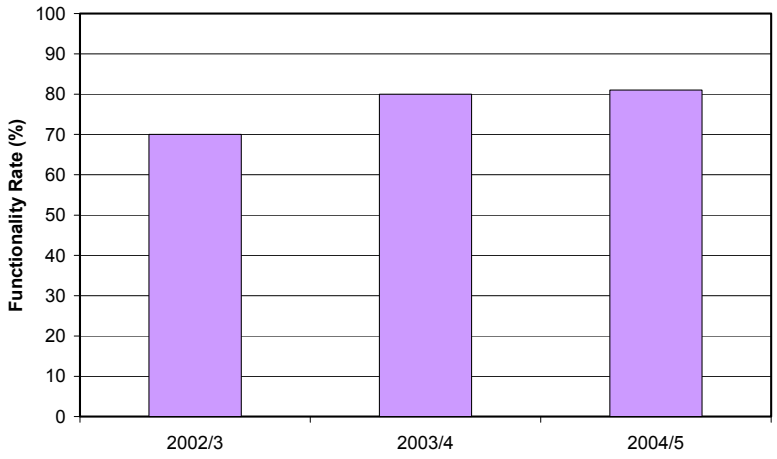
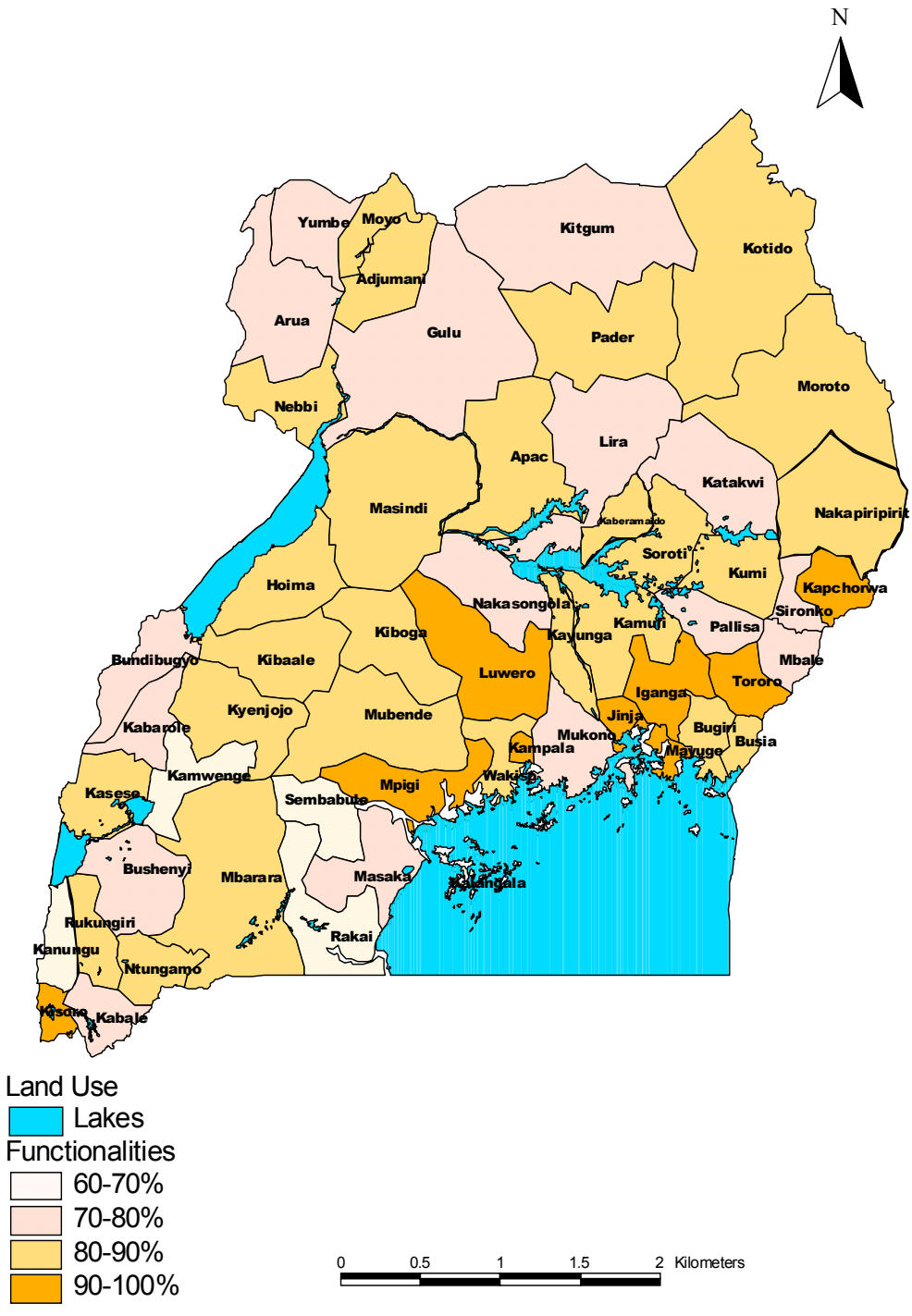


Figure 4.8 Trend in functionality of Rural Water Supplies

Figure 4.9 District Rural Water Supply Functionality - District Situation Analysis (Status) Reports (2004/5)



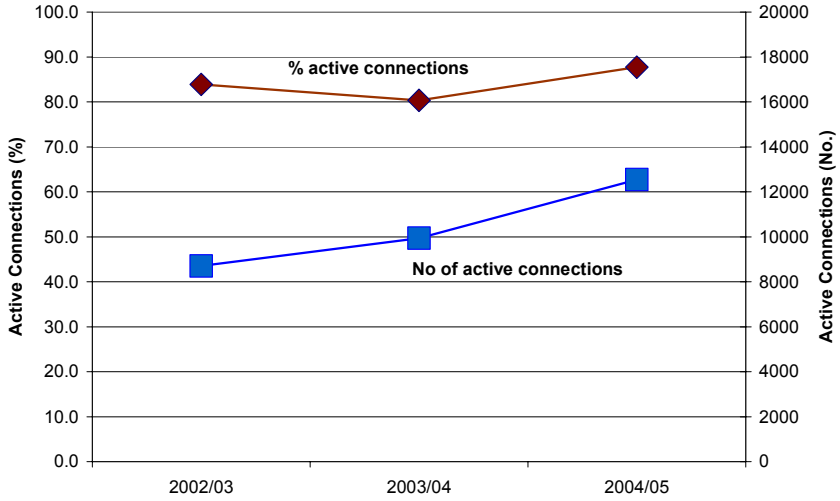
District functionality rates for 2004/5 are presented in Figure 4.9. Supporting data is given in Annex 8. 23 districts fall below the national average of 81%. Districts with the lowest functionality are Kamwenge, Rakai, Kyenjojo, Kalangala, Kanungu and Sembabule. Districts with functionality rates above 90% are Jinja, Kapchorwa, Luwero, Mayuge, Iganga, Mpigi Tororo, Kisoro.

Field visits were made to Iganga[39] and Rakai[40] districts to determine more about functionality rates and underlying causes. The visits found that 96% of a sample of 50 water sources in Iganga District were functional. This corresponds well with the reported figure of 92% by Iganga District. In Rakai, it was found that 24% and 42% of shallow wells with hand pumps were broken down in rural areas and RGC areas respectively. In the case of deep wells, 45% (rural areas) and 25% (RGCs) were broken down. The official figure for non-functionality for Rakai is 37%. Chapter 5 draws on these findings and looks at ways of improving the functionality of rural water supplies in more detail.

4.3.3 *Small towns water supplies*

Definition. Functionality of small towns' water supplies is defined as a the active connections divided by the total connections (expressed as a percentage).

Figure 4.10 Trend in active connections for small towns water supplies



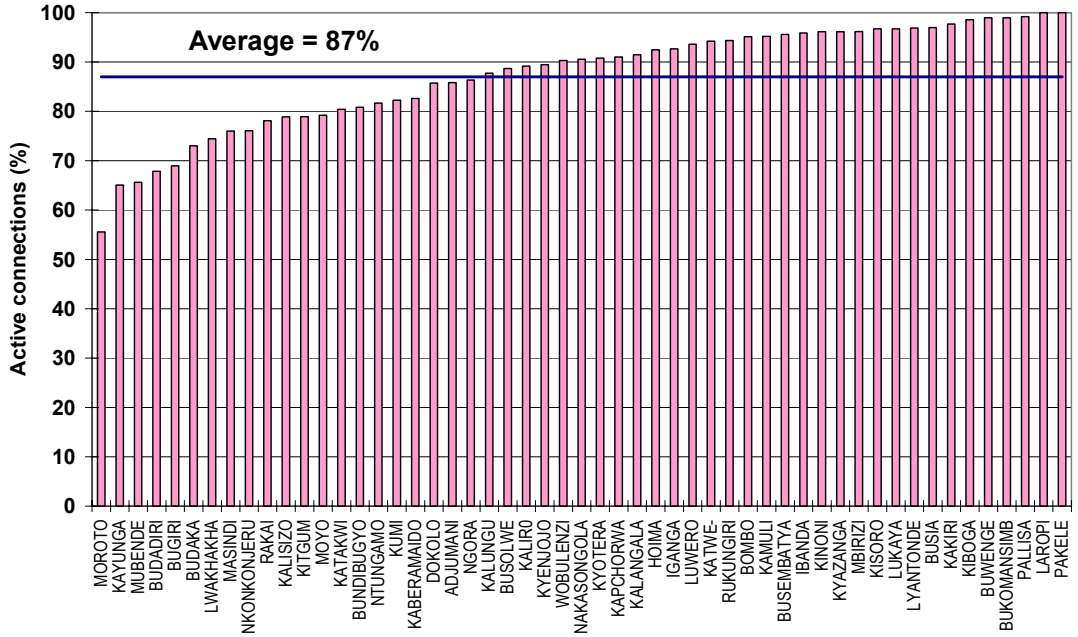
Trends. The percentage of active over the total connections for all piped Small Towns Water Supplies for 2004/5 stands at 87%. Over the last three years, the percentage active connections has been considered to be satisfactorily high, never falling below 80% (Figure 4.10). The drop in 2003/4 was due to strict policies of disconnection for non payment. The positive trend this year is attributed to a more detailed understanding of payment patterns, more flexible bill collection approaches and exercising tolerance.

No of active connections for 2004/5 are shown in Figure 4.11. The average proportion of active connections is 87% with the towns of Wakiso, Pekele, Laropi, Pallisa, Bukomansibi, Buwenge, Kiboga and Kakiri topping the list with over 97% functionality. Moroto, Kayunga, Mubende, Budadiri, Bugiri, Budaka and Kwakhakha have the lowest functionality below 75%. Most inactive connections are due to disconnections for non-payment. This can occur when customers lose interest in the supply (eg construction of adequate rain water harvesting facilities) or landlords opt for disconnection when tenants change.

[39] A spot check conducted on 50 randomly selected water sources in Iganga district

[40] Two case studies on functionality, one by Rakai DWO (point water sources) and the other by TSU and DWO (RGCs) were conducted in 2005. Visiting 34 rural communities and 10 in RGCs, 289 stakeholders (WUC members, Hand Pump Mechanics, LCs and the user beneficiaries) were interviewed.

Figure 4.11 Active connections in small towns water supplies

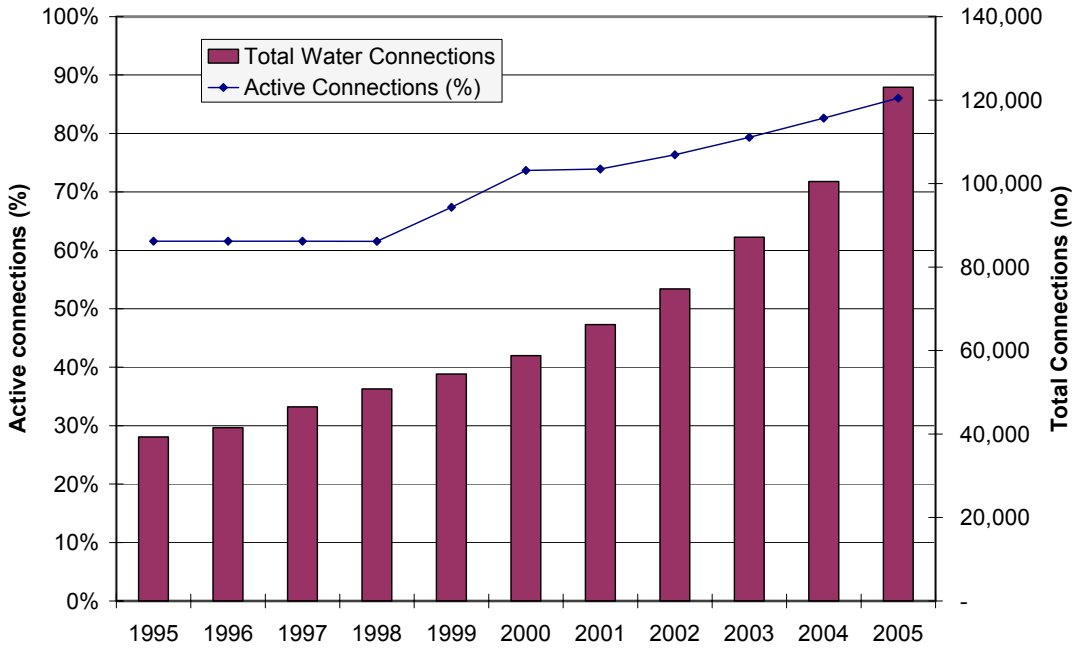


4.3.4 *Large Town (NWSC) Water Supplies*

Definition. Active connections are used as an indication of the functionality of water supplies in large (NWSC) towns.

Trends. Figure 4.12 shows a gradual improvement in the proportion of active connections for large (NWSC) towns over the past 10 years. Throughout this period, active connections have not fallen below 75%.

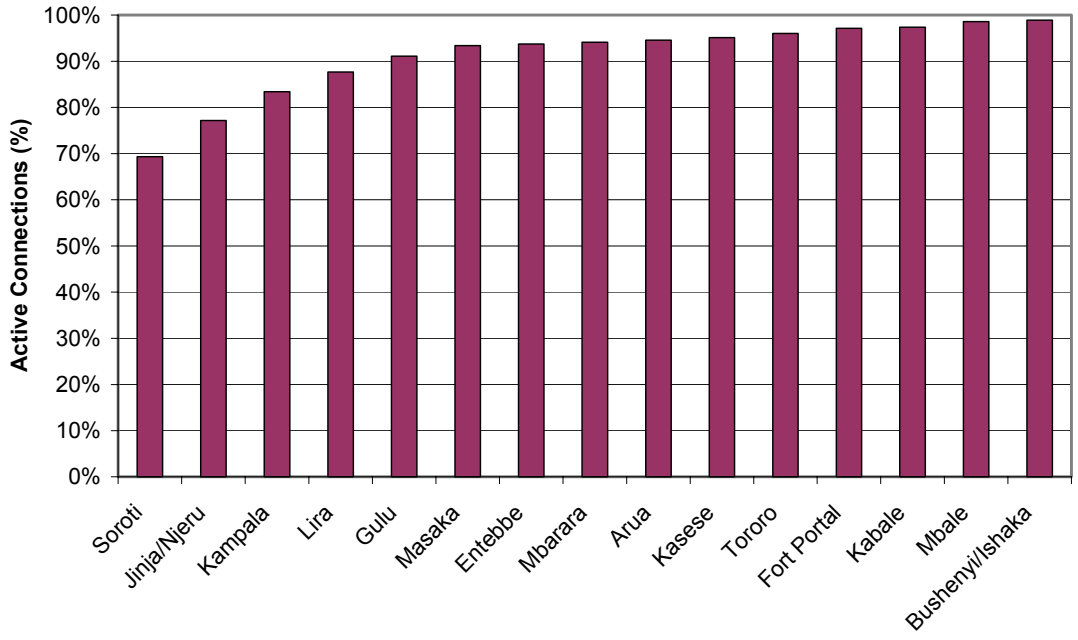
Figure 4.12 Trend in active connections to water supplies in large (NWSC) towns



Active Connections. 83% of connections to water supplies in 15 of the 19 large towns supplied by NWSC are active(Figure 4.13). Kabale, Bushenyi/Ishaka and Mbale are operating at above 95% while Kampala (70%), Jinja/Njeru (74%) and Soroti (74%) have the

lowest percentage of active water connections. When an analysis of household and 'other' connections (eg institutions, commercial) is made, greater variations begin to emerge. With the exception of Arua, the proportion of active household connections (84%) is higher than the 'other' category (77%).

Figure 4.13 Proportion of active connections in large (NWSC) towns



4.3.5 *Conclusions and Recommendations*

District reporting and definitions. The mechanism by which Districts report on functionality needs to be strengthened. This includes improving the data collection formats, providing adequate resources for data collection and providing a clear definition for functionality that can be easily utilised at all levels.

O&M grants. Small towns continue to receive conditional grants for O&M. More analysis needs to be done regarding the impact of these grants, especially for improving the viability of systems (ie through extensions), and thus the urban piped water coverage.

Data on urban functionality. Current analysis of urban functionality considers active connections only. This focuses on the user and does not include sufficient analysis of supply related issues and customer care. The entire water system needs to be considered in analysis of functionality.

4.4 Investment

4.4.1 *Introduction*

The efficiency and effectiveness of the water and sanitation sector is analysed by considering sector investment, budgetary allocations, utilization of funds and outputs vis-à-vis populations served. The *"average cost per beneficiary of new water and sanitation facilities"* is used to indicate value for money in the sector. Targets have been set to progressively reduce the average investment cost of water and sanitation facilities.

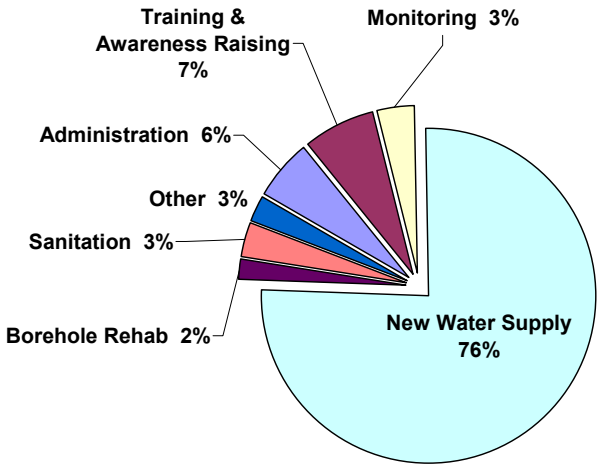
This section examines the budgets and investments for the water and sanitation sector as a whole and for the four sub-sectors. Per capita investment costs are analysed in detail. Information on investments by key NGOs is included.

Key findings of the tracking study (MWLE, 2005) are presented. The tracking study, among other issues reviewed the cost of centrally managed projects. For comparison purposes, two types of cost comparisons were made, (i) investment, based on the cost per capita; (ii) operation and maintenance cost for urban water supplies, based on user charges.

4.4.2 *Rural Water Supply*

Investment. The total DWSCG allocation was UShs 29 bn. for In FY 2004/05, UShs 24.5 billion was spent by 55 districts**41** through District Water and Sanitation Conditional Grants (DWSCG) - directly disbursed to local Governments for the implementation of water and sanitation activities in rural areas. UShs 18.6 bn was invested in the establishment of new water facilities (Figure 4.14). Corresponding physical outputs are listed in section 3.4.

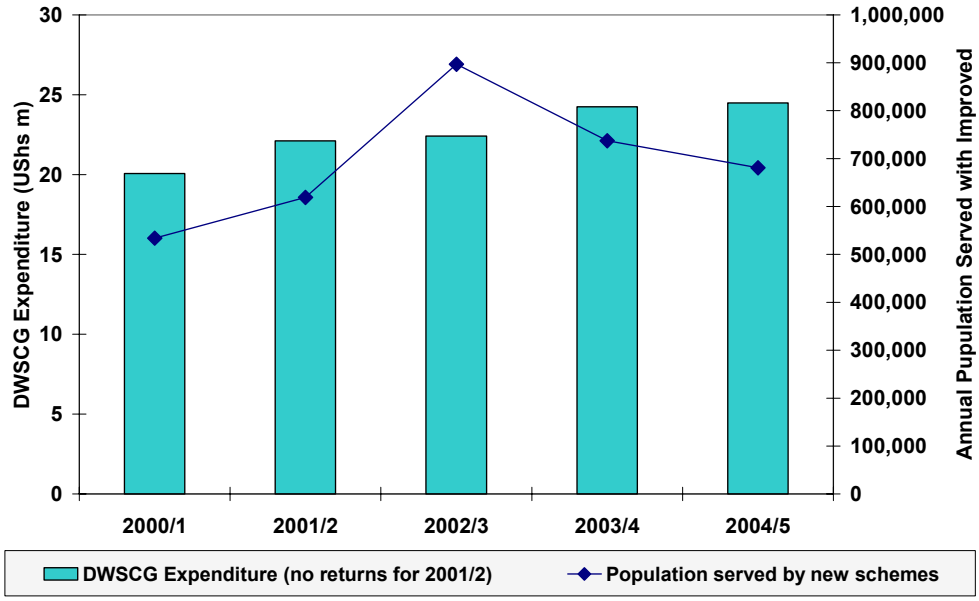
Figure 4.14 Details of 2004/5 District Water & Sanitation Conditional Grant Expenditure[41]



Trends in the annual population served by new water facilities constructed under the DWSCG from 2000/1 to 2004/5 are presented in Figure 4.15. DWSCG expenditure has gradually increased but the annual population served has dropped considerably from 2002/3 to 2004/5. Further analysis is required to examine the underlying causes for this. The trend has worrying implications for reaching the PEAP coverage targets or MDGs given the current sector ceilings and resource allocation for rural water. This is discussed in more detail in section 2.6.

[41] This analysis includes data from all Districts except Moyo, Nakapiripirit, Bugiri, Kapchorwa, Kitgum, Mbarara and Tororo for which data on progress of the fourth quarter had not been submitted in time for this report. This also explains why the total expenditure in this pie chart is UShs 24.5 m.

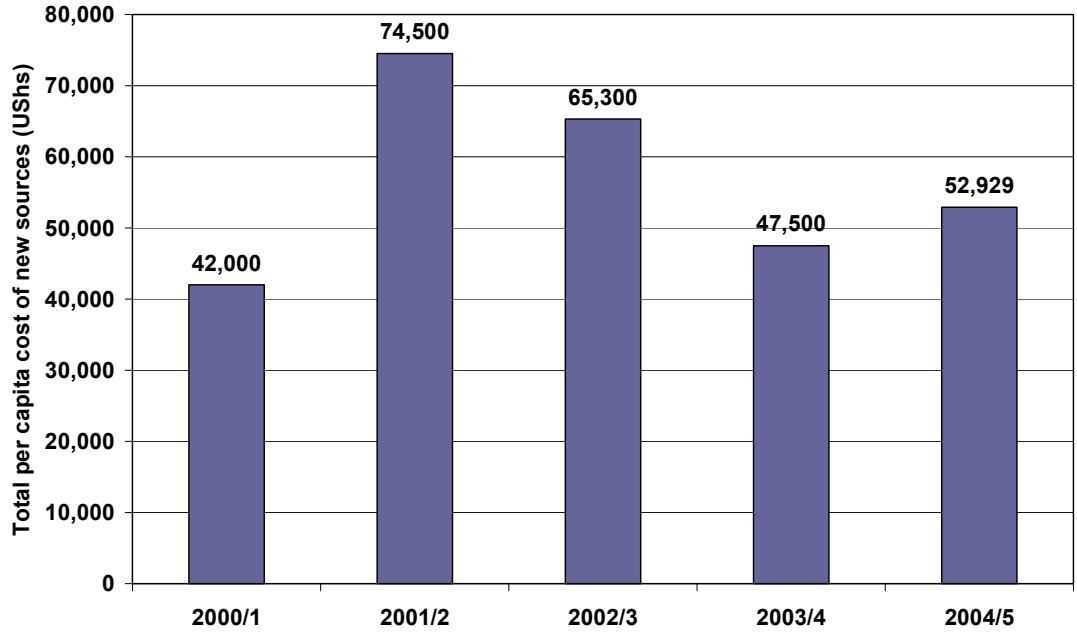
Figure 4.15 Trend in RWSS conditional grant outputs and population served



Per capita investment cost for RWSS is calculated in two ways.

1. **Total per capita investment cost,** which is the rural sub-sector expenditure divided by the total estimated number of people served with new, improved water supplies. Figure 4.16 sets out the trend in total per capita investment cost since 2000/1[42]. There was a considerable decrease from 2002/3 to 2003/4, but the figure for 2004/5 is slightly higher.

Figure 4.16 Trend in total per capita investment in rural water supplies[43]



[42] For consistency with figures from previous years, this data excludes South Western Towns and RGCs constructed by DWD.

[43] For consistency with figures from previous years, this data excludes South Western Towns and RGCs constructed by DWD.

2. **District per capita investment** considers the District Water and Sanitation Conditional Grant (DWSCG) expenditure only, water sources accruing to the grant and estimated population served by the new improved water sources constructed [44]. Average district per capita investment for FY2004/05 has been calculated to be UShs 37,540 (Figure 4.17)

There is considerable variation between Districts, ranging from UShs 14,727 in Sironko to UShs 273,087 in Nakapiripirit. This range can partly be attributed to the different feasible technology options within Districts, and costs associated with areas suffering from insecurity. However, there is also considerable variation in the cost of providing the same technology. The relationship between the per capita cost and coverage (2004/5) is shown in Figure 4.18. The figure suggests that in general Districts with lower coverage (water stressed – ie limited rural water supply technology options) tend to have higher per capita costs. More detailed analysis is required to verify this and examine other reasons for per capita cost variations.

Figure 4.17 District investment cost per capita for rural water supplies (2004/5)

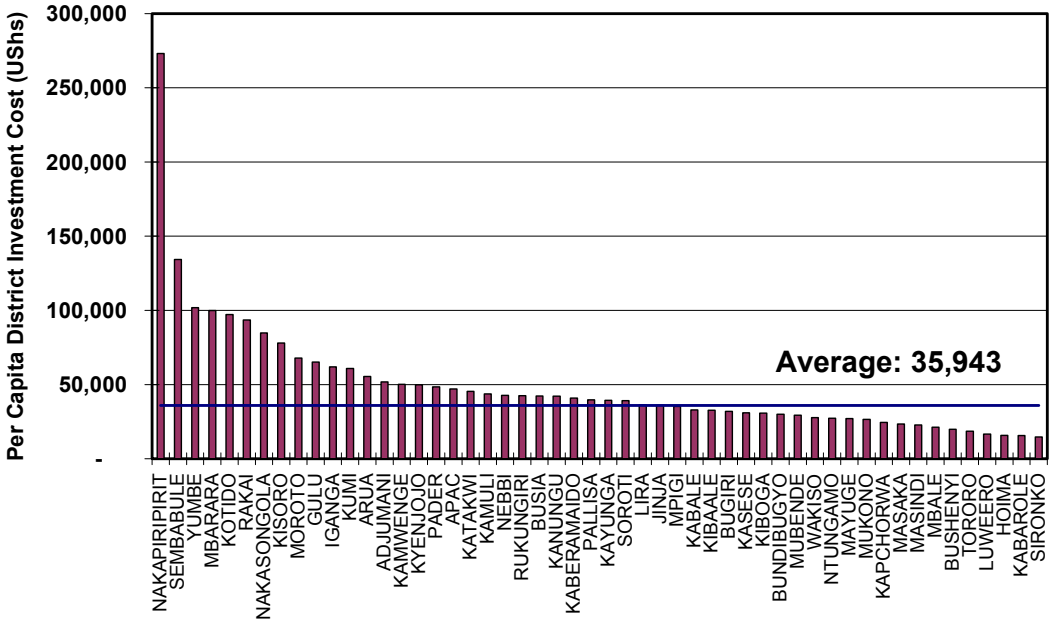


Table 4.3 shows the variation of per capita borehole construction costs for five randomly selected districts. These are compared to those of the JICA programme and for NGOs (MWLE, 2005b).

Table 4.3 A comparison of actual borehole costs (MWLE, 2005b)

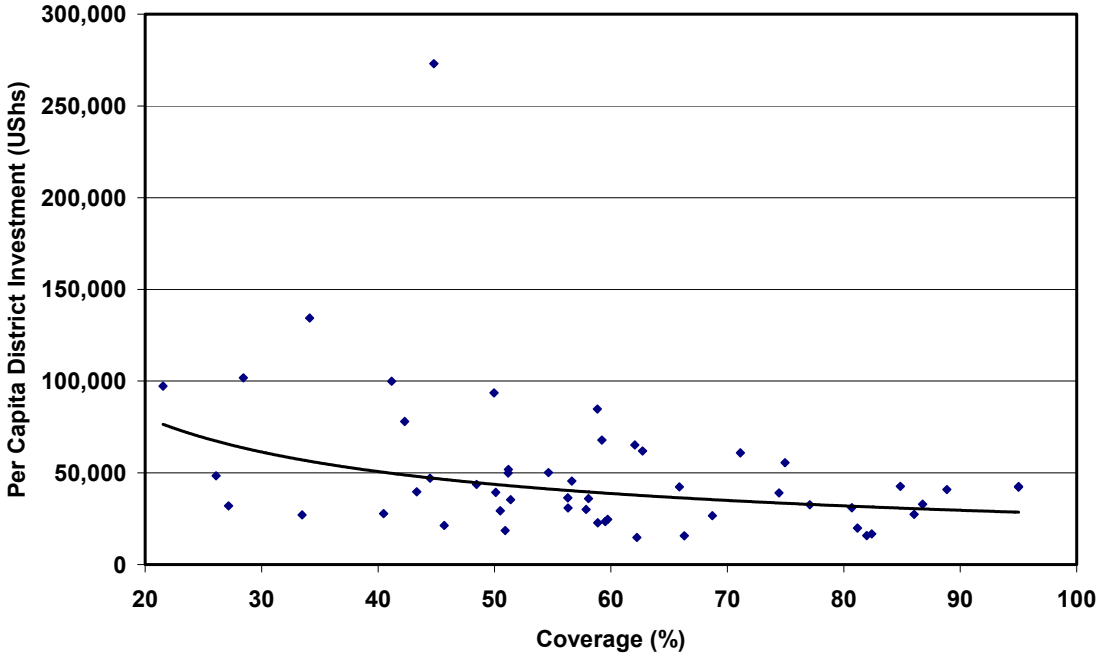
District	Total cost (UShs)	Cost per capita (UShs)	Remarks
Mubende (JICA)	85,000,000	282,200	Executed by Japanese firms.
Wakiso (DWSCG)	14,280,000	47,600	District Programme
Mbarara (DWSCG)	12,750,000	42,500	District Programme
Mukono (DWSCG)	7,650,000	25,500	District Programme
Luweero (DWSCG)	14,365,000	47,600	District Programme
NGO	13,940,000	45,900	

For the JICA funded project, the fact that the consultant and contractor were sourced from Japan, contributed to the higher costs. One of the reasons that the study (MWLE, 2005b)

[44] The number of persons served per water point is assumed to be 300 persons per borehole/shallow well, 200 persons per spring, and 150 persons per gravity flow scheme (GFS tap). Rainwater harvesting facilities are not included.

attributed to cost variances between the Districts was whether lump sum contracts or variable contracts (ie paid according to bills of quantities). The study (MWLE, 2005b) also found that economies of scale and depth of ground water are major contributory factors to differences in unit costs.

Figure 4.18 Average district per capita investment cost vs district coverage[45]



4.4.3 *Rural Sanitation*

Investments in sanitation are made by both Government and NGOs. In the case of Government, sanitation is largely mandate of Ministry of Health (MoH), Ministry of Water, Lands and Environment (MWLE) and Ministry of Education and Sports (MoES) according to a memorandum of understanding signed in 2001[46]. This means there are diverse resource inflows, making it difficult to keep track of the cash inflows into sanitation. This is exacerbated by the fact that funds for sanitation are part of general budget support and not easy to disaggregate from other activities. It is thus difficult to obtain precise estimates of exactly how much money is spent on sanitation activities alone.

However, 3% (UShs 780m) of the District Water and Sanitation Conditional Grant (DWSCG)) for 2004/5 was spent on sanitation activities (Figure 4.14). UWASNET (2005b) found that twenty three NGOs/CBOs in Uganda invested UShs 700m over a six month period (Table 4.4). Given that there are an additional 70 NGOs/CBOs in the sector for which the investment in sanitation was not captured, the NGO/CBO inputs are likely to be considerably higher than this and may even be more than the DWSCG investments.

However, a consultancy assignment has commenced to prepare a 10-year integrated strategy and medium-term operational plan for the sanitation sector in Uganda. The work will also outline the roadmap for achieving the national MDG and PEAP sanitation targets (71 and 80% respectively) and ensure impact of improved sanitation and hygiene on related MDGs.

[45] Coverage according to the *District Situation Analysis* has been taken.
[46] The roles and responsibilities of these Ministries are set out in section 2.4.2

4.4.4 *Sanitation in Rural Growth Centres*

Sanitation activities in Rural Growth Centres have been carried out in line with the mandate of the Directorate of Water Development. Hygiene education has been carried out as a key component of better living condition of communities focusing on handwashing campaigns, solid waste management, safe water chain and personal and household hygiene.

Physical facilities constructed as part of sanitation promotion in rural growth centres have been limited to ecological sanitation toilets including training programmes for proper use and replication at household level. This has been carried out to demonstrate the most appropriate option of sanitation in situations of limited land for expansion in these centres, in addition to low water use and a solution to difficult ground conditions.

4.4.5 *School Sanitation*

The PEAP (MoFPED, 2004, pp 157) states that priority actions in primary education includes the *"Continued provision of classrooms and latrines with hand washing facilities".'*

The budget for 2003/04 allocated UShs 309.31bn for district primary education (UShs 59.78 bn for development and 249.53bn for recurrent) (MoES, 2004). Primary education accounts for 61.9% of total recurrent expenditure on public education. This amounts to an annual recurrent expenditure of UShs 38,729 per pupil. Sanitation is a vital component of the school set up it, and construction of new facilities includes a budget line for it. However, the key challenge is mobilising resources for O&M and replacement of old facilities.

4.4.6 *Small Towns and Rural Growth Centres*

Capital Investment. In FY 2004/5, piped water supply schemes were completed for seven small towns and six RGCs at a total cost[47] of UShs 13,246,232,394 (see section 3.3.3 and section 3.4.2). 77% of this investment was for small towns schemes which currently serve an estimated 61,000 people and are designed for 138,324. The RGC schemes serve an estimated 21,000 and are designed for a population of 28,351.

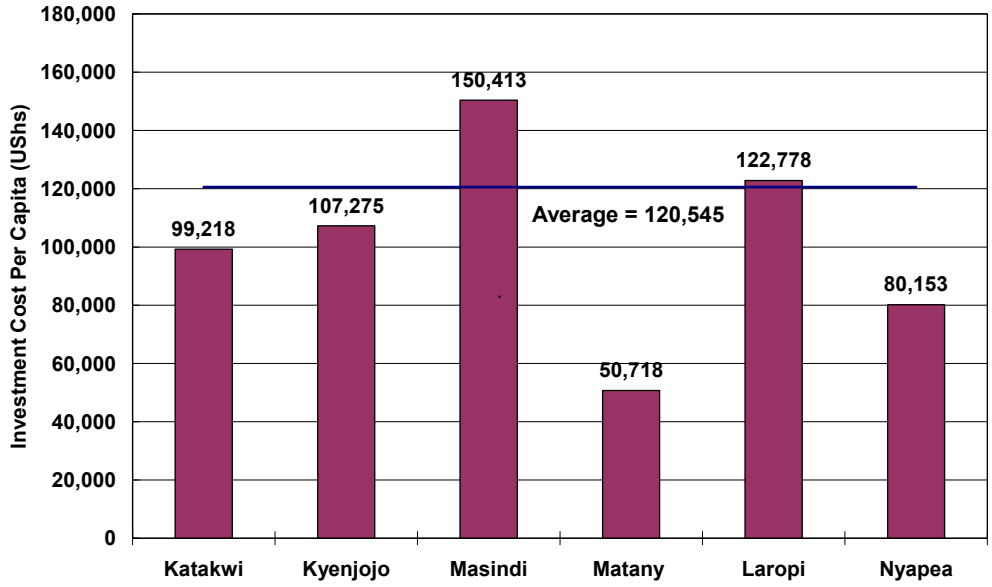
Per capita investment cost. The average per capita investment cost[48] for small towns completed in FY 2004/5 was UShs 120,545. This was well within the target per capita investment cost of UShs 140,000 ($80) for the given financial year. The per capita investment ranged from UShs 50,718 in Matany to UShs 150,413 in Masindi town (Figure 4.20). The high per capita costs in Masindi is due to the water source - a swamp which requires a full conventional treatment plant, thus resulting in a relatively high investment cost.

Only new schemes have been used to calculate the per capita investment cost. However, in addition, Adjumani and Moyo were rehabilitated and expanded in 2004/5 at a cost of UShs 197m and UShs 622m respectively.

[47] Costs include design and construction supervision, hygiene and sanitation education, community mobilization, borehole drilling and the construction.

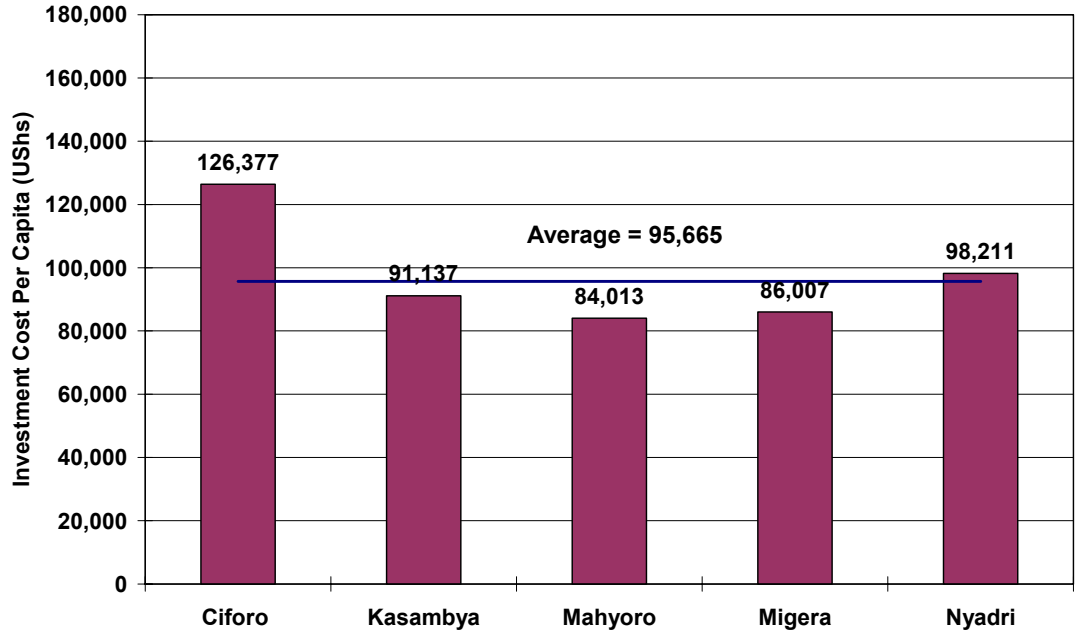
[48] Calculated as total investment cost divided by design population. Design population considers domestic population only.

Figure 4.19. Per capita investment costs (UShs) Small Towns completed in FY 2004/5[49]



The average per capita investment cost[50] of the RGCs was UShs 95,665. This is below the targeted per capita investment cost of UShs 101,500. Per capita investment costs ranged from UShs 84,013 in Mahyoro to UShs 126,377 in Ciforo (Figure 4.20).

Figure 4.20 Per capita investment costs (UShs) Rural Growth Centres completed in FY 2004/5[51]



Operation and Maintenance. 61 small towns have operational piped water supplies of which 57 are operated by the private sector. This include five which run under the South Western towns water supply umbrella organisation. An additional four are run by the town

[49] Details of costs are given in annex 6
[50] Calculated as total investment cost divided by design population.
[51] Details of costs are given in annex 6

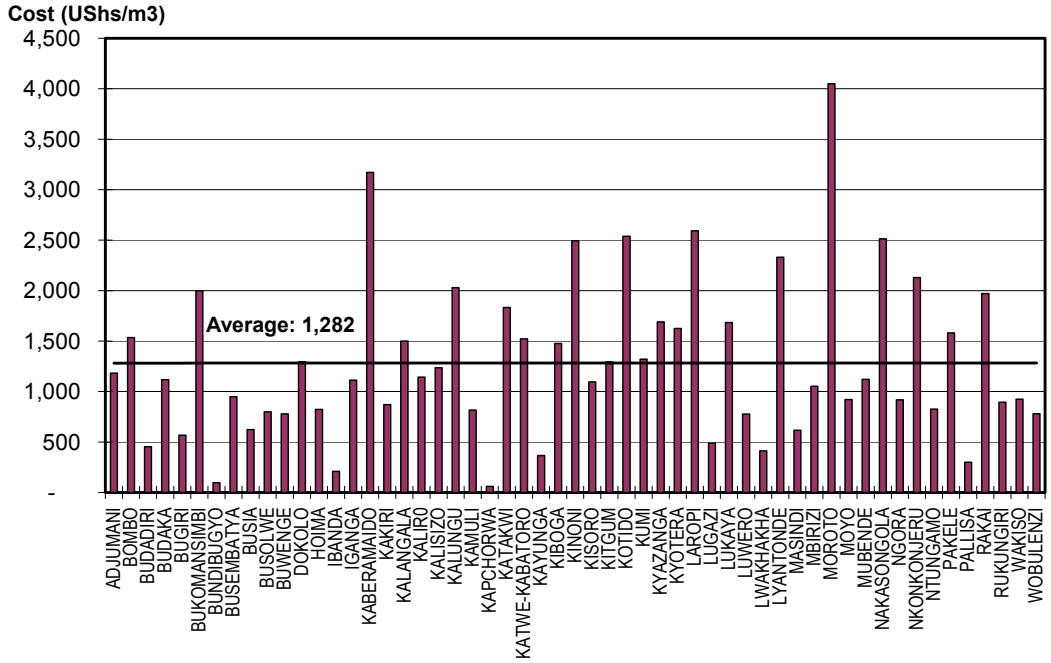
council[52]. Five small towns are at the tendering and construction stage[53]. It should be noted that this is dynamic situation.

The average unit cost of producing water in the small towns (UShs 1,282 per m^3) is three times that of the large towns (UShs 408 per m^3). The unit cost of production for the small towns varies from UShs 60 per m^3 in Kapchorwa to UShs 4,049 per m^3 in Moroto (Figure 4.21). The higher unit production costs for small towns result in higher costs to consumer than for the large towns. The tariff in the small towns for 2004/5 was 20 to 50 UShs/20liters as compared to NWSC's tariff of 11 UShs/20liters. This has negatively affected the accessibility of clean and safe water to the poor in the small towns. It should be noted that the cost of the water to the consumer is higher than the tariff when the water is not piped into the home.

In the case of the small towns, the revenue collected covers 76% of their O&M costs on average. Thus small towns have to rely on subsidies provided by the Government to cover the O&M costs and undertake any extensions to the systems. Revenue collection efficiencies for the FY 04/05 in the large and small towns are both 89 %.

Clearly the per unit production costs for Moroto and Kabermaido are considerably higher than for the other small towns. This is mainly because these water supply schemes are not connected to the electric power supply and rely primarily on diesel generators. Bundibugyo, Ibanda and Kapchorwa costs are extremely low as these schemes are gravity fed.

Figure 4.21 Small Towns - Cost per unit of Water Produced

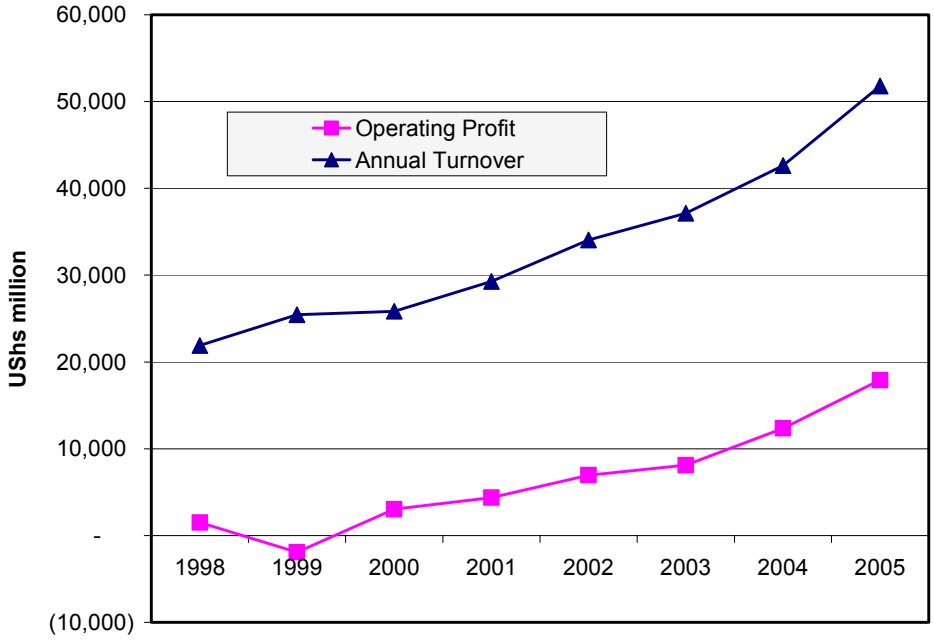


4.4.7 *Large (NWSC) Towns*

Annual turnover and operating profit of NWSC in FY 2004/05 was UShs 51.7bn and UShs 17.9 bn respectively. The utilization of internally generated resources for investments was UShs10 bn.

[52] Kyotera, Moroto, Apac and Kotido
[53] Sembabule, Nebbi, Mpigi, Kigumba, Pakwach

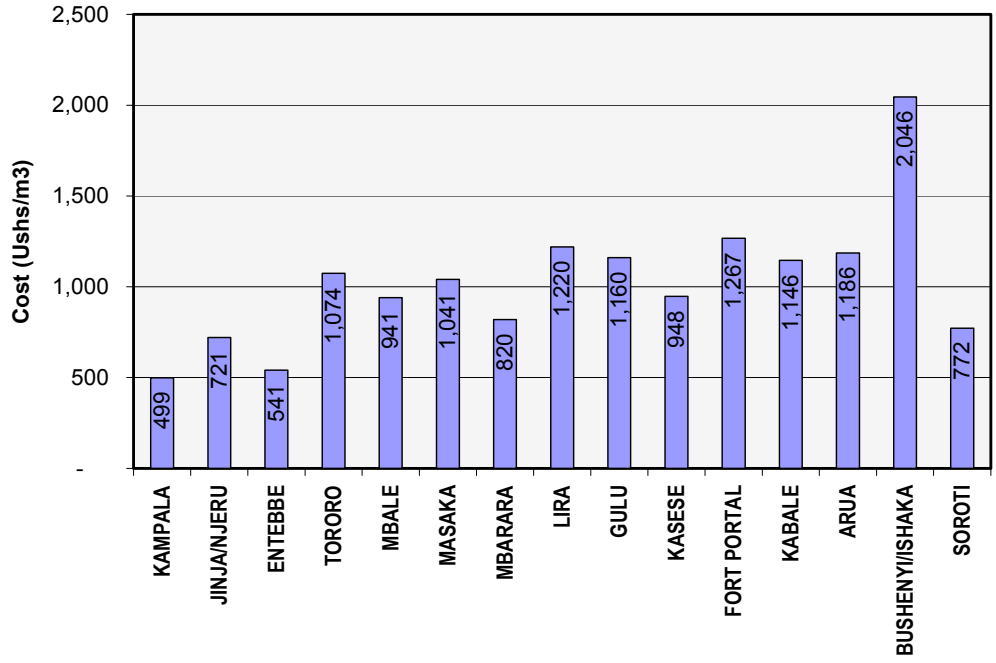
Figure 4.22 NWSC Annual Turnover and Operating Profit (2005)



Unaccounted for water (UfW) reduced from 51% in 1998 to 33.4% in FY 2004/05. In Kampala it reduced from 55% to 40% while in other areas it reduced from 43% to 16.8%.

Operation and maintenance. Large (NWSC) towns cross-subsidise each other through the uniform tariff structure and are thus able to meet their O&M costs from the revenue collected. 15 out of the 19 large (NWSC) towns have an average unit cost of producing water of (408 UShs /m^3). The unit cost of production varies from 282 UShs /m^3 in Kampala to 1,386 UShs /m^3 in Bushenyi/Ishaka (Figure 4.23). The large towns are able to wholly meet their O&M costs from the revenue collected. Revenue collection efficiencies for the FY 04/05 in the large towns and small towns are both 89 %.

Figure 4.23 Large (NWSC) Towns - Cost per unit of Water Produced



4.4.8 *NGO Investments*

Within the water and sanitation sector in Uganda, NGOs and CBOs implement physical water and sanitation projects, and engage in policy advocacy for social and economic justice. The contribution made by these organizations, though significant has not been adequately reflected over the years. In general improved water sources constructed by NGOs/CBOs are not captured in the DWD-MIS data and thus not reflected in official coverage figures.

UWASNET (2005b) has a membership of 100 NGOs/CBOs implementing water and sanitation projects. Although there are some NGOs/CBOs involved in the water and sanitation sector which have not joined, most NGOs/CBOs operating in Uganda are members of UWASNET. In order to improve the understanding of investments in the water and sanitation sector as a whole, UWASNET has undertaken an analysis of the contribution 23 of its members. This is the first step towards comprehensive reporting on NGO/CBO investment in Uganda. The UWASNET Secretariat is progressing towards the collection and synthesis of this information on an annual basis.

Table 4.4 sets out the investments made in the sector by 23 (23%) of its membership in 2004/5. In order to avoid double reporting, the investments reported do not include investments realised due to grants from the Government of Uganda Joint Partnership Fund, Local Government Development Programme (LGDP) funds, District Conditional Grant and any other funding from Local Governments. Out of the 23 NGOs/CBOs six are international NGOs, seven are faith based organizations, eight are local NGOs and two are CBOs.

Table 4.4 NGO/CBO Investments of 23 UWASNET Members (UWASNET, 2005b)

	Investments	
	Six month (July – Dec 2004)	**Annual (2004/5)**
	Reported by 23 NGOs/CBOs	**Estimated for 23 NGOs/CBOs**
Water supply	UShs 2,847m	UShs 5,693m
Sanitation	UShs 695m	UShs 1,380m
Total	**UShs 3,542m**	**UShs 7,082m**

In some cases NGOs/CBOs did not separate funds invested in sanitation from water investments because of the integrated nature of their activities. The sanitation investment thus only represents that of 14 UWASNET members. Funds invested in lobbying and advocacy were also mainstreamed into water supply activities.

Table 4.5 sets out the NGO/CBO achievements for the above investments. Assuming the same number of users per source as DWD uses for the DWD-MIS data[54], these 23 NGOs/CBOS have served an estimated 92,547 people with improved new water sources (from new springs, handpumps, GFS taps and rainwater harvesting (RWH) facilities) plus 12,200 people with rehabilitated sources. Including the new users of new facilities only, the per capita investment for new sources is approximately UShs 30,000.

The estimated annual contribution for the 23 UWASNET members is over UShs 7bn. Since UWASNET has a membership of over 100 NGOs/CBOs, and there are other organisations active in the sector which are not members, this initial analysis suggests that there are substantial NGO/CBO investments Uganda.

[54] Assuming the following no of users: handpump – 300, spring – 200, gfs tap – 150. Household rainwater – 4. Community rainwater has been excluded from the analysis.

Table 4.5 Water Supply Outputs for 23 UWASNET members (UWASNET, 2005b)

	Deep well new (rehab)	Shallow well new (rehab)	Spring new (rehab)	RWH hh/com	GFS taps	Piped taps
Apac	2 (9)	6	2			
Bugiri			2			
Bushenyi				27		
Kabale			6	604/4	21[55]	
Kampala				0/3		8
Kamwenge		57	33			
Kasese			(5)	15		
Katakwi	54 (22)	9		0/1		
Kumi		7 (4)	2 (1)			
Kyenjojo		17	9 (1)			
Lira	2 (1)	12				
Masaka		11				
Mbarara				22/8		
Mpigi		11	7			
Mukono		4	4	13		
Soroti		3				
Wakiso		34	19			
Total	**58 (32)**	**171 (4)**	**84 (7)**	**681/16**	**21**	**8**

4.4.9 *International Comparisons*

The tracking study (MWLE, 2005) compared the per capita costs of centrally managed water supply in Uganda with several other African countries (Table 4.6). The calculation of investment costs included the cost of the consultancies leading up to design and tender documentation, cost of construction and supervision, cost of mobilisation and community participation, cost of sanitation facilities and hygiene education sensitisation for beneficiaries. Office overhead costs, including salaries and allowances for DWD based staff, were assumed to be 10% of the total cost.

Table 4.6 International per capita cost comparison of water supply (MWLE, 2005)

No	Country	Average per Capita Costs	
		US$	UShs
1	Uganda	50-100	85,000 – 170,000
2	Kenya	40-80	68,000 – 136,000
3	Tanzania	40-70	68,000 -119,000
4	Ghana	60-100	102,000 – 170,000

Costs of water service delivery are higher in Uganda partially due to the level of additional support infrastructure added to the construction contracts for water supply systems. Support infrastructures include access roads, telephone, electric grids, sanitation facilities. It may be possible to bring down costs by improving procurement practices, ensuring that technologies are appropriate to local conditions, and sourcing cheaper local contractors and spare parts (MWLE, 2005).

For most of the sampled projects, sizeable amounts of funds were spent on consultancy services like pre-feasibility studies, feasibility studies, design studies.. Some of these studies look unnecessary and are a duplication of previous reviews of socio-economic conditions, income and expenditure levels. There is a clear need for rationalisation and harmonisation in this area (MWLE, 2005).

[55] Two GFS schemes

Most of the works designs seen during the Tracking Study work were considered to be either extravagant or redundantly costly. Also, in relation to DWD design requirements, a number of designs were inadequate leading to numerous Cost Addendums during the Construction Supervision Stage. Furthermore, none of the water works visited had an Operation and Maintenance Plan (MWLE, 2005).

The lack of capacity of local contractors and consultants inevitably increases the cost of projects. The rate of man-month costs of foreign consultants in relation to local consultants is extremely high (an average ratio of 8:1). Although in some cases it is part of donor condition, the Uganda Government should fix a percentage of local and foreign inputs, e.g. 50% local and 50% foreign, for both construction and consultancy contracts as part of capacity building (MWLE, 2005).

Tenders usually require a high turnover for the last 5-10 years, thus eliminating some local contractors from the tendering process. Additionally, the cost of bid performance security can be high and not be easy for local contractors to comply with (MWLE, 2005).

Finally, compared with neighbouring countries, Uganda is a high cost investment location, largely because of the high cost of all forms of energy and utilities. This translates into high unit costs all round, especially for labour, transport and communication (MWLE, 2005).

4.4.10 *Conclusions and Recommendations*

Investment in rural water supplies. Current improvements in rural water supplies since 2001 are barely ahead of the high population growth. Preliminary analysis suggests that at least UShs 52 bn per annum is required to meet the target of 77% coverage in rural areas as compared to the current investment of UShs 30bn. The required levels of investment and costs of rural water supply need to examined in more detail and allocation revised if this target is to be met. In addition, allocation mechanisms between districts need to be re-examined given the range of coverage and investment costs. More in depth analysis of investment at District level is required in order to examine the reasons for the wide range in District per capita investment costs.

NGOs. Given the contribution NGOs/CBOs are making to increase access to safe water and sanitation in Uganda, the efforts of UWASNET to capture NGO inputs in the sector should be further strengthened. It is recommended that Government and, in particular key sector donors should boost NGO/CBO involvement by providing mechanisms to enable them to access more funds. Improved collaboration between NGOs/CBOs and Government at all levels is required.

4.5 Hygiene and Sanitation

4.5.1 *Introduction*

"*We shall not finally defeat AIDS, tuberculosis, malaria, or any other infectious diseases that plague the developing world until we have also won the battle for safe drinking water, sanitation and basic health care*".[56] The provision of sanitation is a key development intervention and without it, ill health dominates a life without dignity[57]. Simply having access to sanitation increases health, well-being and economic productivity. Inadequate sanitation impacts on individuals, households, communities and countries. Despite its importance, achieving real gains in sanitation coverage has been slow (WHO, 2004).

The spread of diarrhoeal diseases[58] is strongly related to lack of latrines and hand washing facilities. Hand washing with soap reduces diarrhoea by more than 40% and cases of hospitalised diarrhoea, cholera and dysentery by more than 50% (WELL, 2004). It also reduces acute respiratory infections by 50% (Luby et al, 2005). Where these facilities exist the outbreak of diarrhoeal diseases is often due to their poor use and or inaccessibility to safe water.

Uganda suffers from a particularly high infant mortality rate (IMR). Between 1995 and 2000, IMR increased from 81 to 88 deaths per 1,000 births and under five mortality increased from 147 to 152 deaths per 1,000 births. Maternal mortality rate fell only marginally from 527 to 505 per 100,000 live births in the same period. The underlying causes include poor hygiene and sanitation and one of the five policy interventions singled out as the most effective steps within GOU reach to reduce IMR and MMR in Uganda is sanitation (MoFPED, 2004b). Uganda has also recently suffered from several cholera outbreaks. These realities lend their support to the high importance that has been given to hygiene and sanitation in the PEAP (MoFPED, 2004). Personal hygiene and domestic sanitation are considered as urgent short term priorities under pillar 5.

This section tackles issues of sanitation and hygiene both in households and primary schools. Definitions of sanitation from a global to a local perspective are presented. Areas of focus are latrine coverage and hand washing trends and their implications; sanitation in primary schools; appropriate sanitation technologies; and finally a look at key issues and recommendations.

4.5.2 *Defining Sanitation*

In Uganda's context environmental sanitation encompasses the promotion of skills and practices that enable individuals, families and communities to have a clean and healthy environment. The concept focuses on proper disposal of human excreta and keeping of drinking water safe to the point of use and adopting high levels of personal, domestic, public and food hygiene. It also reflects on ensuring safe management of solid and liquid wastes including health care wastes and protecting households against vectors and rodents, especially those of public health importance. It should also be noted that environmental sanitation is a subset of environmental health, rather than being synonymous with it.

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[56] Statement by Kofi Annan, United Nations Secretary-General.

[57] Global estimates are that about 1.8 million people die every year from diarrhoeal diseases (including cholera) 90% of these deaths are children under 5 years and mostly take place in developing countries such as Uganda. Typically the fraction of diarrhoeal diseases attributed to unsafe water, sanitation and hygiene in the industrialized countries is approximately 60% and as much as 85-90% in developing countries (WHO, 2005).

[58] Infectious diarrhoea is the largest water-related contributor to global disease burden. Infectious diarrhoea commonly includes cholera, salmonellosis, shigellosis, amoebiasis, and other protozoal and viral intestinal diseases. Schistosomiasis, trachoma, ascariasis, trichuriasis, hookworm and other diseases are also related to water, sanitation and hygiene risk factors.

It can be seen that sanitation refers to personal and environmental cleanliness. Sanitation is more than the promotion of latrines. Traditionally in Uganda, the term sanitation has a broad meaning and includes not only health aspects but social aspects like self esteem, enlightenment and admiration (MoH, 2003a).

4.5.3 *Domestic Latrine Coverage*

Latrine coverage. The safe disposal of human and other wastes is important for disease control. In Uganda, the practices associated with the disposal of human wastes poses a huge threat to health. According to the Annual Health Sector Performance Report FY 2003/04 (MoH, 2003b), latrine coverage stood at 57% in June 2004. This was below the set target of 60%. The figures for FY 2004/05 will be available in October 2005.

District latrine coverage is shown in Figure 4.24. The figures vary considerably throughout the country from 94.4% in Rukungiri to 2% in Kotido. The best five performing districts are Rukungiri, Kanungu, Kabale, Kabarole and Masaka. The five Districts with lowest coverage are Kotido, Nakapiripirit, Pader, Moroto, and Kitgum.

Changes in latrine coverage between 2002/3 and 2003/4 are shown in Figure 4.25. 51% (29 districts) increased their latrine coverage with increases of over 20% in Busia, Kabarole and Mayuge districts. This has been partly attributed to effective home improvement campaigns and active District Water and Sanitation Committees (DWSC). Eleven Districts (20%) experienced a decline in latrine coverage. Wakiso and Rakai districts had the highest decline with 18% and 10.1% respectively.

Figure 4.24 Latrine Coverage (HIASS - MoH, 2003b)

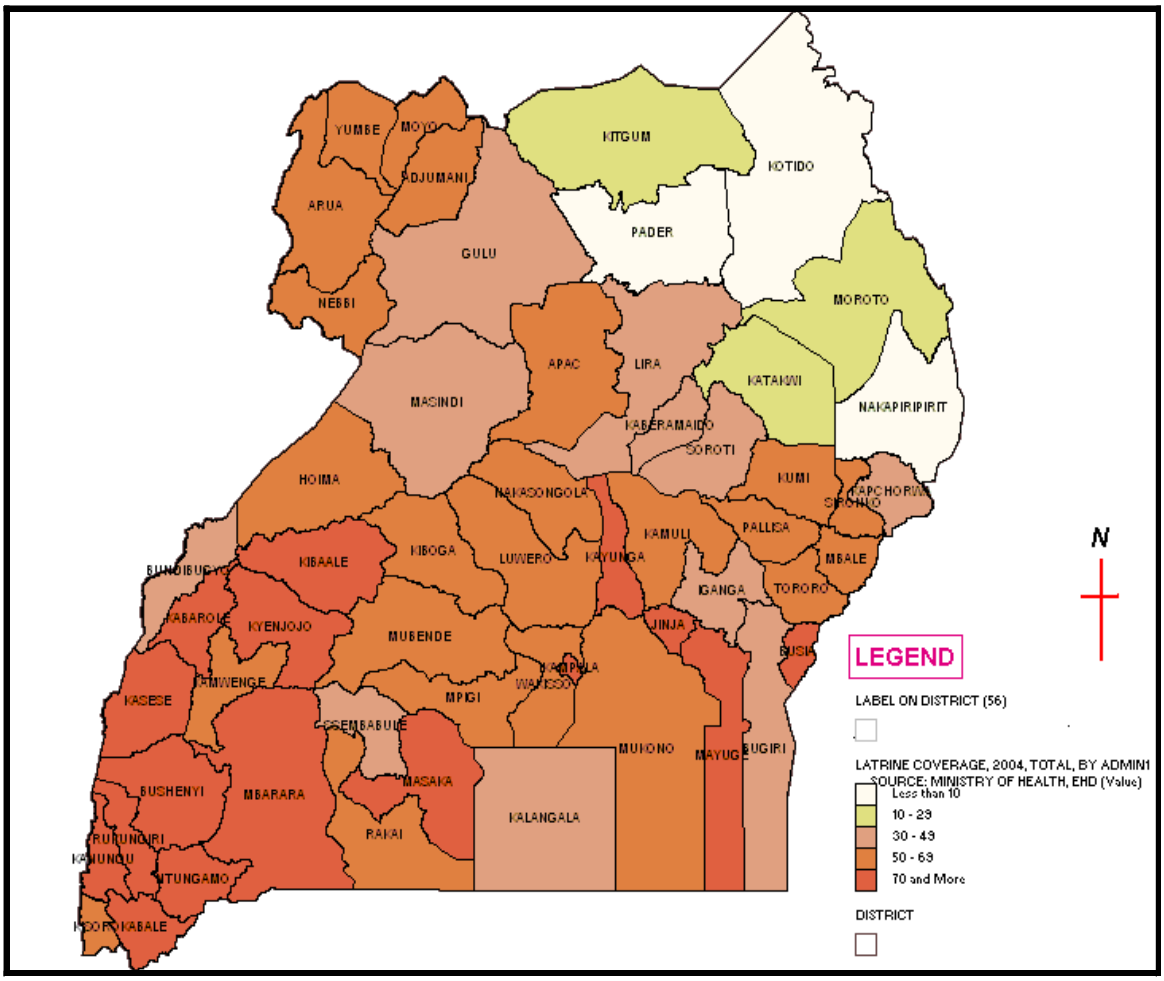
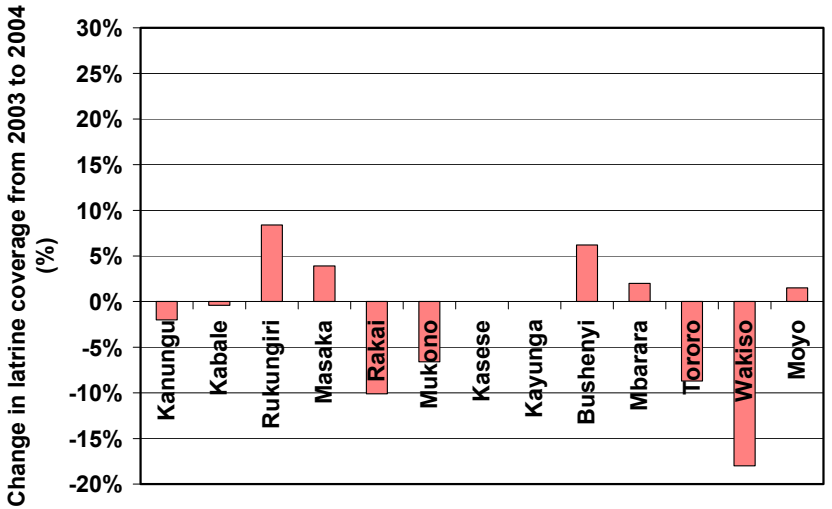
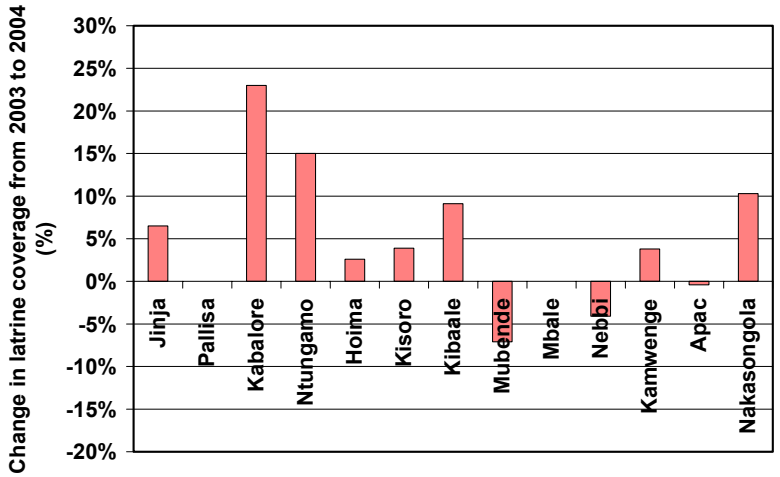


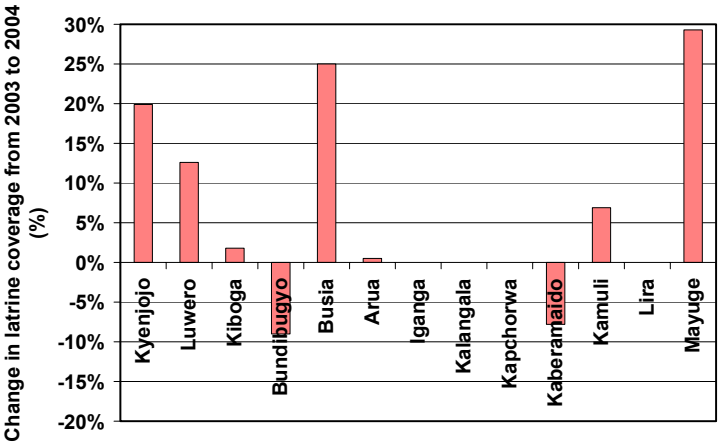
Figure 4.25 Changes in Latrine Coverage (2003 to 2004)



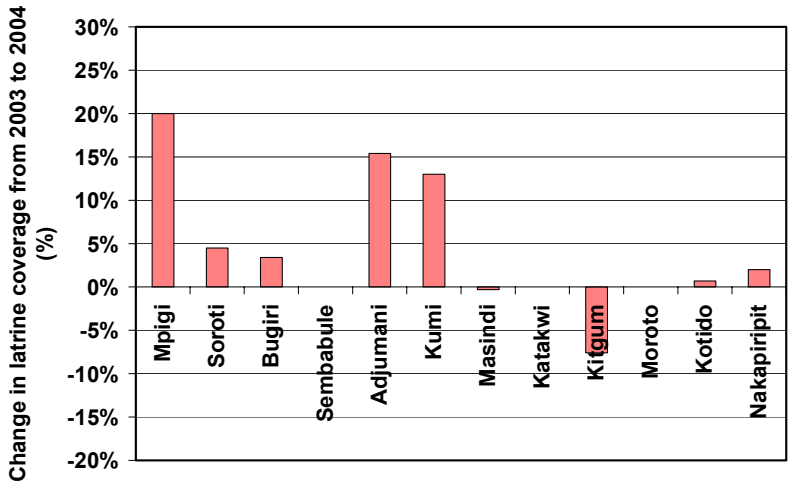
Cluster 1: 2004 Coverage Range - 65% to 95%



Cluster 2: 2004 Coverage Range – 55.4% to 64%



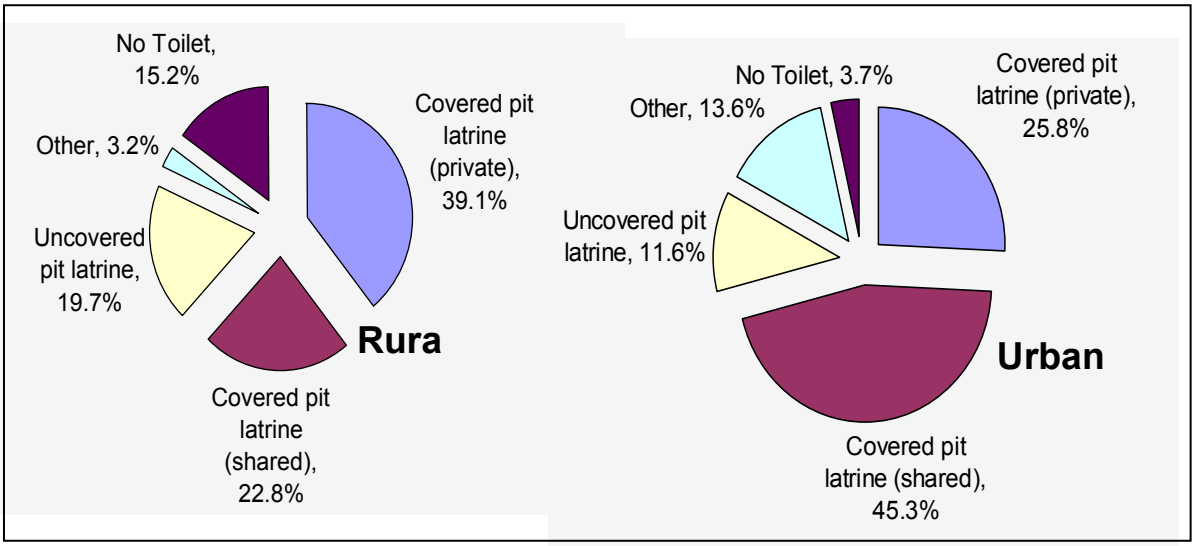
Cluster 3: 2004 Coverage Range – 46% to 55.3%



Cluster 4: 2004 Coverage Range – 0.8 to 55.4%

The NSDS (2004) found that 45% of urban dwellers use shared covered pit latrines and 39% of users in the rural areas use private covered pit latrines (Figure 4.26). The wide difference in sanitation coverage in rural areas between the HIASS (57%) and NSDS (81.6%) is likely to be due to different definitions and sampling approaches[59].

Figure 4.26 Distribution of Sanitary Facilities (NSDS, 2004)



Box 4.2 Sanitation Practices in Bushenyi & Sembabule (PM Field Visits, 2005)

Findings from PM field visits by EHD and MoES indicate that of the 26 households visited in Sembabule[60], three did not have latrines. It was quite evident from the observation of the latrines that all the households were using them regularly. In Bushenyi district[61] four households out of 31 did not have latrines. All the households that had latrines were using them, although the level of cleanliness and maintenance differed considerably.

In both Sembabule and Bushenyi districts there was a good practice of using cow dung mixed with sand to smear and smoothen the floor and walls of the latrines made of mud and wattle. With regular cleaning/sweeping with ash the toilets looked very neat and comfortable to use. It was also observed that some households use soft leaves (stored in one corner of the latrine) as anal cleansing materials.

All 57 households visited in both Bushenyi and Sembabule districts did not have any hand washing facilities. On close inquiry it was found out that although the respondents knew the importance of hand washing in breaking the transmission of diseases they were reluctant to put them in place due to various reasons. The reasons included children removing the small jerry cans and misplacing them, scarcity of water (especially in Sembabule district) and shear lack of initiative.

[59] The NSDS definition of a latrine includes both covered and uncovered pits. The HIASS defines according to the WHO (1992) definition a latrine "*a building, not normally within the house or other building, for deposition, retention and sometimes decomposition of excreta*". The NSDS is based on a sample of 18,000 households randomly selected from all 56 districts of the country (17,608 households covered). The HIASS provides data for each district.

[60] Rwebitakuli and Mateete sub counties

[61] Kyamuhunga and Kicwamba sub counties

Box 4.3 NGO/CBO Hygiene and Sanitation Approaches (UWASNET, 2005c)

UWASNET (2005c) state that that integration, community involvement, collaboration and demonstration have led to good performance in relation to hygiene and sanitation.

The **integration** of hygiene, sanitation with health care or income generating activities: Hygiene and sanitation are not tangible commodities, and communities rarely appreciates its immediate impact on their health and economic status. It is important to integrate hygiene and sanitation promotion activities in other development programmes such as agriculture, water supply and care for those affected or infected with HIV/AIDS.

Community involvement right from the start of the project and in all levels of implementation and management of outputs: It creates willingness of the community to effectively participate in hygiene and sanitation activities. Planning *with* the community rather than *for* them and enabling the beneficiaries to prioritize their own problems.

Collaboration, in particular active involvement of local leaders in hygiene inspection and working closely with local governments (i.e. mobilization, monitoring and evaluation, advocacy, commissioning) are essential.

Demonstration structures constructed in the community, use of picture tools with hygiene and sanitation messages, coaching/hands on training of partner and support staff. Demonstrating exemplary leadership in the community was also very important.

4.5.4 *Domestic Hand Washing Practices*

In order to break the faecal-oral route of disease transmission hand washing facilities must be available and used, especially after using a latrine. Data on this indicator has been very scanty. Close to 75% of rural and 60% of urban households lack hand washing facilities (NSDS, 2004).

Changing behaviour in relation to hand washing is extremely difficult. UWASNET (2005c) has collated some of the reasons that households do not use their handwashing facilities. As well as regular sensitisation of communities and household, a number of solutions have been proposed (Box 4.4).

Box 4.4 Reasons for not using hand washing facilities (UWASNET, 2005c)

Why facilities are not used?	What can be done to improve their use?
Lack of water	Increase access to water
Forget	Strategic positioning of facilities
Lack of awareness of importance	Family dialogue, use of pictures, drama, exposure visits
Messages on hand washing have not been delivered effectively	Community involvement from the outset, social workers residing in communities for some time, strategic communication, more training of health workers

The national sanitation working group is currently in the process of planning a national handwashing campaign.

4.5.5 *Primary School Sanitation*

It is important for both boys and girls to keep their bodies, clothes and surroundings clean (MoES, 2003). A conducive environment for learning is key to enabling universal primary education. Poor health, malnutrition and hunger are important contributing factors for absenteeism, poor classroom performance and early drop-out from school (MoH, 2001b). Despite this, few schools in Uganda have access to adequate sanitation facilities and some local leaders, politicians, and school management committees do not regard school sanitation and hygiene as their responsibility. Sanitation and hygiene issues tend to be left to the teaching staff who mainly concentrate on academic performance (MoH, 2001a).

Enrolment and Pupil stance ratios. According to the Education Management Information System (EMIS) Statistics 2004, primary school enrolment was 3,732,928 for boys and 3,644,364 for girls, (7,377,292 total enrolment) (Figure 4.27). According to the national statistics for 2004 there are 23,855 latrine stances available for teachers, 60,962 for girls and 59,029 stances for boys. In some schools the latrine stances for girls and boys are mixed (7,629 latrines) (Table 4.7). With total enrolment of 7,377,292 and 127,620 stances available (including those without shutters) the national pupil to stance ratio stands at 57:1, which is above the recommended 40:1 by 17. The figures suggest that the average pupil-stance ratio for girls is 60:1 and for boys is 63:1. However, this does not include urinals, which will significantly improve the situation for boys.

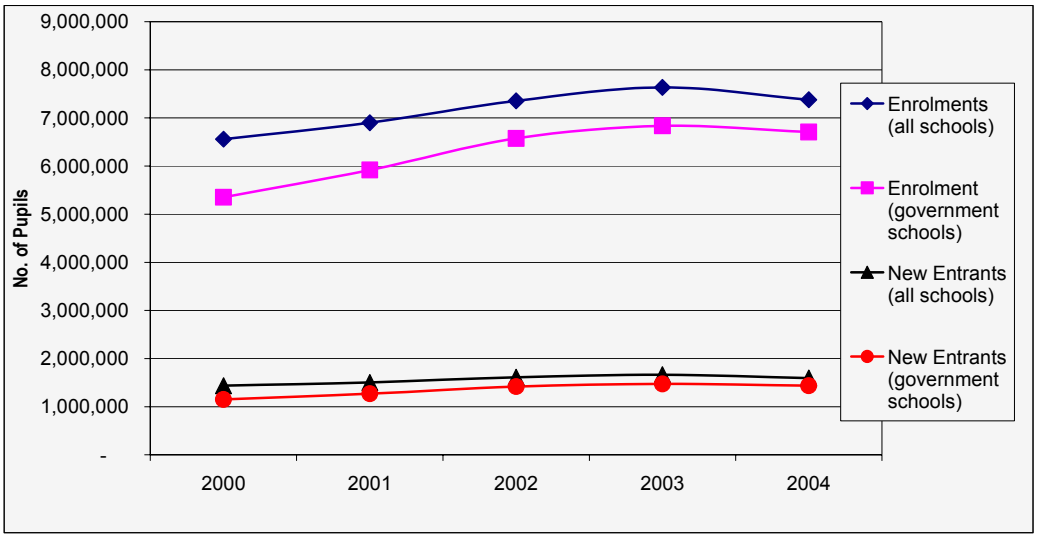
Unfortunately the data does not enable the number of primary schools which have a pupil-stance ratio of less than 40 to be determined. However, the MES has recently commissioned a study to review sanitation and hygiene as well as access to improved water sources situation in primary, secondary schools and Primary Teachers Colleges including private schools, poverty/wealth geographical distribution, and religious based institutions, girls/boys/ mixed schools distribution from all the regions in Uganda.

It can be clearly observed that many of the latrines (22,221 stances) in existence do not provide the required privacy for the users because they lack shutters. This puts girls at a particular disadvantage. Efforts should be made to fix shutters and make them user friendly before putting new blocks. Moreover, the cost is relatively small compared to constructing new ones.

Table 4.7 Primary Schools- Number of Toilets/Latrine Rooms/Stances [62]

Types of Toilets/Latrine Rooms	Teachers Only	Girls Only	Boys Only	Mixed Use	Totals
with doors	13,460	36,334	33,385	3,901	87,080
with shutters	6,704	17,245	16,525	1,700	42,174
without doors/shutters	3,691	7,383	9,119	2,028	22,221
Total	23,855	60,962	59,029	7,629	151,475

Figure 4.27 Enrolment in Primary Schools 2000-2004 (Source: MoES, 2004)



Case studies. Box 4.5 and Box 4.6 present the case studies on school sanitation from performance measurement field visits to Bushenyi and Sembabule.

[62] Location: All Areas, Ownership: All, Registry Status: All Schools, 2004

Box 4.5 Case studies on sanitation in schools in Bushenyi & Sembabule Districts (Source: PM Field visits)

Case studies were undertaken in Bushenyi[63] and Sembabule[64] districts (sanitation coverage of 80% and 42% respectively in 2004) covering 23 schools. The case studies were intended to find out the presence of latrines, pupil stance ratios, and existence of anal cleansing materials, hand washing materials and their usage, presence of washrooms for adolescent girls and presence of health messages in the compound (see table).

All the schools visited had latrines although the type ranged from permanent, semi-permanent to temporary. In the case of pupil stance ratios, the figures exceeded the standard of 40:1 recommended by the MoH[65]. In Bushenyi district the 15 schools visited had an average of 57:1. In Sembabule district the 8 schools covered in had an average of 66:1 stance to pupil ratio. This was partly attributed to the funding provided through Local Government Development Programme (LGDP) and School Facilitation Grant (SFG) that is used for the construction of sanitation facilities. In both districts all the schools had separate latrine blocks for boys and girls, although in some cases stances the male teachers would share with the boys and female teachers with the girls. This was due to inadequate funds.

Further analysis of stance ratios indicated differences between girls and boys. In Bushenyi the pupil stance ratio stood at 60:1 for girls and for boys at 55:1. In Sembabule the ratio stood at 63:1 for girls and 69:1 for boys. In all cases the ratios were above the recommended by MoH (2001). Several factors including inadequate funds, latrines collapsing before they are filled and the rapid increase in enrolment due the UPE policy account for this scenario.

Sanitation in Schools (Bushenyi: n=15, Sembabule: n=8)

Indicator	Bushenyi	Sembabule
Presence of Latrines	100%	100%
Presence of anal cleansing materials	46%	0%
Presence of HWF	40%	37.5%
Usage of HWF	26%	0%
Availability of washroom for girls	26%	0%
Pupil stance ratio (PSR)	57:1	66:1
Girls (PSR)	60:1	63:1
Boys (PSR)	55:1	69:1

The most effective way to stop the spread of diseases is for pupils to wash their hands with soap and plenty of water after using the latrine and before eating food as this removes germs. In all the schools visited in Sembabule district only 37.5% had hand washing facilities, but none of these were functional as they did not contain water or soap. There was no wet ground to show evidence of usage. In all schools visited there was no anal cleansing materials, no washrooms for adolescent girls and no health messages in the compound. In Bushenyi 40% of the schools visited had hand washing facilities, but only 26% had soap and water and observed evidence of usage. Only 46% had anal cleansing materials, 26% had washrooms for adolescent girls and 33% had health messages in the compound.

[63] Kyamuhunga and Kicwamba sub counties

[64] Rwebitakuli and Mateete sub counties

[65] According to the MoH (2001) standards, boarding schools should have one stance for every 15 students and day schools 1 stance for every 25 students up to 100, thereafter 1 stance for every 40 students.

Box 4.6 Good Sanitation Practices in Schools (Source PM Field Visits).

Some good sanitation practices that could be replicated were observed in some schools. One innovation was the mixing of water with powder soap (Omo) in the hand washing facilities. This solves the problem of the soap being removed by some pupils or eaten by birds.

Another good practice was the use of soft leaves from some locally existing shrubs for anal cleansing. More importantly pupils were involved in the collection of these leaves and the leaves were strategically placed on a raised rack constructed by pupils at the entrance of the latrine. Involving pupils in these activities greatly improves their appreciation of the importance of sanitation facilities. Since this becomes a routine at the school it also contributes to behavioural change.

A well kept school compound provides a good atmosphere for learning. In some schools there were well planned compounds with well trimmed flowers, hedges and a variety of fruit trees like avocado, mangoes and jack fruit. In addition some schools had health messages like "*Always wash hands after visiting the Latrine"* in the school compound. Continuous exposure to these messages and constant reminders from teachers helps to drive the health and sanitation message home.

4.5.6 *Technologies*

Ecological Sanitation is one of the technologies being promoted in Uganda through a coalition between DWD, MoH, Makarere University, NARO, Kampala City Council, MoES, local Governments, NGOs and the private sector. This technology is particularly relevant for the urban poor living in high density areas because of limited space and prevention of contamination to groundwater. Ecosan is also very appropriate for difficult environments like rocky, waterlogged and sandy collapsing soils areas where digging pits is cumbersome. Awareness of the technology has been increased through posters, workshops, drama and leaflets. Research into pathogen die off and agronomic value is being undertaken. A total of 3,348 ecosan toilets have been constructed throughout Uganda.

4.5.7 *Conclusions and Recommendations*

Funding mechanisms. There is need to stream line and strengthen funding mechanism for sanitation promotion at all levels. All sectors (water, health, education and local government) need to identify budget lines for sanitation promotion, and as much as possible such sanitation funds should be ring fenced. It is recommended that funding for sanitation can partly be improved through inter-sectoral collaboration. The establishment of the District Water and Sanitation Committees which are aimed at achieving this collaboration should be effectively operationalised.

Data collection methods. In order to have relevant and reliable data, there is need to improve the data collection methods. There is therefore need to standardize key sanitation terminologies (eg latrine, hand washing, safe water) for the various stakeholders involved in data collection. This would avoid controversy over the validity of the data and reduce the divergences in different data sources. The Household Sanitation Assessment Book should be finalized and funds identified to make it operational.

Improving latrine coverage and hand washing. In order to improve latrine coverage and hand washing it strongly recommended to revitalize the Kampala Declaration on Sanitation (KDS) which spells out the roles of all stakeholders from the households, communities, leaders and institutions. Best Operational Practices (BoPs) in sanitation promotion in all parts of the country should be properly documented and replicated. Interventions focusing on behaviour change such as sanitation promotion through health education which communicate the cost of poor sanitation should be expanded.

Technology development. Appropriate technologies such as ecosan should be promoted in difficult areas. Efforts should be made not to use these new technologies to de-campaign already existing options.

School sanitation. Funding for school sanitation should be clearly prioritised. This should aim at the provision of sanitation facilities; the organisation of intra and inter-school sanitation campaigns, training of teachers in school sanitation and support supervision at different levels.

4.6 Water Quality

4.6.1 *Introduction*

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

Esrey *et al* (1985) reviewed 53 interventions on water supply and sanitation and related them to infant diarrhoeal morbidity reduction. They found out that improved water quality alone led to 16% reduction, improved water quantity (availability) alone led to 25% reduction, improved water quantity and quality together led to 37% reduction and improved excreta disposal alone led to 22% reduction. In Uganda this report is supported by the PEAP review of 2004 in which it was observed that increased water coverage alone did not result in significant reduction in the incidences of water borne diseases. These findings illustrate the interdependent of water supply, water quality, sanitation and good hygiene practices in order to ensure safe water for drinking at the point of consumption, which is the household.

4.6.2 *The Safe Water Chain*

The consumption of water which is contaminated with disease causing organisms (pathogens) is one of the main causes of diarrhoeal diseases like cholera, which leads to a number of deaths in Uganda every year according to the Health Annual Sector Report 2004. Communal water supply systems may supply water of acceptable quality but there is considerable potential for water quality deterioration during its collection and/or during storage in the home.

Study Methodology. A safe water chain study was conducted in 2 districts. One district was selected to represent the districts with low sanitation coverage (IDP camps in Gulu where sanitation coverage is estimated to be 42%) and another to represent districts with high sanitation coverage (Rukungiri at 94%). In each district, ten point water sources were sampled and analysed for *E.coli* using the colilert method. Sources at which the water conformed to the drinking water guideline for *E.coli* (maximum acceptable concentration for *E.coli* is 50 No/100 ml for untreated water in Uganda) were then selected for the study, ie 100% compliance (Figure 4.28). Two or three people collecting water from each safe water source were then followed to their homes. One water sample each was taken from their collection (ferrying) containers and another from the drinking water storage containers. Where handling water for drinking was evidently poor, at least two samples were taken from the drinking water container. This explains why the number of collection containers does not tally with the number of drinking water containers (Table 4.8).

Table 4.8 Summary data on Safe Water Chain

	Number of samples	Median	Minimum	Maximum	Standard Error
Source	16	1	1	49	4.0
Collection Container	39	5	1	117	7.9
Drinking Container	46	19	1	2420	157.1

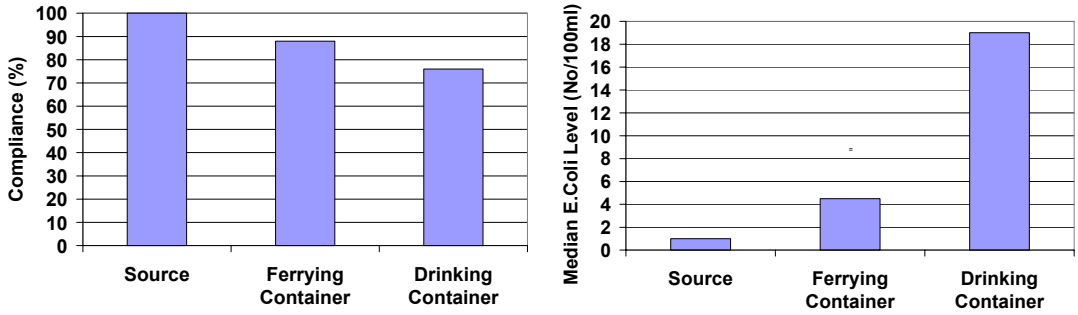


Figure 4.28 Deterioration in water quality along the water chain

Observation and Discussion. The variation in the quality of household drinking water was considerable. Some households maintained the quality of water as was provided at source but in some households gross contamination took place (Table 4.8). The difference between level of contamination at source and those in the homes is reflected by the big differences in median values for source and drinking water containers (Figure 4.28). Over 2000 No/100 ml of E.coli were recorded in some households. Fewer households however, were using grossly contaminated water compared to those using clean water, ie only 25% of the water sampled from drinking containers did not comply with the guidelines (Figure 4.28).

Contrary to expectations, there was a significant difference ($p = 0.61$) in contamination in homes found in Rukungiri where sanitation coverage is high (94%) and those in Gulu where sanitation coverage is low (42%). Contrary to expectations the most highly contaminated (E.coli >2420 No/100 ml) household water were found in Rukungiri where sanitation coverage is high. The most important factor for safety of water in homes therefore seems to be the hygiene and cultural practices. In some homes especially Gulu, drinking water is stored in pots and scooped for drinking using a common cup. In such homes deterioration in quality was high. In other homes drinking water was kept in jerry cans and water for drinking is poured from the jerry can. This practice minimizes contamination.

The other factor that contributes to the deterioration in quality is the cleaning of both collection and storage containers. Some homes wash both water collection and storage containers regularly with soap while others do it irregularly. The inside of a number of collection containers (jerry cans mainly) were visibly coated with algae[66]. Where cleaning was irregular, deterioration in quality was high.

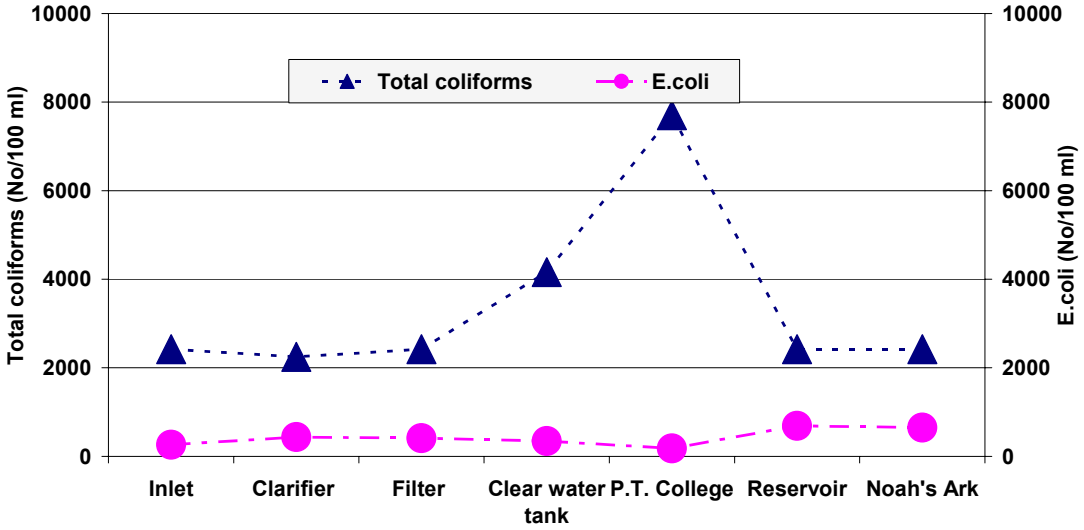
4.6.3 *Water Quality in Towns*

Quality of water supplied. The quality of water supplied in the towns varies greatly depending on the type of source water and the private operator. Where water is pumped from boreholes, the quality generally is good regardless of the operator. However, where the source is surface water and requires treatment, this becomes a problem due to mainly lack of sustainable supply of water treatment chemicals (e.g Bushenyi). The worst case encountered is that of Kapchorwa. Figure 4.29 shows the microbiological quality of the water supplied to Kapchorwa town. Compared with the guideline value of 50 No/100 ml for *E.coli*, the quality of water supplied is very poor with respect to both total coliforms and *E.coli*. The water quality with respect to *E. coli* worsens from the reservoir. This may be due to lack of a cleaning schedule for the reservoir. From the total coliform curve, it is evident that the water is supplied without treatment because quality at inlet (source) is similar to that in the distribution (last point in the graph) disregarding the quality at the Primary Teachers College where leakage was evident. The Kapchorwa case is a problem of inappropriate design. Plans

[66] It should be noted that there is no evidence that algae in jerry cans presents a health hazard.

are underway to improve the existing treatment plant or identify another point for raw water intake.

Figure 4.29 Variation of coliforms along the treatment units & distribution network - Kapchorwa Water Supply System



Large town water supplies under NWSC usually provide water of good quality. NWSC is well-equipped in all their towns with both personnel and equipment. Water supplies under water authorities and other private operators lack testing equipment. DWD is now planning to provide essential water quality testing equipment to the water authorities for routine water quality monitoring. In addition the water authorities and private operators will receive training in water quality testing and monitoring as part of the implementation of the National Water Quality Monitoring Strategy.

Problems faced by Urban Water Supply Operators. The private operators with the exception of NWSC cited the following as being the main problems affecting the quality of their services.

- Assets handed over by DWD have become old or have broken down. Examples are rusty pipes and broken down pumps
- High operating costs implying low profits
- Lack of capacity for efficient operation of the treatment plants. Personnel do not have the necessary technical background or training.
- Revenue collection. Customers delay to pay and few are willing to pay. Some still go for traditional water sources.
- Lack of facilities; mainly office space, in-house laboratories and transport.
- Poor quality works associated with poor designs, poor quality construction and poor supervision.

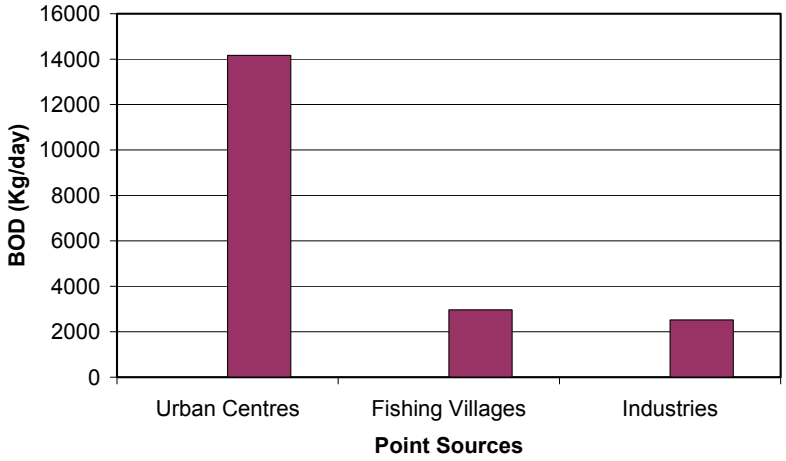
4.6.4 *Wastewater and Wastewater Regulation*

Pollution of Lake Victoria[67]. Recent studies (LVEMP, 2005b) have found that urban centres contribute 72% of the pollution loading to Lake Victoria compared to 13% by industries and

[67] Pollution loads into a lake or river may originate from point sources e.g industries and urban areas or from non-point sources like runoff from agricultural areas and depositions from the atmosphere. Industrial and agricultural wastewater consist mainly of toxic metals, organics and pesticides while urban waste (municipal waste) consists mainly of nutrients namely nitrogen and phosphorus.

15% by fishing villages (Figure 4.30). Kampala accounts for 65% of the total BOD load from urban centres (Figure 4.31). Pollution loading into the Inner Murchison Bay in the last 10 years has resulted in a 50% increase in water treatment costs at Gaba Water Works. Most industries have no wastewater treatment facilities; hence their effluents do not meet national standards.

Figure 4.30 Comparative Pollution Loading from Point Sources into Lake Victoria (LVEMP, 2005b)



The Permit System. In order to rationalise water resources utilization and safeguard water resources from pollution, Government of Uganda established a Water Permits System[68]. This regulates water resources utilisation and pollution through administration of permits for abstraction (surface and groundwater), drilling, wastewater discharge, hydraulic works and construction and easement certificates. Since it came into operation in August 1998, 76 manufacturing and processing industries have applied for wastewater discharge consent. 45 wastewater discharge permits have been issued. The number of unregistered industrial wastewater dischargers has remained very high. However, as there is no database, it is not known how many of the over 1,200 manufacturing industries in Uganda should be registered.

Permit Conditions for Wastewater Discharge. Wastewater permit holders are required to adhere to all conditions specified in the Ugandan legal documents applicable to water resources management[69]. In addition they are required to put a wastewater treatment facility in place within the first 2 years of operation under permit. The permit holder is expected to undertake flow measurements and analysis of wastewater at their own cost and remit the data to DWD on a monthly basis. If the wastewater quality does not meet the required standards initially, the permit holder is required to reduce the level of the undesirable substances by 50% within the first 3 years of operation under permit.

Industrial Wastewater Regulation. Environmental pollution may arise from discharge of untreated or partially treated industrial wastewater into waterways or water bodies and/or onto land. In Uganda, most industries still do not have effluent treatment plants but discharge their wastewater directly into the environment. Where pollution abatement facilities exist they are poorly designed and few produce effluents whose quality conform to standards. Box 4.7 provides case studies of four manufacturing/ processing industries that have been issued with wastewater discharge permits. Since the first permit was issued in 1999 compliance monitoring has been ongoing in form of inspections and investigations. Although some users

[68] In accordance with the Water Act cap 152, the National Water Policy of 1999 and the Water Action Plan (WAP) of 1993 – 4.

[69] The Regulations applicable to Uganda: The Water Resources Regulations 1998, The Water (Waste Discharge) Regulations 1998 while the standards used especially in reference to control of pollution are called the National Environment (Standards For Discharge of Effluent into Water or on Land) Regulations, 1999.

have exhibited unwillingness to adhere to permit conditions, no legal actions have been taken. A gentle approach to compliance has been preferred through various forms of negotiations and incentives schemes. This form of assistance to permit holders has been preferred strategically to reserve strict enforcement response to black-listed users. The blacklisted users are being compiled and will face the full force of the law in the future. In addition, industries that comply could be recognised, eg through awards.

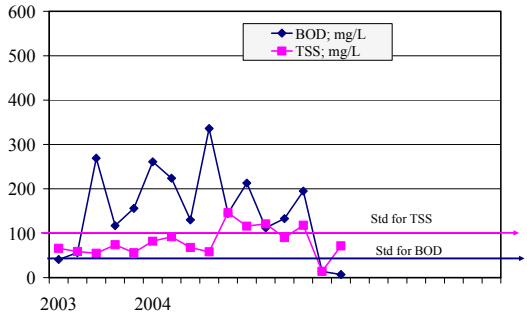
Box 4.7 Examples of Effluent Treatment by Manufacturing/Processing Industries in Uganda

Uganda Breweries Limited (UBL) is located at Luzira, Port Bell Road near the shores of L. Victoria and discharges its wastewater into Murchison bay wetlands. UBL was one of the first industries to respond to the new permitting system and was granted the first consent to discharge its wastewater into the environment for the period 2001 – 2003. This has been renewed to cover the period 2003 – 2006. UBL however, has not been complying with the effluent standards due to lack of a treatment facility. It has now constructed a modern wastewater treatment plant which is hoped to improve the quality of their wastewater and reduce the level of the undesirable substances in the effluent to required effluent standards.

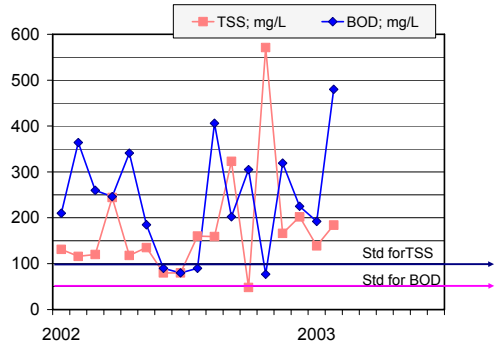
Century Bottling Company (CBC) has factories both in Mbarara and Kampala (Namanve). CBL holds a wastewater discharge permit granted for a period of five years beginning May 18th 2004.

CBL has wastewater treatment facilities at both of its industrial establishments. The final effluent from the wastewater treatment plant is discharged partly to land for irrigation during dry seasons but mostly through a channel to a fishpond constructed to monitor the quality of wastewater with respect to aquatic life. Survival of aquatic life in the fishponds is an indication of acceptable effluent quality.

Ngege and Greenfields Fish Factories. Ngege Ltd is located on Port Bell Road, Kampala while Greenfields Fish Factory is located in Entebbe. Both factories hold valid wastewater discharge permits and have constructed wastewater treatment facilities. These fish factories were selected randomly and results of monitoring their wastewater for compliance to effluent standards over a period of two years for only two wastewater parameters is presented in the graphs below. The effluent standard for total suspended solids (TSS) is 100 mg/L and that of Biochemical Oxygen Demand (BOD) is 50 mg/L. There is clearly a problem of compliance with the national standards.



Quality of Effluent from Greenfields Fish Factory



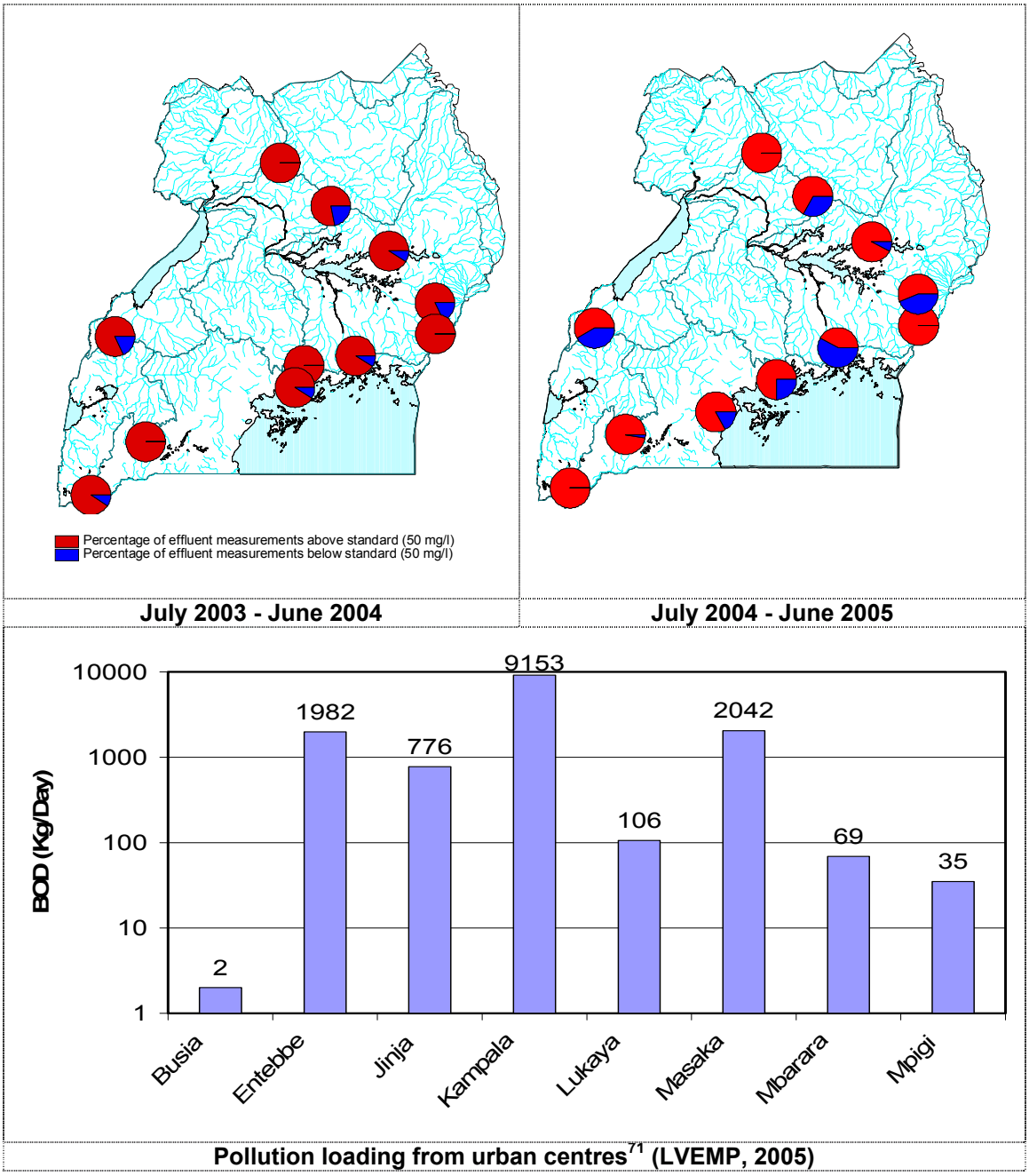
Quality of Effluent from Ngege Fish Factory

Municipal Wastewater Regulation. Municipal wastewater treatment in Uganda for major towns is the responsibility of NWSC. For all the 16 major towns except Kasese, Arua and Bushenyi, NWSC runs oxidation ponds, 14 of which have been issued with wastewater discharge permits. However, the treatment of the waste is still inadequate. The effluents contain high amounts of nitrogen, phosphorus, total suspended solids, and BOD. The quality of effluents with respect to BOD[70] for all the major towns is shown in Figure 4.31. Note that

[70] The impact of such waste on the receiving waters is rapid depletion of dissolved oxygen in addition to enrichment of the water body with nutrients leading to eutrophication (causing algal bloom). Dissolved oxygen is essential for sustaining the life of aquatic organisms, some of which play an important role in the natural purification of the water body.

the scale is logarithmic, with the pollution from Kampala over one hundred times that of Jinja.

Figure 4.31. Comparison of BOD_5 Loads of Large Towns in Uganda in 2004 and 2005



Pollution loading from urban centres[71] (LVEMP, 2005)

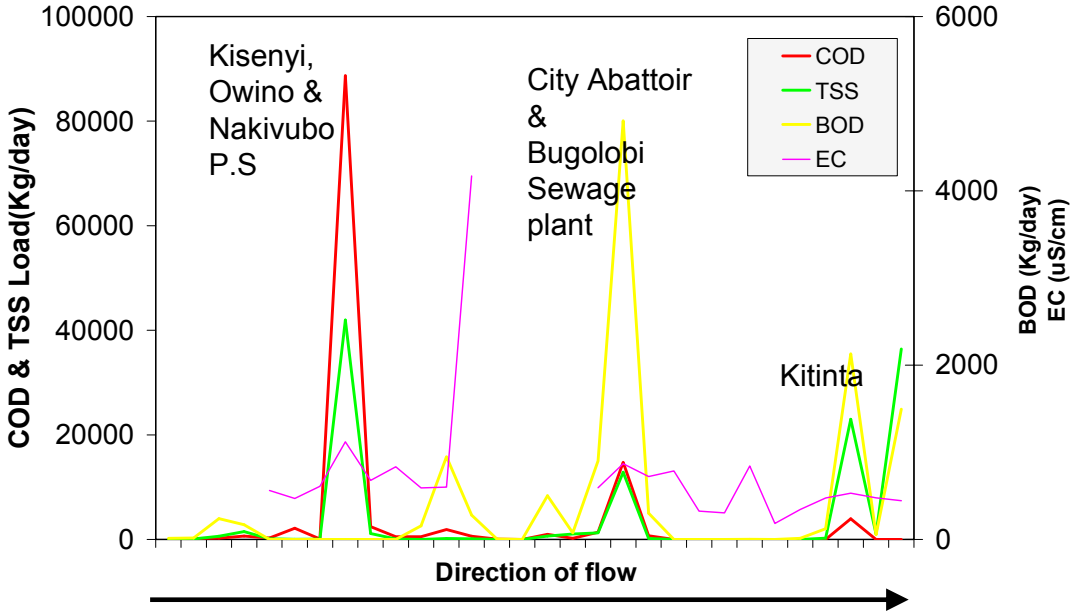
Nakivubo channel is an artificial channel constructed to drain storm water from Kampala city but it now carries most of Kampala's industrial and municipal wastewater. There are numerous anonymous industrial and sewage discharges along the channel. DWD monitors the quality of the channel waters at different stations. The quality of the channel water at some points along the course is similar to raw industrial waste and raw sewage. In addition, considerable amounts of solid waste find their way into the channel. Figure 4.32 shows the pollution profile along the channel after a typical rain event. Note the high sediment load

[71] Bar graph of BOD for major towns is based on data collected for the period from *1997 to date* under ' management of municipal and industrial effluents and urban runoff component' of LVEMP.

(TSS) from Kisenyi, Owino and Nakivubo Primary schools. This load would end up into the lake save for the depositional areas along the channel. Unacceptably high BOD from the city abattoir and Bugolobi sewage treatment works are similarly reduced by dilution and natural decay along the channel before a surge input from the Kitintale booster pump area.

The Nakivubo channel discharges into the 5.3 km^2 Nakivubo swamp on the outskirts of Kampala city. Since the late 1950s, the swamp has purified the water before it enters Lake Victoria. The swamp used to be dominated by native papyrus reeds, which slowed down the water and assisted in its purification. Unfortunately most of the papyrus has been cleared and much of the swamp area has been converted to the growing of yams which cannot carry out filtration and purification. Only small islands of papyrus are left in the swamp and a distinct channel now flows through the swamp which has lost its former cleansing properties. The discharge point into Lake Victoria is 3 km away from the intake for the Gaba waterworks, which provides Kampala's water supply. The quality of water abstracted for treatment has also declined. In order to address these issues, the Nakivubo wetland has been demarcated and measures have started to gazette and improve it. As part of this 'ox-bow' lakes have been created to improve distribution of wastewater before entry into the lake.

Figure 4.32 Pollution Profile along the Nakivubo channel, Kampala



4.6.5 *Conclusions and Recommendations*

The National Water Quality Monitoring and Management Strategy needs to be implemented after finalisation.

Monitoring and mapping of industrial, municipal and shoreline settlements pollution loading is required.

Wastewater. There is need to compile an inventory/database of all potential producers of wastewater who require a permit(s) under the present law. Awareness raising is required to sensitise industrialists about the importance of wastewater treatment before discharge into the environment. The adoption of cleaner production and installation of effluent treatment plants to comply with environmental standards needs to be promoted. Municipalities should have effluent treatment facilities and ensure compliance to environmental standards and ensure proper disposal and management of solid wastes. There is need to implement compliance and enforcement programs for the wastewater discharge regulations.

Hygiene education should be carried out for households and in primary schools. The importance of minimizing contamination of drinking water after the point of supply should be emphasized during the hygiene campaigns.

4.7 Water for Production

4.7.1 *Introduction*

Although Uganda has abundant water resources, these are unevenly distributed in time and space. In the dry areas, surface water resources are seasonal and groundwater potential is often limited. Water scarcity has not only limited agricultural production, but has also led to overgrazing, land degradation, wetland encroachment and degradation, spread of livestock diseases and insecurity in some areas.

Development and supply of water to supplement rain-fed agriculture will increase the overall crop, livestock and fish production through increased cropping intensity, forage production and reliable water supply, especially in the semi-arid and drought-prone zones of the country. Cost-efficient and sustainable water for production is central and critical to the successful implementation of the Government's Plan for Modernization of Agriculture (PMA) as a component (pillar 2)[72] of the Poverty Eradication Action Plan (PEAP).

The *"% increase in cumulative storage capacity of water for production*" is used by the sector as the indicator in the assessment of water for production.

4.7.2 *Status*

During 2004/5, the allocated resources were utilised to meet outstanding costs for surface water reservoirs constructed during 2003/4. Through central Government funding, no additional storage was created. Achievements between 1999/2000 to 2004/5 are set out in Table 4.9. Since 1999, 57 parish level valley tanks in Luweero, Nakasongola, Masindi, Rakai, Sembabule and Mbarara districts have been completed.

Table 4.9. Water for Livestock Achievements

Indicators	1999/0	2000/1	2001/2	2002/3	2003/4	2004/5	Total
Investment (UShs. bn)	1.96	3.133	3.971	2.590	3.671	3.665	**18.990**
Dams/valley tanks constructed	2	6	0	6	43	-	**57**
No. of dams/valley tanks rehabilitated	-	-	1	1	1	-	**3**
Volume of storage created ($x10^6$cu. m)	0.497	0.617	1.1	0.2	0.515	-	**2.929**
No. of animals served (3 months) x 1,000)	158	196	349	63	163	-	**930**
Cumulative storage capacity ($x10^6$cu. m)	11.270	11.887	12.987	13.187	13.702	13.702	**13.702**
% cumulative storage capacity	37.5	39.6	43.3	44.0	45.7	45.7	**45.7**
Potential Irrigable area (ha)	310	130		40	110		**590**

A Water for Production Sub-sector Working Group (WFPSSWG) at national level to provide multi-sectoral coordination and policy guidance was established and has met.

The Water for Production Strategy and Investment Plan (WFPSIP) was completed. Under the guidance of the Water for Production Sub-sector Working Group, the water for production study reform recommendations were prioritised and costed. A cabinet memo has been prepared for Government to approve the strategy and investment plan.

[72] Enhancing production, competitiveness and incomes (includes water for production and water resources management)

A proposal seeking DANIDA technical and financial assistance towards implementation of the WFPSIP was developed and is at technical appraisal stage. The key objectives of this Water for Production Component"[73] include;

- To build community capacity for planning, ownership, operation and maintenance of water supply facilities;
- To build central and local government capacity in design, construction supervision and back-up support to communities;
- To improve monitoring and evaluation and;
- To prioritise and kick start implementation of the Water for Production Strategy and Investment Plan (WFPSIP).

Under the Ministry of Agriculture, Animal Industry and Fisheries (MIAFF), a draft irrigation policy was prepared. The policy, among other things, is intended to address the poverty reduction focus and management of water for crops at the lowest appropriate level concerns highlighted in the PMA and Water Policies, as well as give emphasis to rainwater harvesting and soil water management at household/farm level.

With respect to livestock, the National Livestock Productivity Improvement Project (2004-2009), co-funded by a loan from the African Development Bank, was launched. The project entails various components aimed at controlling livestock diseases, ensuring optimal livestock nutrition and reliable water supplies.

District Activities. Seven valley tanks (3,000 m^3) were constructed in four Districts using the DWSCG (Table 4.10)

Table 4.10 Water for Production facilities constructed under the DWSCG

	No of Units	Expenditure (UShs)
Sembabule	3	124,193,000
Kiboga	1	47,692,000
Masaka	1	98,334,000
Rakai	2	130,038,000

The facilities and expenditure are not included in Table 4.9. The DWSCG and LGDP Grant allocation was used to construct surface water reservoirs for both domestic and livestock water supply, in areas where the traditional rural water supply technologies are not applicable.

4.7.3 *Conclusions and Recommendations*

In comparison to the other water and sanitation sub-sectors, water for production lags behind conceptually, and in terms of institutional development, demand identification, planning community participation, construction and operation and maintenance (O&M). The main constraints lie in the history whereby the sub-sector has been oscillating between different ministries. A number of issues need to be addressed fo the sub-sector as follows:

Institutional roles and responsibilities still need to be clarified and/or agreed. The poor coordination between stakeholders (DWD/MWLE, MAAIF, District and sub-county Government and communities) needs to be improved.

Inventory of water for production facilities. The latest inventory of water for production facilities was produced in 1996 by the MAAIF. However, a comprehensive database of all

73under the joint partnership fund in DWD/MWLE)

xisting facilities is required. This needs to include all facilities constructed by all actors investing in water for production[74].

There is limited capacity in DWD, MAAIF and the private sector (to carry out studies and investigations, develop appropriate designs, undertake good siting, provide adequate construction supervision and give sufficient back-up support to communities for O&M). Their capacity needs to be improved[75].

Operation and maintenance. There has been lack of training and sensitization of the communities on their roles and obligations, and poor involvement of communities and Districts in planning, construction and post-construction activities. Non-functional and non-existent water user committees, poor land management practices in the catchment areas, lack of community contributions to meet the O&M requirements and vandalism is a concern. These issues need to be addressed.

Bulk water supply. A pre-feasibility study on the concept of bulk water supply from natural bodies to water stressed areas for multi-purpose water use was undertaken. This will be followed by a feasibility study on bulk water supply to these areas.

[74] ie youth groups in fish farming, households for livestock and garden watering, NGOs for rural development initiatives, Sub-Counties and Districts providing domestic and livestock water supplies, and central Government providing water for livestock facilities

[75] Suggestions for this are proposed in the Water for Production Component, intended to kick-start the implementation of the Water for Production Strategic Investment Plan

4.8 Equity

4.8.1 *Introduction*

The water policy (MWLE, 1999); …'*Some for all and not all for some*' (in the water policy). Calculation of safe water coverage based on estimated number of users per improved water source alone is not adequate to reveal the equity situation.

The indicator utilised by the sector for equity is "*the mean parish deviation from the district average in persons per water point*". However, due to lack of data at parish level, this indicator cannot currently be used. The indicator used is actually *the mean sub-county deviation from the district average in persons per water point*". Data used in the equity calculation was District Situation Analysis. This included 55 districts, showing the number of water points and population (from UBOS 2002 population census) levels for all sub counties in each district.

The indicator tells us how much the average number of users per water point in a sub-county, differs from the District average. Equity is very good if the number of persons per improved water point in each sub-county is equal to the District average. However, if some sub-counties have a low average number of users per water point, and others have a high average, there is inequity in the distribution of improved water sources.

If water sources are distributed equitably within sub-counties in the district, the mean sub-county deviation from the District average is zero. However, in reality, some sub-counties have more water sources per head of population than others. Higher values of mean sub-county deviation, represent more uneven allocation of improved water sources.

The indicator is calculated as follows:

- calculate the average number of persons per improved water source for the district;
- calculate the average number of persons per improved water point in each sub county;
- calculate the absolute value of sub county deviation from the district average for each sub counties
- sum the absolute deviation for all sub-counties and divide by the number of sub-counties

Equity analysis rationalises the suggesting resources can be more equitably allocated (within and between districts) and the sector policy of some for all and not all for some.

There are inconsistencies in the data in the districts and at DWD. The DWD-MIS data calculations of coverage is only disaggregated (i.e. can only be broken down) by districts. This means that inequities at lower levels are masked. In turn, the data presented to DWD from Districts (so-called District situation analysis) breaks the information down into sub-counties and thus obscures the inequities existing at parish and LC1 levels.

Another key problem with the coverage data is that improved sources tend to be counted as contributing to coverage whether they are functional or not. A proper mechanism to report non-functional water sources is lacking and there is no agreed definition of a "*non – functional water source*". This is further complicated by the fact that in some cases, districts do not count "*abandoned*" sources, although this term has also not been clearly defined.

This section draws on the finding of a study[76] (WaterAid, 2005) in eight districts[77]. The study was undertaken to establish factors that affect equitable distribution of rural water and sanitation services in Uganda and make recommendations for improving equity. Data on

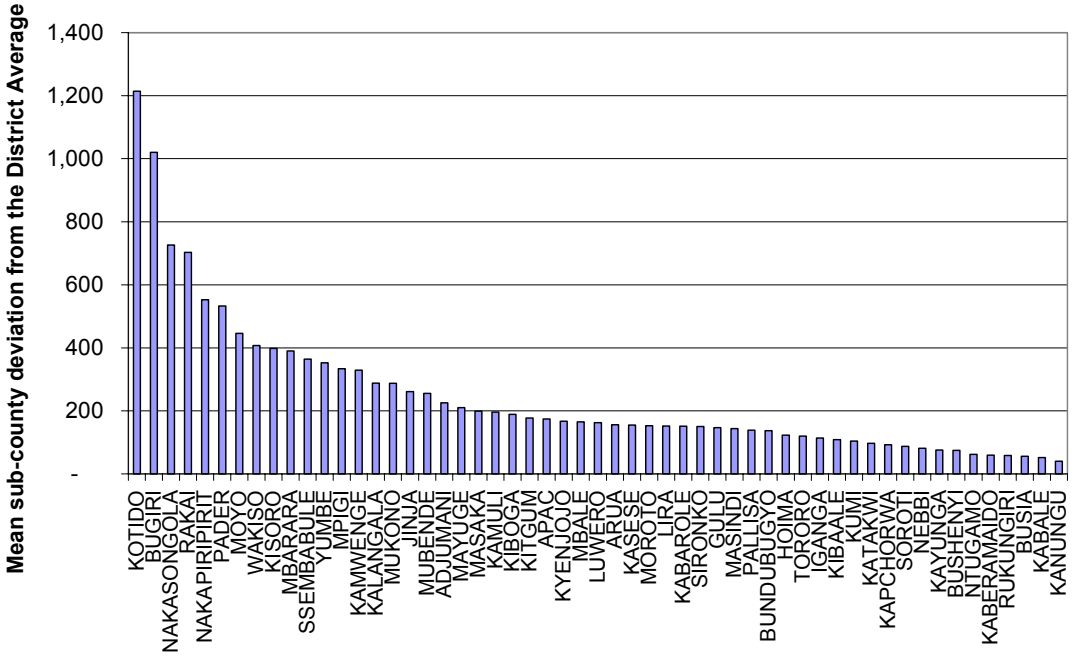
[76] The study methodology comprised a literature review, interviews at national, district and sub-county levels, and focus group discussions at community level.
[77] Apac, Nebbi, Sironko, Mayuge, Hoima, Mbarara, Wakiso and Luwero

improved water sources, as provided by the Districts to DWD (so-called District Situation Analysis) is used to examine "*the mean sub-county deviation from the district average in persons per water point*".

4.8.2 *Equity within Districts*

Mean Sub-County Deviation from the District Average. Figure 4.33 shows that there are only six Districts with a mean sub-county deviation of over 500. Kanungu has the most equitable distribution of rural water points in Uganda (mean Sub County deviation of 40. Kotido, on the other hand, has the highest level of inequity (mean Sub County Deviation of 1214).

Figure 4.33 Mean sub-county deviation from District Average in persons per rural water point (Source: District Situation Analysis Reports)



The three year trend in equity over the period 2002/03 – 2004/05 is presented in Figure 4.35. For ease of presentation, the districts have been clustered into four clusters (Northern, Eastern, Western and Central districts). In most Districts, the graphs indicate that equity has generally improved over the three year period. Districts in the eastern and western seen to have more equitable distribution of existing water sources, while the ones in the northern and central have rather wide inequities.

Figure 4.34 District Equity (Mean Sub-County Deviation from the District Average (2005)

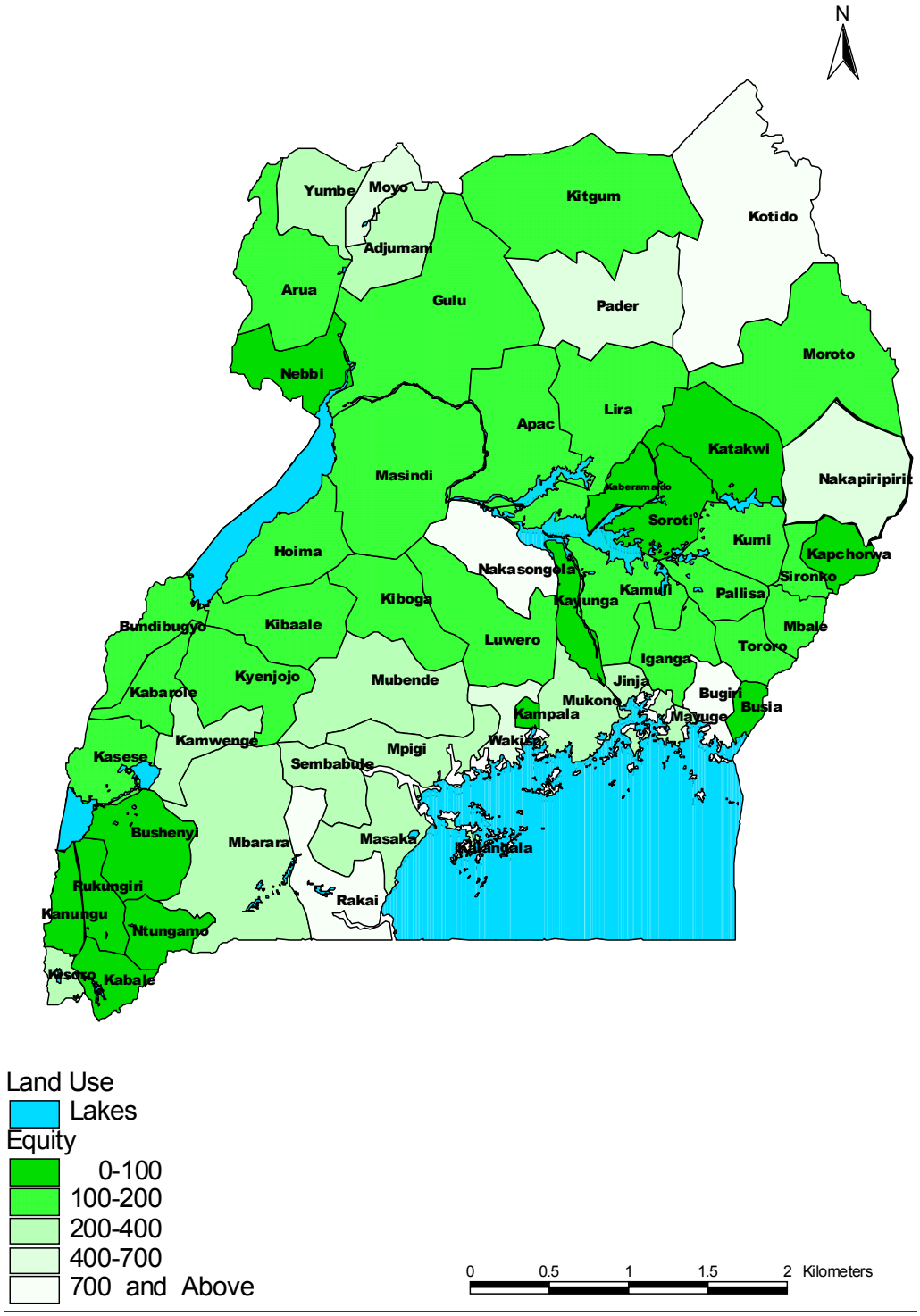
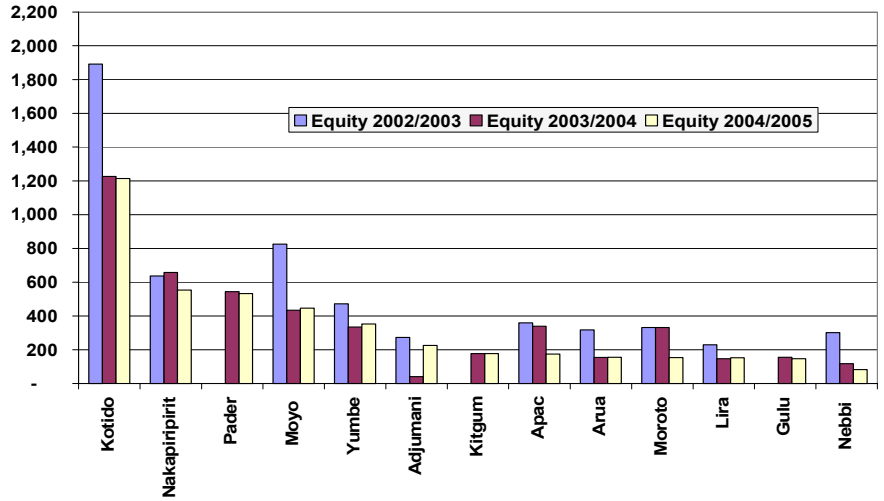
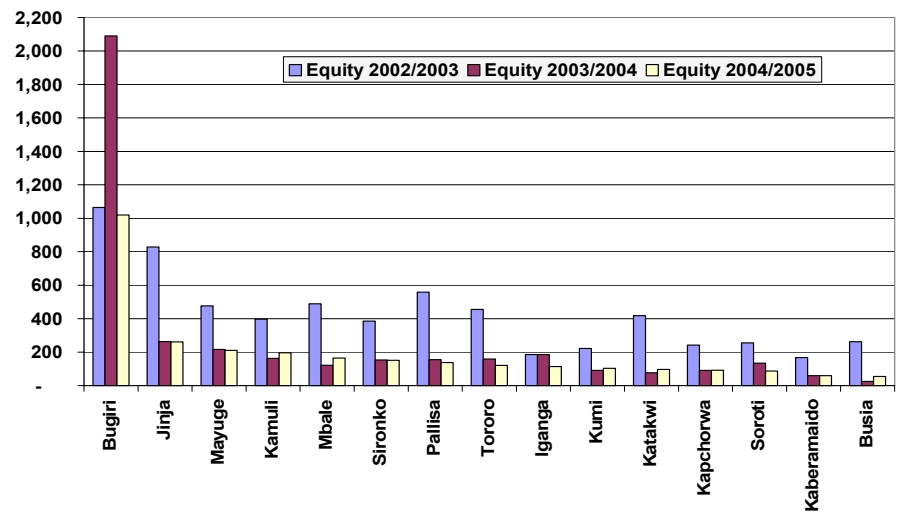


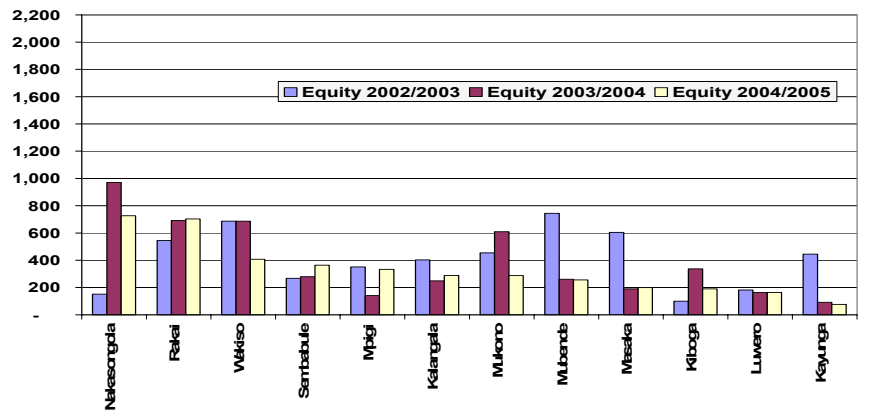
Figure 4.35. Trends in mean sub-county variation from the District average (2003 to 2005)



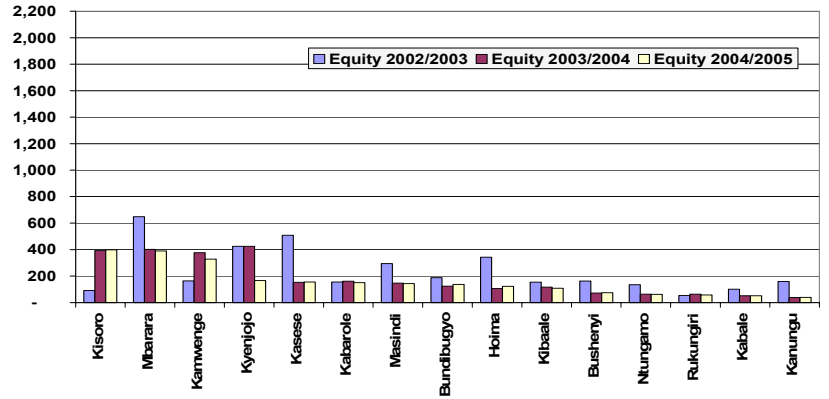
Northern districts



Eastern districts



Central districts



Western districts

4.8.3 *Factors that Affect Equity*

Existing Policies, Strategies and Guidelines include provisions to promote and enhance equitable distribution of improved water sources and are guided by the overarching maxim of 'some for all and not all for some' (in the water policy). However, the interpretation and application of these policies and guidelines at district level is moderated and adapted to accommodate other considerations, including political interests. This distorts equitable distribution of services. The study analysis reveals that district decision-makers often allocate water sources without following strict equity and actual needs criteria. The study further shows that the demand-responsive approach is not enhancing equity. This is largely due to inadequate information to communities and pressure to spend funds in the stipulated timeframe, to avoid returning unspent balance to the consolidated fund at the centre.

Resource Allocations for Rural Water Supply. A new allocation formula for grant allocation between Districts has been developed with Local Government Finance Commission (LGFC). The formula considers population, coverage and required technology mix. Cabinet authorised use of this formula with some transitional adjustments from 2005/6. These adjustments guarantee that all Districts will receive the funding levels as of 2004/5 at a minimum. This is commonly referred to as the "no losers" scenario. The implication of this adjustment however, is that the use of the formula only applies to conditional grant funds which are over and above the 2004/5 grant. There have continued to be substantial amounts of grants disbursed to districts whose coverage levels are above the national average (even above the 77% target for 2015).

Planning and budgeting within set sector ceilings limits the financial resources to meet the required investment needs in a given year. The districts use various criteria for allocation of support with varying degrees of inclination to one or the other, with no weights assigned to each factor and no clear ranking scheme. This impacts on equitable distribution of the services. In an attempt to ensure fairness to all sub-counties (as a result of political pressures), some districts knowingly or unknowingly promote more inequity in the distribution of water services.

Resource Allocations for Urban Water Supply. In the large (NWSC) towns, resource allocation for extension of piped water to new communities depends on the existing demand and the assessed commercial viability of such an extension. In the small towns, resource allocations are more dependent on the availability of funds to make extensions. The ability to pay is a key factor in determining equity of access to water services among individual households through new connections. This compromises equitable distribution and accessibility to safe water by the urban poor.

NGOs. Donor funds channelled through NGOs/CBOs are for to specific districts or localities following the respective NGO/CBO objective(s). These do not necessarily follow equity criteria. There are no formal mechanisms at national level to direct the activities by Donors and NGOs to the most deserving districts or needy areas in a project district. Inequities also tend to result in cases where some districts that were previously under-served have continued to receive Donor and NGO support for a very long time.

The other factors that potentially affect the equitable distribution of water and sanitation services include natural hydro-geological factors, cost of water technology, population distribution and mobility, political influence, under-prioritization of community software activities as opposed to hardware, community socio-economic status, leadership and commitment in relation to promoting sanitation, people's attitudes and values, and insecurity.

4.8.4 *Conclusions and Recommendations*

Improving the equity indicator. The indicator used to measure equity is rather complicated and difficult to relate to physical realities. This makes it a difficult tool to be used for

planning purposes and it does not seem to be readily applicable in the urban setting. It is thus recommended that the indicator be simplified for next years' (2005/6) sector performance.

The recommendations for the improvement of equitable distribution of watsan services are so interrelated, and hence they need to be implemented as an integrated package instead of prioritizing them. These range from policy matters, planning, resource allocation at all levels; data collection and monitoring; and balancing of expenditure between hardware and software activities. The recommendations are as follows:

Policy, planning and resource allocation at national level.

- Develop, disseminate and implement equity guidelines at national level on equity for local Government.
- Districts with water coverage falling below the average rural water coverage (should be given priority in resource allocation.
- DWD should direct and devote special attention to research into appropriate technologies for un-served or under-served areas with limited water technology options.

Planning and resource allocation at district level

- Calculation of coverage figures should be done at parish level, rather than stopping at sub-county level. Further improved by introducing other methods of determining need as; the Water Point Density (WPD) method, applied at parish level, calculated by the district water office annually. Districts with high Mean Parish Deviations (MPDs) should be required to allocate new water points to parishes with the highest number of people per water point.
- Institute mechanisms/procedures, that increase the transparency of decision-making at district level regarding water sources allocation.

Data collection and monitoring systems

- Develop tools such as water resources maps, population density maps, table formats that can assist to collect, analyse and present data on coverage and equity.
- Improve data collection and information flow about non-functional water sources for accurate achievement of calculation of coverage.
- District data on number of people per water point by parish should be made available to all district councillors and all sub-counties as a means on an annual basis. This transparency should enable leaders of the disadvantaged areas to question and understand the basis of allocation.
- Finalize work to revise procedures for calculation of safe water coverage levels, including the walking distance variable

Balance between hardware and software activities

- District software activities should go beyond communities selected for water source construction. Software activities for under-served communities should include information about available Government support, procedures and requirements for demanding a water source, requirements and conditions for different water technologies, and hygiene and sanitation.
- To increase the reach of community education and promotion programmes for sanitation, NGOs (or other partners) should be more involved in district software programmes.
- Back-up for support for O&M for water points, (for communities to undertake repairs beyond their capacity) should be intensified

NGO Involvement and Advocacy

- Develop or institute formal mechanisms for other actors such as NGOs to feed data to districts and vice versa to enable accurate and comprehensive data collection and use.

Chapter 5

Improving the Functionality of Rural Water Supplies

5.1 Introduction

The 2005 sector performance report focuses on functionality of rural water supplies in order to:

- Address stakeholder concerns expressed about functionality rates.
- Provide information for ongoing debates about the level of investment required to support operation and maintenance (O&M).
- Examine how gender and community issues affect functionality.
- Consider the effectiveness of on-going work to address the availability of spare parts for O&M.

The sustainability of rural water and sanitation facilities has been a major concern to the Government of Uganda. These concerns led to the commissioning of a study on "*Operation and Maintenance of Rural Water Facilities in Uganda"* in 2001/2 followed by the development and launch of *"A National Framework for Operation and Maintenance of Rural Water Supplies"* in 2004. The *O&M Framework* recognises that a number of key issues are crucial for the sustainability of rural water supplies. These issues have also been raised in district and TSU reports. Stakeholder interviews (through DWD Performance Measurement and other field visits), and series of District level O&M workshops (MWLE, 2005c; MWLE, 2005d; MWLE, 2005e; MWLE, 2005f) continue to provide further insights regarding O&M and identify ways of improving the functionality of rural water facilities.

This section considers the key issues of (a) management of the facilities; (b) gender; (c) finance; (d) technology and (e) monitoring. This chapter discusses the issues, and stakeholder efforts to address them.

A mix of quantitative and qualitative information has been used for this analysis:

- Quarterly District water and sanitation reports
- DWD performance measurement (PM) field visits to Rukungiri and Sembabule districts and selected IDP camps in Gulu (focusing on management issues)[78] and to Iganga and Rakai[79] (focusing on functionality).
- DWD policy and guidance documents for the Water and Sanitation sector.
- Reports from Inter-District Meetings (IDMs) which focused specifically on O&M.
- Paper on "*NGO/CBO experiences in Gender, Community Capacity Development and Functionality of Water Source*" by UWASNET (2005a)

[78] A team of six professionals from DWD spent four days (excluding travel) in each District in consultation with key informants and water users. 81 people were interviewed [Gulu – 23, Sembabule – 29, Rukungiri -29] [male - 55; female - 26] [water users – 60; District officials – 21].

[79] Two case studies on functionality, one by Rakai DWO (point water sources) and the other by TSU and DWO (RGCs) were conducted in 2005. Visiting 34 rural communities and 10 in RGCs, 289 stakeholders (WUC members, Hand Pump Mechanics, LCs and the user beneficiaries) were interviewed.

- DWD field visits, sensitisation and training in Karamoja, Rakai, Tororo and Mbarara.

5.2 Case Studies on Functionality

DWD PM field visits to Iganga and Rakai support the findings of the O&M study. The issues of management, finance and technology , set out in the O&M framework and discussed in more detail in this chapter were found to be critical for functionality of rural water supplies (Box 5.1 and Box 5.2).

Box 5.1 Functionality and Underlying Causes in Iganga District

A spot check conducted on 50 randomly selected water sources in Iganga district found only 4 non functional water sources putting the districts functionality at 92%. Interviews conducted with District officials, WUC and the beneficiaries revealed the following reasons for the high functionality.

- Almost all sources had active Water User committees
- Use of U3 modified PVC pumps/pipes which are not affected by corrosion and easier to replace
- Trained hand pump mechanics at each Subcounty
- Water office has employed ADWO in charge of Borehole Maintenance.
- Collection of monthly O & M fund ranging between (300 – 500)/= per house hold

Political support in monitoring and reporting back broken down sources

- Budgeting for borehole rehabilitation under LGDP and PAF grant
- Pipes installed under the RUWASA Project were of stainless steel which is resistant to corrosion and therefore takes long to break down

Non functionality was observed where;

- Pipe replacement had been done with galvanised iron (GI) pipes
- Availability of other technologies in the neighbourhood which don't require regular O&M like springs.
- Dormant WUC 's and reluctant beneficiaries to contribute towards O & M

Box 5.2. Functionality and Underlying Causes in Rakai District

Case studies in Rakai[79] in 34 rural communities found that the functionality of shallow wells and boreholes was 76% and 55% respectively. In 10 rural growth centres (RGCs), functionality of shallow wells and boreholes was 58% and 75% respectively. Water user committees existed at all sources but only seven of them had received training. Only 27% of the respondents reported that they contribute towards O&M whereas 76% of the respondents living in ten RGCs claimed that they were paying. User fees for water points vary.

If water users are able to resort to using traditional water holes, they tend to resort to these when the improved water sources break down. Although the concept of preventive maintenance was lacking, 86% of respondents in rural communities and 100% in rural growth centres reported that they collect money on breakdown. In most cases, funds for repair are collected and kept by the LC 1 chairperson. Repair costs were found to range from UShs 1,000 to over UShs 60,000. 83% of the respondents reported that they pay handpump mechanics while the other do not.

For rural communities, spare parts were found to be obtained from a range of sources: hand-pump mechanics (23%), District Government (15%), Masaka town (9%), Sub-county Government (3%), bicycle mechanics (25%) and other (4%).

Committee members explained that ensuring functionality is a challenge due to damage by rowdy children, too many users and theft of handpumps and handpump parts. Many shallow wells are located in low lying areas far from communities, many of which have been vandalised with parts stolen for resale.

In most cases, the committees did not receive support from water users or Government extension staff. This has led to loss of moral by many committee members, who have abandoned their work. 89% of the respondents were of the opinion that they should be remunerated for their work (allowances or money for transport). Committees requested refresher training on preventative maintenance, simple repairs, mobilisation skills, raising O&M funds and trouble shooting when sources break down.

5.3 Management of Rural Water Facilities

5.3.1 *Management Policies*

Community management structures for RWSS are stipulated in the Water Statute (1995) as follows: *"a set of individuals or households may form a Water User Group [WUG] and collectively plan and manage point source water supply system in their area"* (sic). A WUG may collect revenue from the water users. The executive organ of the WUG is the Water and Sanitation Committee (WSC), which is also responsible for sanitation and hygiene in their area (MWLE, 1995).

A Community Based Maintenance System (CBMS), whereby user communities undertake maintenance and repairs within their capacity, is the foundation for sustainability of rural water facilities in Uganda. Within CBMS there are supporting roles for DWD, District and sub-county Governments. RWSS policies (MWLE, 2002) also specify demand responsive approach (DRA) whereby potential beneficiaries are to be sensitised about water source improvements, apply for facilities, and make initial cash contributions towards construction.

5.3.2 *Community requirements for effective management*

Community sensitisation, mobilisation and training is essential in order to ensure that different stakeholders understand their roles and responsibilities regarding CBMS, and that communities have a strong sense of ownership of their facilities. Findings from both DWD PM field visits and focus group discussions with UWASNET members support this:

- In Sembabule, for facilities which were constructed before CBMS and DRA was part of sector policy, most of the communities had not been sensitised about the need for regular contribution to O&M and WSCs had not been trained. Official rates of non-functionality in this district are 31%.
- UWASNET (2005a) considers the performance of the WSC to depend on the implementation approach of NGOs. Community meetings to agree roles and responsibilities of the WSC, commitment within the community, participation from the outset and the involvement of local leaders are all essential for WSCs to succeed.

5.3.3 *Field realities*

The traditional attitude of dependency on Government, introduced during the colonial days, is still widespread despite CBMS. In many cases, communities and political leaders still believe that Government should maintain facilities and are bent on waiting for Government officials to come and repair broken down water sources. DWD PM field visits found out:

- A senior political leader consulted during the DWD monitoring visit stated "*Our people are poor. They are contributing to several services in the villages so why should the Government not provide them with free water?*"
- A villager in Sembabule said "*The Government constructed this facility so if it is silted, they [Government] will come and rehabilitate it*".

Civil servants and political leaders need to work hand in hand to change this attitude.

Community priorities may be different from those of sector professionals. DWD PM field visits to Rakai found that improved shallow wells were situated next to pre-existing traditional water holes tended to be abandoned when they broke down. Instead the community would revert back to the open water hole.

Recent field visits by DWD indicate that there is some variation in the emphasis and activities undertaken by WSCs (Table 5.1). This may be due to different emphasis given in training as well as the fact that communities are not the same. Perhaps all WSCs should not be expected

to operate in the same ways. The field visits also found that WSCs which were facilitated financially by communities were more active than those which were not.

Table 5.1. Activities undertaken by WSC surveyed in Rukungiri, Sembabule and Gulu (Source DWD PM field visits)

Rukungiri	Sembabule	Gulu IDP Camps
Monitor functionality of facility		Monitor functionality of facility
		Monitor use of water
Collect contributions and mobilise community for O&M	Collect contributions and mobilise community for O&M	
Carry out routine maintenance	Carry out repairs	
Report breakdowns		Report problems with facility
	Clean the facility and prevent vandalism by animals	Ensure hygiene and sanitation around source
Hold and attend meetings		Hold regular meetings
Implement by laws against defaulters	Design bye-laws	Enforce by-laws
Pay workers and scheme attendants		Supervise care takers
Manage finance and prepare accountabilities		
Make plans for the future		

5.3.4 *Government efforts to address management issues*

Major efforts have been made by DWD to improve management of rural water facilities.

Software steps. In August 2004, DWD circulated a guidance document (MWLE, 2004c) to District Water Offices on the activities to be undertaken in the planning and development of new water sources and follow-up of existing ones.

Increased expenditure on software. From 2005/6 local Government are allowed to plan and spend up to 12% of their total DWSCG on "software activities" (advocacy, pre-construction and construction mobilisation and training and post-construction follow-up). Previously, only 4% of the cost of each water source could be spent on community mobilisation. Funds for follow-on support to communities after construction have been included within these software funds for the first time. The major constraint to local Governments for carrying out this work in the past was lack of funding.

Dissemination of O&M framework and District action plans. In May 2005, DWD commenced the dissemination of the O&M Framework. To date, four workshops (TSU level) have been held, involving sector stakeholders from 27 districts[80]. The workshops involve extensive dialogue and experience sharing on O&M issues as well as clarifications regarding policies and stakeholder roles and responsibilities. As part of each workshop, Districts (Government and NGO stakeholders) prepare their own work plans to ensure that O&M is considered during planning, construction and post construction phases by local Government in the region (MWLE, 2005b; MWLE, 2005c; MWLE 2005d; MWLE, 2005e).

Involvement of NGOs. NGOs are often considered as having a comparative advantage over Government with respect to the implementation of software activities. In 2004, DWD released funds for a project to pilot the use of NGOs to undertake software activities

[80] Arua, Adjumani, Nebbi, Moyo, Yumbe, Kasese, Kabarole, Kyenjojo, Kamwenge, Mubende, Kibaale, Bundibugyo, Jinja, Kamuli, Iganga, Mayuge, Bugiri, Pallisa, Mbale, Sironko, Busia, Kapchorwa, Tororo, Sembabule, Masaka, Rakai and Kalangala.

associated with the provision of RWSS. (Box 5.3) explains the software pilot project, which is being implemented by seven NGOs[81] throughout Uganda. .

Box 5.3. Software Pilot Project for RWSS

In the software pilot project, NGOs in seven Districts in Uganda were responsible for mobilizing and sensitizing communities regarding water and sanitation and building their capacity to manage the facilities. The construction of new water facilities was undertaken by private contractors.

Although a full evaluation has not yet taken place, preliminary findings suggest that the NGOs were able to successfully incorporate gender concerns in water source development, build community capacity for operation and maintenance and mobilise communities to make contributions towards the capital cost. The sanitation coverage in areas where water sources were developed improved tremendously. These successes are attributed to adequate funding for "software" activities, and the commitment of the NGOs to achieve the 'non-tangibles' which are key for the sustainability of the facilities.

District Water and Sanitation Technical Committees (DWSC). Districts are being encouraged to establish DWSCs in order to improve coordination of water and sanitation activities at District level. It is envisaged that they will improve coordination and harmonisation between different approaches by different sector players (NGOs, DWSCG, LGDP, NUSAF). DWD intends to harmonise approaches through dialogue at central Government level.

5.4 Gender

5.4.1 *Gender Policies*

One of the six critical requirements set out in the OP5 (MWLE, 2002) focuses on the meaningful involvement of women. Before any construction goes ahead, community mobilisation should have achieved the following minimum requirements:

- the composition of Water User Committees (WUAs) and Water and Sanitation Committees (WSCs) shall include at least 50% women;
- election of women as chair and treasurer of the WUA/WSC is encouraged;
- half of the water point attendants and handpump mechanics shall be women;
- training shall target women and their male colleagues;
- the entire community shall be involved in discussing the siting of water sources with men and women initially consulted separately;
- all communications to communities shall be to both men and women

5.4.2 *Field Realities*

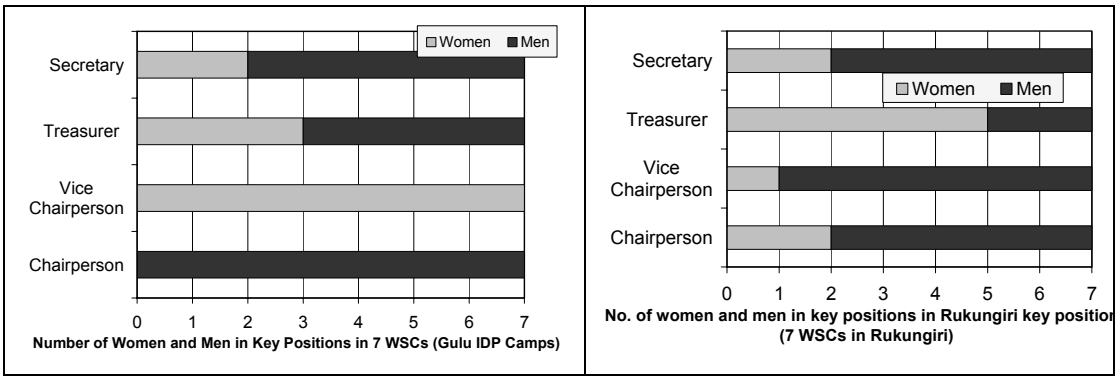
Gender balance is considered as a key aspect of management of RWSS although perspectives on this do differ. During the DWD PM field visits, a District official in Rukungiri reported that when Mihembero GFS was under construction, the donors imposed the condition that all WSC chairpersons and most members should be women. However, as women command less respect in the community, mobilisation for O&M has been problematic. The official stated that the facility does not function well as a result. In another case, a sub-county Government official in Kebisoni exclaimed "*Oh, if women were not on the WSC it would be a disaster because men are highly mobile. They are not concerned about water as it is the duty of women to provide water for the family. The women are always available to ensure that the water facility functions. Women are more committed than men as availability of water frees*

[81] Hewasa, Buso Foundation, Socadido, CEFORD, Coweser, Lodoi and Wera

them to participate in other economic activities. They are also concerned about the family health".

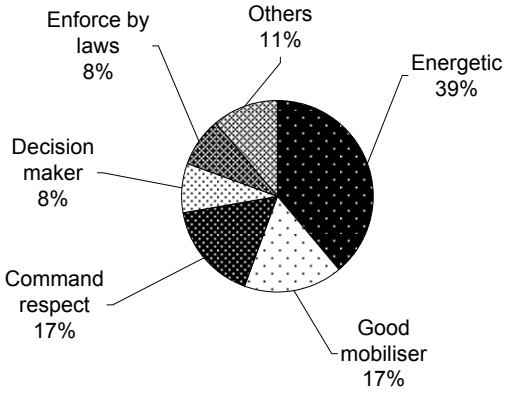
DWD monitoring visits to Rukungiri, Sembabule and Gulu found that women were well represented on the WSC. Overall membership of women in WSCs was 48%, 43% and 45% in Rukungiri, Sembabule and Gulu respectively. In all fourteen WSCs interviewed by DWD PM field visits, in Gulu IDP camps and Rukungiri at least one woman held a key position. Two women held the position of chairperson (Figure 5.1).

Figure 5.1. Gender balance of Key Positions in 14 WSCs in Gulu and Rukungiri (Source: DWD PM Field visits 82)

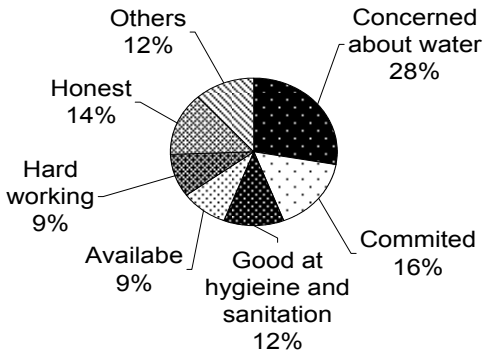


Women and men are considered as bringing different qualities and expertise in managing water facilities (Figure 5.2). UWASNET (2005a) states that all of the seven NGOs who took part in an experience sharing exercise find that women are generally the treasurer of the WSC while men tend to be the chair. In all of the three Districts visited under DWD PM field visits, which focused on gender the post of treasurer was most commonly held by a women. Interviewees in communities stated that they believe women are more trustworthy than men. In contrast, DWD field visits to Rakai, which focused on functionality, found that women treasurers tended not to be trusted with funds. People preferred to entrust funds to the LC1 chairperson.

Figure 5.2. Perceptions regarding advantages of men and women in management of water facilities (Source: DWD PM Field visits)



Advantages of men (frequency of response)



Advantages of women (frequency of response)

[82] Data represents responsed from 52 interviewees when asked about the advantages of men and women in management of improved water facilities.

NGOs have observed that men are involved during construction but not afterwards unless the source breaks down and that although women may be involved in site selection, they are considerably influenced by men (UWASNET, 2005a). Table 5.2 shows that the different roles played by men and women in water source construction tend to reflect the traditional roles at home. All 81 respondents questioned by the DWD PM field visits stated that men's performance in maintaining water facilities is greatly affected by their highly mobile status as they look for work.

Table 5.2. Gender roles in water source construction (Source: UWASNET. 2005a)

Men	Women	Both
site the source supervise construction provide unskilled labour collect locally available materials	collect and prepare food clear the site break hardcore into smaller particles ferry sand and poles for fencing clean and maintain the source plant grass mobilise fellow women	participate in meetings fencing

5.4.3 *Government efforts regarding gender*

In order to examine the national gender balance for management of water facilities, a new golden indicator on gender (% of water and sanitation committees in which at least one woman holds a key position) has been included in District FDS reporting formats to be implemented in pilot Districts from 2005/6.

5.5 O&M Financing for Rural Water Facilities

5.5.1 *Policies*

One of the six critical requirements set out in the OP5 (MWLE, 2002) is a community contribution towards the construction cost is required in cash or kind. According to the CBMS followed in Uganda, once the facilities are in place, communities are responsible for O&M.

5.5.2 *Field Realities*

Regular collection of user fees is considered by professionals in Government and most NGOs as a key for ensuring O&M but is a challenge in many communities. A recent UWASNET focus group discussion (UWASNET, 2005a) found that despite the emphasis that many NGOs have placed on regular community cash contributions for O&M, this has remained a major challenge:

- beneficiaries don't follow the NGO's advice of collecting an O&M fee. Funds are most often collected when the water source breaks down. Protected springs are free flowing thus collecting a regular O&M fee is particularly difficult;
- it is only when the source breaks for the first time that the community realises the need for an O&M fund;
- the community often waits for a crisis before collecting funds.
- One NGO (KDF) reported a recent survey found that out of the 300 water sources that the organisation has protected in Mpigi District, only four committees sometimes collect regular O&M funds.

However, there are cases where NGOs have found innovative ways of collecting and using O&M funds. Box 5.4 provides an example of a revolving loan. Other methods of funds

collection include fines, donations from well-wishers and the District, local fundraising and tapping into the 25% of local revenue retained by the LC1.

Box 5.4. Using the O&M fund as a revolving loan (UWASNET, 2005a)

Kumi Human Rights Initiative, an NGO operating in Kumi district sensitized Kapasak community (Ongiino sub county) and built their knowledge of human rights especially the right to water. The community selected an opinion leader to take on the role of sensitizing them about household hygiene and sanitation and eventually the community applied for a protected water source from the sub-county. Upon construction of a shallow hand dug well with a hand pump, a WSC was formed. The community agreed that effective management of the O&M fund would be through a revolving fund. When the monthly household contribution is collected, it is immediately lent to borrowers (also water users) who repay with interest at the end of the month. Records of the transactions are kept with the treasurer. This system has created cohesion within the community who now meet regularly to learn more about hygiene and sanitation and other issues related to development.

Management of O&M funds can pose challenges for communities. Water users in one village in Ssembabule informed DWD staff that the community contributed money to repair the broken down borehole, and gave it to the LC1 chairperson. The funds were used to repair the facility, which unfortunately broke down again very soon. The facility has not been repaired yet as the "*LC1 had vanished with the money*". The community complained of "*being helpless with a borehole that does not function*". Lack of accountability regarding use of O&M funds undermines regular contribution by water users (UWASNET, 2005a).

Economic benefits from water facilities seem to be a key factor in payment for water and repair of facilities. For example, residents in two villages in Ssembabule District neighbouring an RGC are willing to pay for water for the economic activities of water vending, restaurants and small scale industries. The challenge for the sector is to promote the economic as well as the social benefits of improved access to water for rural communities.

Mixed messages by politicians (especially in election years) as well as NGOs and different Government projects mitigates against good O&M practices, and financial contributions by communities in particular.

The late release of PAF funds to the Districts, and the requirement to return unspent funds to MFPED at the end of the financial year is a major constraint to O&M. In the rush to spend funds, there is a tendency to neglect community mobilisation and collection of community contributions towards construction.

5.6 Technology for Rural Water Supplies

5.6.1 *Handpump Supply Chains*

Background. It was observed from rural water supply monitoring that the low functionality of wells fitted with handpumps was partly due to the lack of viable outlets from where spares can be easily accessed and purchased by the user communities. Government therefore decided to embark on the "Supply Chains Initiative" whereby the private sector would be facilitated to set up a supply network of handpump spares in Districts. This was intended to act as a mechanism for stimulating the demand and supply of handpump spare parts. It was envisaged that this would reduce the low functionality of water sources fitted with handpumps.

The concept of the supply chains initiative is such that the spare parts outlets in each and every district shall be stocked with fast, medium and slow wearing spares for sale to user communities. In addition, different types of complete handpumps are to be availed to Districts for installation in wells drilled through their programmes. This would act as additional contribution towards the DWSCG for 2004/05 financial year. The suppliers are also expected to carry out a marketing strategy for the handpump spares through training of mechanics at district and regional levels in collaboration with Government.

Implementation. The supply chains initiative divided the country into four business units[83] with different quantities of supply (based on numbers of boreholes and pump type) in each. Guaranteeing a market for the supply of handpumps was conditional on maintaining stock levels for user communities of fast, medium and long term wearing spare parts for ease of access by the communities.

During the FY 2004/05, the following achievements were registered:

- A total of 1,274 handpumps of different sizes and quality were distributed to the districts and installed.
- A supply network of spare parts has so far been established in 37 district headquarters
- A total of 190 handpump mechanics were trained by DWD on the maintenance of the handpumps in all the 55 districts.
- A monitoring plan was established in the period, ensuring that there is the agreed stock of spares in each of the outlets as per the contract.

However, there have also been a number of problems with the initiative. In particular, the pace of supplying spare parts in the District has been slow. This is partly due to the delays in procurement arising out of lack of understanding by the contracts committee and the fact that suppliers have not been paid for the supplies that they have made to Districts. The latter is due to unavailability of funds for central projects. In addition, according to the contract DWD was supposed to promote the outlets for spare parts. This has not been undertaken due to lack of funds.

In FY 2005/06, a second tender for handpump supplies will be issued. A monitoring plan for the distribution of handpump spares will be strengthened, and more handpump mechanics shall be trained. These efforts will ensure that the non-functionality of the sources fitted with handpumps is reduced further.

5.7 Monitoring of Rural Water Facilities

5.7.1 *Monitoring by Central Government*

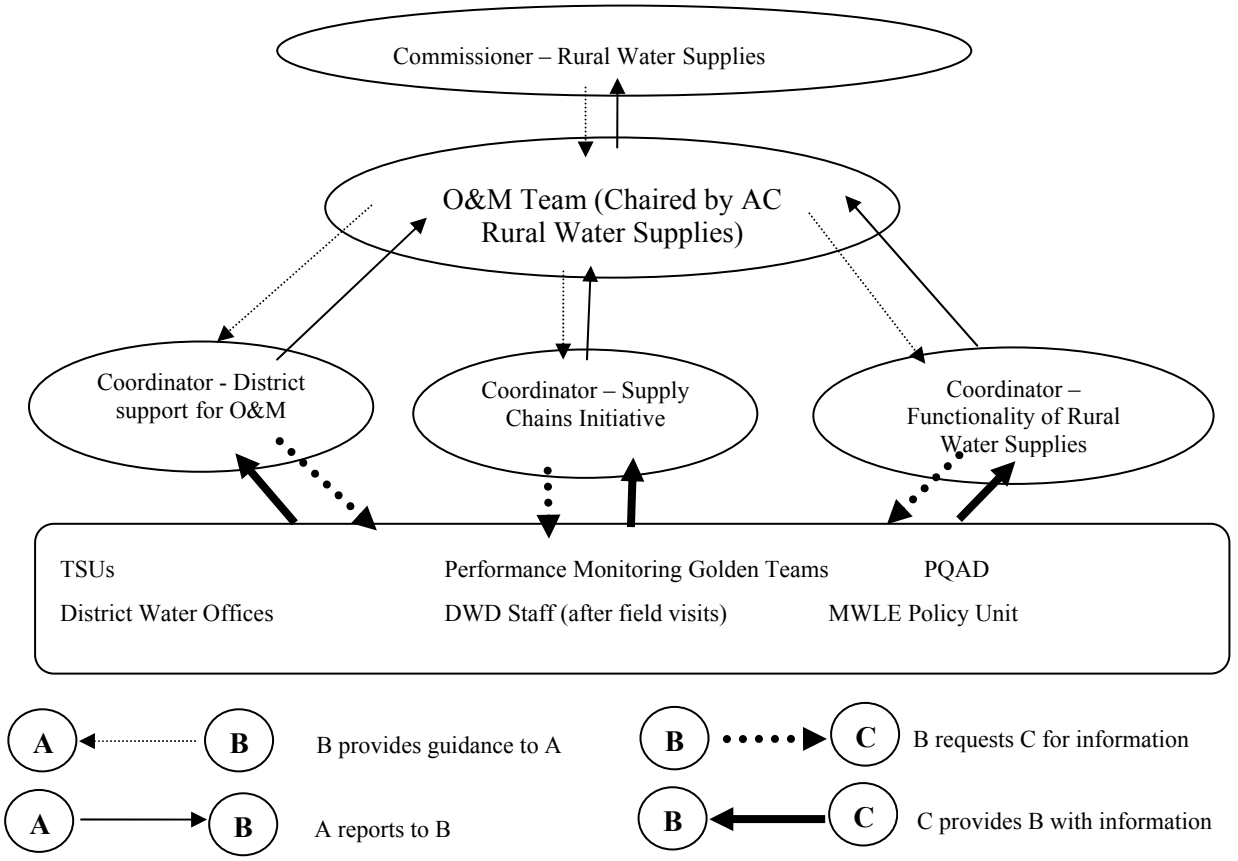
In July 2005, DWD developed an monitoring system and operational structure (O&M team) to consider the O&M of rural water facilities on a regular basis (MWLE, 2005c). The objectives of the O&M team are: The objectives of the O&M team are that:

1. policies set by central Government, which affect O&M of rural water supplies, are based on a thorough understanding of field realities from September 2004;
2. from September 2005 onwards, information, ideas and concerns from different stakeholders regarding O&M are systematically synthesised, reflected upon and utilised for informed decision making;
3. stakeholders place a high priority on O&M of rural water supplies by November 2006;
4. stakeholders are aware of current O&M related policies by November 2005;
5. from September 2005 stakeholders are regularly informed of O&M status and key issues;

[83] LOT 1 - Northern Uganda (Apac, Lira, Gulu, Pader, Kitgum, Adjumani, Moyo, Yumbe, Arua and Nebbi), LOT. 2: Eastern Uganda (Jinja, Iganga, Kamuli, Iganga, Bugiri, Busia, Tororo, Mbale, Pallisa, Sironko, Kumi, Soroti, Kaberamaido, Katakwi, Nakapiripirit, Moroto and Kotido), LOT 3: Central Uganda (Kayunga, Mukono, Wakiso, Mpigi, Luwero, Nakasongola, Masindi, Hoima, Kiboga, Masaka, Sembabule, Kalangala and Rakai) and LOT 4: Western Uganda (Kabale, Kisoro, Ntungamo, Rukungiri, Kanungu, Mbarara, Bushenyi, Kasese, Kamwenge, Kabarole, Kyenjojo, Bundibugyo, Kibaale and Mubende)

6. community based monitoring system being taken up by September 2010.

Figure 5.3. O&M Monitoring - Operational Structure (District to DWD)

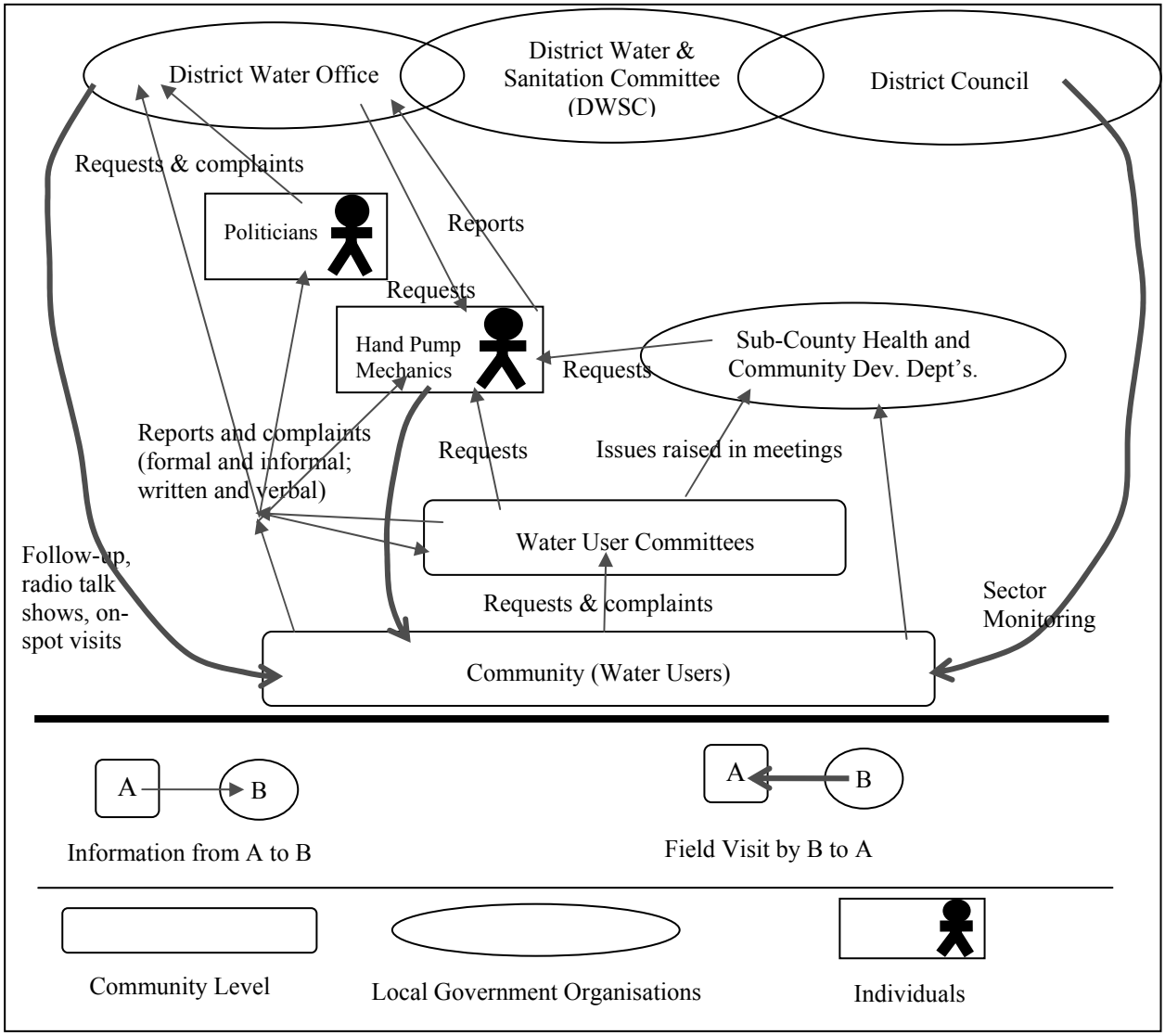


5.7.2 *Monitoring by Local Government*

Monitoring mechanisms for O&M in the Districts do exist, although in many cases they do not involve systematic information collection and synthesis followed by analysis, action and reporting. There is considerable variation in O&M monitoring practices between Districts. Wakiso District for example, has used local revenue to employ handpump mechanics to collect information from communities and provide some on-going support to them. Some other Districts rely more on complaints from communities, either directly, or through intermediaries such as politicians or the sub-county extension staff.

Figure 5.4 sets out the numerous ways in which information about O&M issues is transferred between stakeholders at District, Sub-County and community levels. As part of the commitment of the DWD O&M team to improving overall functionality of rural domestic water supplies, it intends to focus considerable attention on improving information collection, synthesis, analysis and decision making between communities and local Government, and ultimately within communities themselves. However, DWD realises that in order for these improvements to be made, adequate institutional backup from the centre is essential. Information collected, synthesised and analysed by communities and Districts must be useful for them in their decision making. The centre (DWD) needs to provide adequate support for this.

Figure 5.4. Current Information Transfer for O&M (User, District and Sub-County)



Government restructuring at District level has been raised as a potential factor to undermine monitoring of RWSS. Loss of the Assistant District Water Officers responsible for mobilisation, planning and sanitation from the District Water Offices has raised concerns. It remains to be seen how well RWSS monitoring will be undertaken in the new structures. The lack of graduated tax revenue from 2005/6 onwards is also causing concern as some of this money provided fuel and allowances for monitoring by extension staff.

Chapter 6

Conclusions and Recommendations

Water and sanitation sector performance reporting is providing an increasing wealth of information for decision making with respect to sector policy and resource allocation. It is also raising new questions surrounding what is causing changes in performance and what can be done to improve performance further. This chapter sets out conclusions and recommendations to further improve the sector.

6.1 Definition and Calculation of Access

Currently, rural access to safe water is defined as an improved water source within 1.5 km of the home. It has been calculated based on an assumed number of users for each water point.

> ***Given the importance of distance for increased consumption and reduced collection time, it is recommended that the walking distance of 1.5 km is reconsidered. This will include a re-evaluation of the number of users per water source.***
>
> ***It is recommended that the methods used to compute coverage are improved. This includes improving the way that districts currently collect, store and report data on coverage and ensuring that all improved water sources are included.***

Rainwater harvesting facilities serve over 18% of the rural population in the wet season (NSDS, 2004). Districts are constructing rainwater harvesting facilities and providing training in construction, and DWD is promoting domestic roof water harvesting through pilot projects.

> ***Given the fact that rainwater harvesting is an important technology for water supply in Uganda, it is recommended that mechanisms are developed to include it in the computation of coverage.***

Small and large (NWSC) towns have different ways of calculating access. This makes it very difficult to calculate overall urban coverage and an overall (urban and rural) MDG. A comprehensive database of water facilities for all 143 small towns is lacking and there is lack of clarity about whether the coverage (and investment) for rural growth centres should be considered as urban or rural.

> ***It is recommended that the method for estimating access to safe water in urban areas is reviewed. This includes a database of urban water facilities.***

When calculating access, consideration should be given to households which are currently considered as un-served but draw water from sources that they have developed or improved themselves. Such sources can be upgraded to even safer supplies which offer great security of supply. This addresses O&M issues and could provide a solution to funding limitations.

> ***It is recommended that the sector considers how to incorporate sources which have been improved by users themselves when considering access to safe water.***

6.2 Water Monitoring Resources Regulation

Although poor water quality may be having adverse affects on people's health there is no mechanism for systematic monitoring of drinking water quality. Water authorities and other

private operators are still experiencing problems in relation to water treatment as a result of lack of equipment and necessary technical know-how. NWSC seems to be well-equipped in terms of personnel and equipment. DWD is now planning to provide essential water quality testing equipment to the water authorities for routine water quality monitoring.

It is recommended that the water quality monitoring strategy is implemented.

There is need to explore the possibility of collaboration between DWD and NWSC in water quality testing.

Out of 1,280 manufacturing industries, only 76 have applied for wastewater discharge consent and a mere 45 have been issued permits. Moreover, there is no enforcement of the respective permit conditions. Although it can be argued that not all industries produce waste water, it is vital to establish an inventory of potential wastewater applicants for the regulatory function to be carried out to stem further damage to the environment. There is need to implement incentives, compliance and enforcement programs for the wastewater discharge regulations. This is pertinent in light of the deterioration of the water quality of Lake Victoria and the environment as a whole.

It is recommended to compile an inventory/database of all potential producers of wastewater who require a permit(s) under the present law.

It is recommended to undertake awareness raising to sensitise industrialists about the importance of wastewater treatment before discharge into the environment. The adoption of cleaner production and installation of effluent treatment plants to comply with environmental standards needs to be promoted.

In addition, urban areas should have effluent treatment facilities and ensure compliance to environmental standards and ensure proper disposal and management of solid wastes.

Government structures responsible for environmental protection should be enabled (with qualified staff and equipment) to monitor the compliance of the effluent from industries and municipalities with the effluent standards in force and should be given the power to take action in case of non-compliance.

Since April 2002, data indicates that Lake Victoria has experienced continuously falling water levels and reduced storage despite the fact that data on major hydrologic processes around the lake do not reveal below normal performance. The drop in levels has been a subject of social, economic and political concern in East Africa. Apart from Hydropower potential of the Nile that is being harnessed by Uganda, Lake Victoria and River Nile controls the regime of other water bodies in Uganda. The permit for Nalubaale,and Kiira dams has been renewed.

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.

6.3 Sanitation and Hygiene

There are more differences in access to latrines around Uganda than in access to improved water supplies. Sanitation access in schools is below the target. Also, evidence collected so far suggests that hygiene practices in households are inadequate. The performance as measured against the hand-washing indicator is the most worrying of all the indicators. There is increasing recognition in the sector that sanitation and hygiene has been given insufficient emphasis in the past. If maximum impacts of improved water supplies are to be attained, then more emphasis on sanitation and hygiene activities and investment is required. In order to improve latrine coverage and hand washing it necessary to revitalize the Kampala Declaration on Sanitation (KDS) which spells out the roles of all stakeholders from the households, communities, leaders and institutions.

It is recommended that a higher proportion of sector resources are devoted to hygiene and sanitation, the particular focus of the 2006 sector performance report could be sanitation and hygiene. In addition, more could be done to identify, disseminate and replicate good practices as well as an incentive / penalty system to ensure better sanitation and hygiene performance in the future.

It is recommended that all sectors (water, health, education and local government) need to identify budget lines for sanitation and hygiene.

There is a need to standardize key sanitation terminologies (eg latrine, hand washing, safe water) and define minimum standards. Furthermore, there is need to improve the quality of data its validity.

6.4 Water for Production

In comparison to the other water and sanitation sub-sectors, water for production lags behind conceptually, and in terms of institutional development, demand identification, planning community participation, construction and operation and maintenance (O&M). The main constraints lie in the history whereby the sub-sector has been oscillating between different ministries.

It is recommended that institutional roles and responsibilities are clarified. The coordination between stakeholders (DWD/MWLE, MAAIF, District and sub-county Government and communities) needs to be improved.

It is recommended that a comprehensive database of all existing water for production facilities is established. This needs to include all facilities constructed by all actors investing in water for production.

6.5 Investment, Allocation and Costs

The different sub-sectors have developed investment plans to meet their targets. Unfortunately the sub-sector investment plans have not yet been revised or integrated into a comprehensive sector investment plan which would enable realistic estimates of overall investment requirements, committed funding and any financing gaps. Presently, the Government, through the Medium Term Expenditure Framework (MTEF), sets ceilings for funding to the various sectors.

Given the limitation of funds to the sector, it is essential that the allocation criteria between the sub-sectors are clearly set out with stated priorities. Likewise there needs to be clarity with respect to funding priorities within each sub-sector.

A key sector objective is '*some for all not all for some'*. However, this sector report has identified major inequalities in the provision of water and sanitation services both between districts and within districts in Uganda. In order to enable districts, sub-counties and parishes to meet national coverage targets there is a need to improve the equity of service delivery in the future.

It is recommended that the resources allocation mechanism between and within districts be reviewed with the aim of making allocations more equitable. Guidelines should be given to districts on how resources can be more equitably allocated within the lower local government areas. Allocation mechanisms need to take the technology options and associated investment costs for different areas into consideration.

NGOs/CBOs are making a significant contribution to increase access to safe water and sanitation in Uganda.

It is recommended that Government and, in particular key sector donors should boost NGO/CBO involvement by providing mechanisms to enable them to access more funds.

The water and sanitation services in many of the IDP camps are still insufficient.

It is recommended that investment into the provision of water and sanitation in the IDP camps is increased.

There has been considerable variation in the overall per capita investment cost over the last five years as well as the between small towns, RGCs and Districts. Arguably, there may be savings that could be made through reducing investment costs.

It is recommended that more in depth analysis of investment costs is undertaken for both rural and urban water supplies.

6.6 Improving sector performance measurement

Previous sector monitoring and review work has tended to be very broad and has involved short visits to many parts of Uganda. Work undertaken by MWLE (PQAD), DWD, MoH, consultants and others is not well coordinated, overlaps and tends to be inadequate to make meaningful conclusions.

It is recommended that future sector monitoring and review work is better coordinated, is much more focused in fewer parts of the country, is based on an assessment of poor and good performers (as measured by absolute and incremental performance levels using the 'golden' indicators). Future MWLE PAF monitoring should be based on the sector performance measurement framework. The information should be analysed and reflected upon by senior management in order to improve overall sector performance.

Linked to improved performance reporting is the need to more systematically find out what is causing better performance and what can be done to disseminate learning more widely.

It is recommended that more effort is made to disseminate the good operational practices that are leading to good performance, through district assemblies, inter-district meetings (IDMs), guidance notes, articles, exchange visits and other mechanisms.

NGOs/CBOs are making a significant contribution to increase access to safe water and sanitation in Uganda.

It is recommended that efforts of UWASNET to capture NGO inputs in the sector should be further strengthened.

Some very interesting results have been obtained from the analysis of district data on the indicators for access, functionality, equity and hygiene and sanitation over two or three years. There have been some significant reported increases and decreases in performance by individual districts for the above four indicators. This suggests that some data may not be accurate.

It is recommended that during 2005/6, data supplied by districts under the Fiscal Decentralisation Strategy becomes the primary source of data used to measure performance against the golden indicators and that mechanisms are strengthened to check the accuracy of the data that is provided.

Current analysis of urban functionality considers active connections only. This focuses on the user and does not include sufficient analysis of supply related issues and customer care.

It is recommended that entire urban water system is to be considered in analysis of functionality.

The indicator used to measure equity is rather complicated and difficult to relate to translate into physical realities. This makes it a difficult tool to be used for planning purposes and it does not seem to be readily applicable in the urban setting.

It is thus recommended that the equity indicator be simplified for next year's sector performance.

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ANNEXES

Annex 1. Status of 2004 JSR Undertakings (as of 13th September 2005)

ACTIONS AND OUTPUT TARGETS	
UNDERTAKINGS (Set by JSR Sept 2004)	Status September, 2005
THEMATIC AREA: INSTITUTIONAL	
1. Fill 80% of DWD vacant posts and de-concentrate accounts and procurement functions to DWD in accordance with the existing laws, guided by the MWLE Functional Analysis Report recommendations.	- About 60% of positions have been filled to date. This corresponds to 11 out of 61 positions in the new structure have been filled. - Letter regarding de-concentration of account has been written to the Accountant General (MFPED). - Proposal on de-concentration of procurement submitted to PS/MWLE.
THEMATIC AREA: SECTOR FINANCE	
2. Integrated sector-wide investment plan and allocation principles, considering pro-poor subsidies, sanitation requirements and local government allocations in place and reflected in the sector budgets for 2005/6.	***Sector Finance thematic group held 4 meetings*** **Undertaking 2:** - **The MTBF and the 2005/6 Budget are confirmed, however, sector allocations have not changed much from last year as:** o **commitments to on-going projects and sector funding agreements mean that significant changes may take several years to realise (as projects phased out and others taken on)** o **MoFPED did not agree to our requests to increase budget ceiling to allow extra funding to the rural sub-sector (district grant) from ADB earmarked budget support funds, in fact our sector allocation was actually cut** - Pro-poor strategy has been drafted but still remains to be fully operationalised - Final sector-wide SIP was not completed as awaiting completion of Undertakings 4 (WfP) and 10 (WRM). More work is needed to fully institutionalize the SIM.
THEMATIC AREA: SECTOR PERFORMANCE	

ACTIONS AND OUTPUT TARGETS	
UNDERTAKINGS (Set by JSR Sept 2004)	Status September, 2005
3. Define and then annually carry out Value for Money and Tracking Audits on a sample basis. Institute best practice and take corrective action from previous audits. 7. Develop sector monitoring indicators to measure performance on gender and community capacity development for sustainability of facilities. **11. Institutionalise the Sector Performance Assessment process by assigning roles, responsibilities and resources, and improving data collection and management systems, especially at the local government level**	***Thematic group held 3 meetings:*** **Undertaking 3:** - 2003/04 Tracking study report submitted. - Procurement of consultancy firm to carry out 2004/05 VfM/Tracking study in progress. **Undertaking 7:** - Indicators for gender and community developed and included as golden indicators **Undertaking 11:** - Institutionalization process for Sector Performance on track.
THEMATIC AREA: WATER FOR PRODUCTION	
4. The Water for Production Reform Strategy finalised and outline investment plan for funding in place, based on situation analysis and studies, considering bulk surface water transfers. **12. A Water for Production sub-group to the Water Supply and Sanitation Working Group established.**	***WfP thematic group held 6 meetings:*** **Undertaking 4:** - Final draft of WfP cabinet paper prepared - Comments from MAAIF need to be addressed and carry forward the process of approval of WFP-SIP - WFP component description finalized - Bulkwater supply included in the new strategy and detailed studies will soon start **Undertatking 12:** - ToR drafted and approved by WSSWG - WFPSG in place and functional
THEMATIC AREA: URBAN & SECTOR REFORM	
5. Implementation of the urban water and sanitation reform: Approval, by September 2005, of the roadmaps for the establishment of the AHA and the regulatory framework.	***Thematic group held 2 meetings:*** **Undertaking 5:** - Finalized concept papers on transformation of NWSC into AHA and establishment of a framework for regulation of the urban water and sanitation sub-sector. Finalization was after a stakeholders' workshop held on June 21, 2005. - Draft implementation/action plan ready for presentation at the JSR. - Proposed strategy for long term debt NWSC resolution to be presented at JRSR
THEMATIC AREA: SANIT-ATION AND HYGIENE	

ACTIONS AND OUTPUT TARGETS	
UNDERTAKINGS (Set by JSR Sept 2004)	Status September, 2005
6. Selected local governments are testing models to establish DWSCCs that have integrated local workplans that enhance hygiene promotion and sanitation. By September 2005, 10% of the local governments should have active DWSCCs in place with HP&S workplans.	***Sanitation sub-group held 9 meetings:*** **Undertaking 6:** - Formation of DWSCC included in sector guidelines for 2005/06. - Out of 56 districts 51 DWSCC formed and 46 functional. DWSCC included in Water Sector guidelines (for districts) and TSUs supporting selected districts in preparing workplans for sanitation activities. - 82%% (46 no.) of districts with integrated Sanitation and Hygiene promotion workplans
THEMATIC AREA: O&M AND EMERG-ENCY RESP-ONSE	
8. Operation and Maintenance: Implement O&M support structures to improve functionality especially for valley tanks, dams, GFS and emergencies.	***O&M thematic group held 6 meetings:*** **Undertaking 8:** - The aspects of this undertaking that relate to rural water supply (operationalising the O&M Framework, finalisation of the RGC strategy, implementation of supply chains) have been achieved. - However, aspects of this undertaking that relate to Water for Production (development and testing of mechanisms to improve O&M of valley dams and tanks) have not been finalised
THEMATIC AREA: WATER RES-OURCE MANAGEMENT	
9. Develop a National Water Quality Management Strategy. 10. Finalise the WRM reform strategy.	***Thematic group held 7 meetings:*** **Undertaking 9:** - National Water Quality Management Strategy report completed **Undertaking 10:** - WRM Reform Strategy report completed - WRM Cabinet memo being prepared

NB Undertakings in bold type indicate PRSC requirements

Annex 2. Overall Sector Budget Performance

SUB SECTOR ALLOCATIONS FY 04/05 '000,000										
	PROGRAMME	APPROVED BUDGET		TOTAL	RELEASED		TOTAL	EXPENDITURE		TOTAL
		GOU	DONOR		GOU	DONOR		GOU	DONOR	
RURAL WATER										
	District Conditional Grant	29,602	-	29,602	29,602	-	29,602	24,484	-	24,484
Central Projects	ERT	119	321	440	110	217	327	101	217	318
	School Sanitation/IDP	1,700	-	1,700	1,655	-	1,655	1,655	-	1,655
	Support to Rural Water Sector	3,829	10,015	13,844	3,626	5,084	8,710	3,626	5,084	8,710
	South Western Towns W &S project	1,024	4,992	6,016	945	3,066	4,011	875	3,012	3,887
	JICA	-	1,500	1,500	-	1,010	1,010	-	1,010	1,010
	TOTAL	**36,274**	**16,828**	**53,102**	**6,336**	**9,377**	**15,713**	**6,257**	**9,323**	**15,580**
URBAN WATER SECTOR				-			-			-
	SMALL TOWNS			-			-			-
	Mid Southern Towns	845	2,948	3,793	840	2,948	3,788	840	2,948	3,788
	Mid Western Towns	994	9,000	9,994	853	3,954	4,807	853	3,954	4,807
	North Eastern own-BADEA	538	5,425	5,963	445	953	1,398	432	953	1,385
	Support to Small Towns	5,525	2,839	8,364	5,525	2,319	7,844	5,525	2,319	7,844
	Rural towns water-ADB	402	1,050	1,452	176	894	1,070	152	894	1,046
	Total	**8,304**	**21,262**	**29,566**	**7,839**	**11,068**	**18,907**	**7,802**	**11,068**	**18,870**
	NWSC	6,314	46,446	52,760	5,174	16,883	22,057	4,355	16,883	21,238
Water Resources Management				-			-			-
	Mitigation of L. Kyoga	300	-	300	216	-	216	216	-	216
	Operation Water Resources	285	251	536	285	251	536	233	251	484
	Support to WRMD	1,064	3,945	5,009	996	3,400	4,396	996	1,225	2,221
	LVEMP	281	660	941	191	135	326	191	135	326
	TOTAL	**1,930**	**4,856**	**6,786**	**1,688**	**3,786**	**5,474**	**1,636**	**1,611**	**3,247**
	Water for Production	4,762	-	4,762	3,745	-	3,745	3,665	-	3,665
				-			-			-
	Project Management Support	628	5,920	6,548	529	3,509	4,038	529	3,509	4,038
	Urban Reform Project	468	2,380	2,848	339	1,400	1,739	331	1,400	1,731
	Grand Total	**58,680**	**97,692**	**156,372**	**55,252**	**46,023**	**101,275**	**49,059**	**43,794**	**92,853**

Annex 3. District Water and Sanitation Conditional Grant (DWSCG)

	Disitrct	Pop. Served	Budget	Expenditure ('000)	Per Capita Cost (UShs)
1	ADJUMANI	1,800	139,504	93,276	51,820
2	ARUA	15,500	875,726	861,028	55,550
3	MOYO	-	171,868	-	-
4	NEBBI	9,300	489,998	394,227	42,390
5	YUMBE	900	149,665	91,636	101,818
6	APAC	13,500	680,417	634,692	47,014
7	GULU	7,500	521,624	488,552	65,140
8	KITGUM	-	743,408	350,092	-
9	LIRA	17,400	684,248	632,883	36,373
10	PADER	7,800	395,630	377,528	48,401
11	KABERAMAIDO	5,100	268,205	208,540	40,890
12	KATAKWI	9,600	467,598	436,919	45,512
13	KOTIDO	3,500	371,310	340,522	97,292
14	KUMI	8,800	581,937	535,883	60,896
15	MOROTO	6,600	511,718	447,841	67,855
16	NAKAPIRIPIRIT	300	216,233	81,926	273,087
17	SOROTI	15,900	764,389	621,497	39,088
18	BUGIRI	3,100	383,494	99,087	31,964
19	BUSIA	5,700	243,668	241,160	42,309
20	IGANGA	18,000	1,180,784	1,114,477	61,915
21	JINJA	7,100	340,540	255,592	35,999
22	KAMULI	19,200	968,578	837,814	43,636
23	KAPCHORWA	7,350	293,750	180,479	24,555
24	MAYUGE	11,500	340,127	310,749	27,022
25	MBALE	35,050	905,400	747,464	21,326
26	PALLISA	11,500	679,848	456,515	39,697
27	SIRONKO	14,000	331,972	206,181	14,727
28	TORORO	13,000	736,228	240,669	18,513
29	HOIMA	20,300	365,646	321,236	15,824
30	KAMPALA	-	-	-	-
31	KAYUNGA	7,200	302,620	283,321	39,350
32	KIBOGA	7,800	263,914	240,247	30,801
33	LUWEERO	11,700	642,109	195,148	16,679
34	MASINDI	26,000	517,368	591,044	22,732
35	MPIGI	29,700	1,123,914	1,049,628	35,341
36	MUKONO	32,200	994,390	856,441	26,598
37	NAKASONGOL	2,700	265,951	228,879	84,770
38	WAKISO	25,500	712,151	708,536	27,786
39	BUNDIBUGYO	5,400	175,730	162,250	30,046
40	KABAROLE	20,200	743,890	316,391	15,663
41	KAMWENGE	10,800	569,428	541,125	50,104
42	KASESE	6,500	344,199	201,343	30,976
43	KIBAALE	6,300	253,700	205,464	32,613
44	KYENJOJO	16,600	829,313	828,438	49,906
45	MUBENDE	28,400	606,191	832,382	29,309
46	KALANGALA	-	70,484	65,024	-
47	MASAKA	25,600	848,103	600,305	23,449
48	RAKAI	7,600	714,326	711,216	93,581
49	SEMBABULE	3,600	394,098	483,650	134,347
50	BUSHENYI	50,350	933,592	1,001,991	19,901
51	KABALE	21,800	770,104	717,916	32,932
52	KANUNGU	5,250	227,251	221,649	42,219
53	KISORO	1,800	225,230	140,344	77,969
54	MBARARA	5,700	1,187,483	569,632	99,935
55	NTUNGAMO	18,900	551,922	516,441	27,325
56	RUKUNGIRI	13,800	631,700	586,684	42,513
	Total	**680,700**	**29,702,674**	**24,463,954**	**35.939**

1st, 2nd and 3rd Quarter SUMMARY REPORT OF PERFORMANCE - FY 2004/05

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	Managemer
1	ADJUMANI	28,1	23,3	17.1	1	1		87	254028	180481	71.0	27,546,0	1,18	66	-	Able Holdings Ltd
2	BOMBO	29,121	22,484	22.8%	263	250	13	0	20768400	20027760	96.4%	34,491,132	1,534	58	34	Kalebu Ltd
3	BUDADIRI	33,393	21,012	37.1%	464	318	5	0	16222249	13810946	85.1%	9,529,834	454	145	15	Jowa Engineering
4	BUDAKA		8,566		170	103	0	0	9740202	9977575.5	102.4%	9,567,500	1,117	104	29	Bisons Consult
5	BUGIRI	48,579	39,703	18.3%	562	384	20	2400	48846564	43137570	88.3%	27,597,379	568	177	14	Jowa Engineering
6	BUKOMANSIMBI	5,765	5,479	5.0%	87	85	0	0	8532717	8034350	94.2%	11,527,739	2,000	74	57	Bright Technical S
7	BUNDIBUGYO	20,468	15,188		250		0	0	11721200	4485050		11,312,000	97		16	WSS Services Ltd
8	BUSEMBATYA	18,413	15,873	13.8%	136	118	65	0	14397400	14,536,826	101.0%	17,466,509	949	82	29	Bika Ltd
9	BUSIA	43,300	63,304		430	325	53	1000	82817950	61161230	73.9%	63,664,676	624	96	14	Kalebu Ltd
10	BUSOLWE	2,325	1,896				1	0	2214340	2360404		1,608,600	800			Bisons Consult
11	BUWENGE	42,437	37,041	12.7%	482	356	36	0	37663400	29138874	77.4%	33,005,922	778	88	8	Bika Ltd
12	DOKOLO	9,100	7,649	15.9%	32	26	2	1080	8545600	7353600	86.1%	11,792,200	1,296	62	125	Jowa Engineering
13	HOIMA	59,899	28,970				7	0	28998207	26021200		40,174,345	822			Irumu & Associate
14	IBANDA	41,534	57,141		574	519	30	0	32136885	28340100	88.2%	24,819,437	209	114	7	George and Comp
15	IGANGA	35,666	28,865	19.1%	352	340	23	400	28392880	8975060	31.6%	39,683,231	1,113	23	20	Bika Ltd
16	KABERAMAIDO	2,518	2,268	9.9%	19	15	7	2560	2370200	2256050	95.2%	7,982,037	3,170	28	211	Jowa Engineering
17	KAKIRI	17,722	15,135	14.6%	87	86	47	0	15543152	15050148	96.8%	15,400,000	869	98	46	Bika Ltd
18	KALANGALA	11,993	9,822	18.1%	141	127	3	1400	11804345	12766902	108.2%	17,978,915	1,499	71	21	WSS Services Ltd
19	KALIR0	23,194	20,214	12.8%	275	223	19	200	23243800	16688734	71.8%	26,480,616	1,142	63	11	Bika Ltd
20	KALISIZO	39,215	31,148	20.6%	287	229	30	0	36443745	36624782	100.5%	48,455,810	1,236	76	17	WSS Services Ltd
21	KALUNGU	4,271	3,903	8.6%	86	82	0	0	6398776	5707472	89.2%	8,670,970	2,030	66	81	Bright Technical S
22	KAMULI	75,026	62,853	16.2%	706	592	54	0	61316154	49155661	80.2%	61,196,133	816	80	10	Bika Ltd
23	KAPCHORWA	130,432	33,148	74.6%	352	320	0	4700	15155713	6601400	43.6%	7,774,000	60	85	-	Jowa Engineering
24	KATAKWI	4,176	3,659	12.4%	92	76	0	0	5488289	2266600	41.3%	7,653,500	1,833	30	54	Jowa Engineering
25	KATWE-KABATORO	3,200	2,570				2	50	2450050	2023420		5,642,420	1,522			WSS Services Ltd
26	KAYUNGA	31,101	17,963	42.2%	545	250	11	12264	21038264	16428664	78.1%	11,372,362	366	144	7	Bisons Consult
27	KIBOGA	31,779	30,814	3.0%	42	41	24	1300	29665206	27898846	94.0%	46,914,947	1,476	59	71	Bika Ltd
28	KINONI	4,744	3,579	24.6%	208	207	0	0	3963960	3394630	85.6%	11,827,600	2,493	29	19	WSS Services Ltd
29	KISORO	120,015	106,936	10.9%	388	358	46	1300	112655223	115066480	102.1%	131,423,435	1,095	88	49	Bright Technical S
30	KITGUM	120,460	99,224	17.6%	406	338	78	2957	91493200	143972267	157.4%	155,864,768	1,294	92	39	N.D Brothers Ltd
31	KOTIDO	7,572	5,754				2	400	12418000	6339240		12,973,904	2,538			T/C
32	KUMI	27,916	24,729	11.4%	158	126	42	0	43434775	37393037	86.1%	36,882,957	1,321	101	25	Jowa Engineering
33	KYAZANGA	7,153	6,138	14.2%	208	208	0	0	7181226	7482380	104.2%	12,090,280	1,690	62	14	WSS Services Ltd
34	KYOTERA	0	0				0	0	0			0	1,625			T/C
35	LAROPI	2,020	1,090	46.0%	28	28	0	300	1090000	940000	86.2%	5,235,160	2,592	18	107	Able Holdings Ltd
36	LUGAZI	63,010	74,313		544	467	101	600	74315500	79349825	106.8%	69,082,088	489	115	-	Kalebu Ltd
37	LUKAYA	22,580	14,236	37.0%	287	280	282	0	22604500	14228816	62.9%	37,986,680	1,682	37	24	Bright Technical S
38	LUWERO	46,935	64,424		717	674	27	0	69257600	65373500	94.4%	65,224,524	776	100	14	Kalebu Ltd
39	LWAKHAKHA	0	0				0	0	0			0	412			Jowa Engineering
40	LYANTONDE	32,910	30,404	7.6%	361	334	51	0	51944604	48846169	94.0%	76,701,365	2,331	64	17	WSS Services Ltd
41	MASINDI	568,750	495,391	12.9%	1392	1058	141	1170	423783929	311180557	73.4%	350,945,763	617	89	14	Irumu & Associate
42	MBIRIZI	11,521	6,922	39.9%	209	209	201	5000	7779360	11158150	143.4%	12,137,300	1,053	92	24	WSS Services Ltd
43	MOROTO	5,141	3,530	31.3%	166	80	15	2050	2725000	3788950	139.0%	20,815,205	4,049	18	24	M/C
44	MOYO	34,533	14,970	56.7%	712	528	26	560	15888000	10557800	66.5%	31,849,000	922	33	6	Able Holdings Ltd
45	MUBENDE	43,467	34,980	19.5%	246	168	18	0	19219500	13453500	70.0%	48,697,874	1,120	28	65	Irumu & Associate
46	NAKASONGOLA	15,497	12,251	20.9%	198	179	17	2040	20942832	19160956	91.5%	38,940,832	2,513	49	30	Kalebu Ltd
47	NGORA	73,112	51,530	29.5%	116	98	47	0	65211090	43325714	66.4%	67,128,861	918	65	78	Jowa Engineering
48	NKONKONJERU	3,200	4,337		171	125	24	1648	7459221	9729650	130.4%	29,941,351	2,128	32	23	Kalebu Ltd
49	NTUNGAMO	38,740	34,062	12.1%	310	251	36	500	39849500	38391300	96.3%	32,014,940	826	120	16	WSS Services Ltd
50	PAKELE	3,200	1,875	41.4%	31	31	0	600	1875000	1153200	61.5%	5,061,000	1,582	23	-	Able Holdings Ltd
51	PALLISA	65,167	31,349	51.9%	475	264	21	1133	41076865	37141159	90.4%	19,530,000	300	190	19	Bisons Consult
52	RAKAI	15,067	9,382	37.7%	194	154	70	300	19355193	20196927	104.3%	29,700,224	1,971	68	26	WSS Services Ltd
53	RUKUNGIRI	48,749	38,457	21.1%	425	394	11	0	45998550	37693900	81.9%	43,652,217	895	86	12	WSS Services Ltd
54	WAKISO	26,717	25,148	5.9%	159	158	64	0	25625800	19559632	76.3%	24,656,251	923	79	31	Bika Ltd
55	WOBULENZI	39,407	33,711				41	1270	33711000	35057480		32,483,276	780			George and Comp
	AVERAGE			**23.0%**							**88.6%**		**1,282**	**76**	**33**	
	TOTAL	**2,240,314**	**1,838,701**		**14,711**	**11,717**	**1,846**	**57,917**	**1,868,177,966**	**1,622,812,634**		**2,032,155,157**				

Annex 4. Small Towns Water Supplies:

Annex 5.

ANNUAL SUMMARY OF PERFORMANCE for NWSC TOWNS(FY 2004/05)

TOWNS	WATER (m3)			CONNECTIONS (No.)				Extensions	T. Bills 000' (shs)	T. Collections	Collection	T. Cost of sys. Operation	Cost per
	Supplied	Sold m3	UFW(%)	Total	Active	Inactive	New	made (m)		000'(shs)	Efficiency(%)	(Shs.000')	Unit
KAMPALA	41,194,784	24,465,126	40.6%	74,777	62,356	12,421	12,174	95,857	38,029,536	34,808,890	92%	11,602,739	282
JINJA/NJERU	3,937,000	3,094,000	21.4%	9,158	7,066	2,092	1,138	22,250	4,782,529	3,871,911	81%	2,224,889	565
ENTEBBE	2,683,756	2,043,156	23.9%	6,375	5,974	401	1,897	22,310	2,850,617	2,530,465	89%	1,163,514	434
TORORO	990,303	881,364	11.0%	2,414	2,318	96	329	11,800	1,080,625	956,891	89%	802,435	810
MBALE	1,548,000	1,362,000	12.0%	4,756	4,688	68	714	16,900	2,112,875	1,673,820	79%	1,397,112	903
MASAKA	993,001	866,701	12.7%	3,601	3,363	238	859	15,690	1,196,378	938,364	78%	910,374	917
MBARARA	1,801,157	1,662,864	7.7%	4,956	4,664	292	917	13,400	2,310,740	2,281,234	99%	1,351,025	750
LIRA	898,000	823,474	8.3%	2,908	2,550	358	906	13,300	939,919	740,554	79%	694,124	773
GULU	719,845	666,065	7.5%	2,166	1,973	193	571	8,845	915,837	665,072	73%	646,594	898
KASESE	529,865	411,061	22.4%	2,123	2,020	103	450	4,744	514,299	485,385	94%	427,555	807
FORT PORTAL	550,667	506,614	8.0%	2,373	2,305	68	533	19,950	650,899	596,030	92%	481,112	874
KABALE	474,710	347,564	26.8%	2,063	2,009	54	435	13,300	511,785	481,578	94%	404,930	853
ARUA	534,790	478,825	10.5%	2,218	2,098	120	681	8,217	545,158	456,230	84%	490,325	917
BUSHENYI/ISHAKA	255,462	196,124	23.2%	1,011	1,000	11	215	12,850	247,451	244,501	99%	354,106	1,386
SOROTI	626,376	417,998	33.3%	2,147	1,489	658	399	15,070	535,613	417,441	78%	591,213	944
TOTAL	**57,737,716**	**38,222,936**	**33.8%**	**123,046**	**105,873**	**17,173**	**22,218**	**294,483**	**57,224,261**	**51,148,366**	**89%**	**23,542,047**	**408**

Annex 6. INVESTMENT COSTS PER CAPITA FOR SMALL

No.	Town	Population		Source of Water	Pipeline Length (km)		Costs- Ushs		
		Initial year	Design		Transmission	Distribution	Consultancy Costs	Borehole drilling	Construction costs
Small Towns									
1	Adjumani		34,935	3 BHs	0.4	1.6	17,926,590	-	178,771,852
2	Moyo	13,123	25,235	Lore Eyi springs	11.6	-	56,664,779	-	565,086,146
3	Katakwi	8,348	10,686	4 BHs	13.8	6.7	108,692,875	108,087,487	843,465,566
4	Kyenjojo	7,928	14,278	4 BHs	3.9	8.7	192,343,500	100,000,000	1,239,328,111
5	Masindi	21,090	39,200	Swamp	11.7	81.1	696,388,175	-	5,199,786,978
6	Matany	5,048	6,784	1 BH			68,954,500	33,500,000	241,620,338
7	Laropi	4,531	5,073	1 BH	3.1	7.7	86,633,646	22,800,000	513,417,603
8	Nyapea	5,362	7,206	1 BH			65,150,300	22,860,000	489,580,100
	Total	**65,430**	**143,397**		**44**	**106**	**1,292,754,365**	**287,247,487**	**9,271,056,694**

NB. Laropi, having a pupulation of above 4,500 has been considered as a small towm

RGCs

No.	Town	Population		Source of Water	Pipeline Length (km)		Costs- Ushs		
		Initial year	Design		Transmission	Distribution	Consultancy Costs	Borehole drilling	Construction costs
1	Ciforo	2,992	4,021	1 BH			65,150,300	22,860,000	420,150,266
2	Kasambya	4,332	5,822	1 BH			72,616,300	28,000,000	429,967,000
4	Mahyoro	3,941	5,296	1 BH			96,012,300	25,186,400	323,765,310
5	Migera	3,696	4,967	1 BH			72,616,300	28,000,000	326,589,250
6	Nyadri	3,669	4,931	1 BH			65,150,300	22,860,000	396,250,122
	Total	**18,630**	**25,037**		**0**	**0**	**371,545,500**	**126,906,400**	**1,896,721,948**
	Grand Total	**84,060**	**168,434**		**89**	**212**	**1,664,299,865**	**414,153,887**	**11,167,778,642**

Annex 7. SAFE WATER COVERAGE IN SMALL TOWNS - URBAN WATER AUTHORITIES

No.	Town	Population June 2005	Total Conn.	Inactive Conn.	House Conn.	Intitutions	Comm/ Ind	Yard Taps	Kiosks	Management By	Other Sources			Data from
											Hand Pumps	Protected Springs	Shallow Wells	Popn. Served
1	ADJUMANI	23,703	155	22	4	4	0	120	27	Able Holdings Ltd	35	-	4	13,300
2	BOMBO	13,226	266	13	6	23	0	237	0	Kalebu Ltd	7	2	6	8,368
3	BUDADIRI	14,896	476	153	14	20	3	439	0	Jowa Engineering Services				9,721
4	BUDAKA	17,360	174	47	5	12	2	155	0	Bisons Consult	17	1		5,448
5	BUGIRI	21,316	567	176	12	42	9	504	0	Jowa Engineering Services	8	3	5	17,856
6	BUKOMANSIMBI	4,494	98	1	0	3	0	92	3	Bright Technical Servicses				3,940
7	BUNDIBUGYO	16,262	214	41	10	3	5	192	4	WSS Services Ltd	3	12		10,980
8	BUSEMBATYA	4,256	136	6	4	8	1	123	0	Bika Ltd				3,103
9	BUSIA	40,996	434	13	12	41	29	339	13	Kalebu Ltd	32	2	2	27,684
10	BUSOLWE	18,335	150	17	1	11	2	136	0	Trandit Ltd	26	0		4,776
11	BUWENGE	15,015	481	5	0	23	0	449	0	Bika Ltd				11,323
12	DOKOLO	4,079	35	5	1	12	2	17	3	Jowa Engineering Services	14	45	2	2,500
13	HOIMA	36,049	690	52	147	41	10	470	4	Irumu & Associates	32	31	8	19,048
14	IBANDA	24,734	581	24	8	27	32	509	5	George and Company				19,740
15	IGANGA	41,514	353	26	42	16	13	274	8	Bika Ltd		0		23,432
16	KABERAMAIDO	21,881	23	4	1	0	2	14	6	Jowa Engineering Services	50	7	13	6,123
17	KAKIRI	5,844	87	2	1	11	0	70	5	Bika Ltd	9	37	34	4,100
18	KALANGALA	3,681	141	12	5	20	0	116	0	WSS Services Ltd	1	6		2,432
19	KALIR0	16,160	277	30	10	28	0	237	2	Bika Ltd				11,221
20	KALISIZO	14,300	289	61	21	28	5	227	8	WSS Services Ltd				10,888
21	KALUNGU	5,498	106	13	0	7	0	96	3	Bright Technical Servicses				4,196
22	KAMULI	12,266	705	34	43	43	3	608	8	Bika Ltd	33		32	10,126
23	KAPCHORWA	10,003	355	32	6	22	6	321	0	Jowa Engineering Services				6,635
24	KATAKWI	8,663	97	19	3	14	0	71	9	Jowa Engineering Services	11		9	4,544
25	KATWE-KABATORO	6,298	52	3	26	6	0	13	7	WSS Services Ltd		3		3,516
26	KAYUNGA	21,085	538	188	-	39	-	499	0	Bisons Consult	23	0	3	17,216
27	KIBOGA	13,312	70	1	0	3	2	53	12	Bika Ltd	4	9	10	11,456
28	KINONI	7,004	208	8	1	15	0	184	8	WSS Services Ltd				5,102
29	KISORO	11,038	458	15		27	25		42	Bright Technical Servicses	2	1		9,237
30	KITGUM	48,059	389	82	80	37	26	221	25	N.D Brothers Ltd	57		31	17,228
31	KOTIDO	13,832	103	23	25	16	0	41	21	T/C	25			8,324
32	KUMI	9,379	169	30	46	15	0	89	19	Jowa Engineering Services	15	3		6,482
33	KYAZANGA	9,984	208	8	0	12	0	188	8	WSS Services Ltd				8,800
34	KYENJOJO	17,015	133	14	0	14	9	110	0	George and Company	7	39	12	9,956
35	KYOTERA	8,060	130	12		20	0	104	6	T/C	0	0	0	4,568
36	LAROPI	18,816	26	0	0	3	0	23	0	Able Holdings Ltd	6	3		4,232
37	LUKAYA	14,354	306	10	8	17	0	275	6	Bright Technical Servicses	1	4	7	11,208
38	LUWERO	25,301	720	46	32	40	0	640	5	Kalebu Ltd	50		3	21,233
39	LWAKHAKHA	6,240	262	67	0	10	1	184	0	Jowa Engineering Services				4,113
40	LYANTONDE	8,849	351	11	25	20	0	295	11	WSS Services Ltd				7,143
41	MASINDI	29,217	1,392	334	237	50	70	1011	24	Irumu & Associates	19	27	12	25,961
42	MBIRIZI	7,997	209	8	0	14	0	187	8	WSS Services Ltd				5,521
43	MOROTO	8,548	171	76	67	7	4	12	5	M/C	24	0		4,012
44	MOYO	15,325	255	53	30	5	0	200	20	Able Holdings Ltd	17	18		12,800
45	MUBENDE	17,835	253	87	7	15	0	231	0	Irumu & Associates	8	7	3	9,939
46	NAKASONGOLA	6,938	201	19	0	27	8	160	5	Kalebu Ltd	12		19	5,440
47	NGORA	20,815	117	16	2	66	0	46	3	Jowa Engineering Services	21	20	22	15,100
48	NKONKONJERU	11,999	167	40	8	14	2	143	0	Kalebu Ltd	5	15		8,152
49	NTUNGAMO	14,100	322	59	10	17	10	273	12	WSS Services Ltd	2	35	4	10,980
50	PAKELE	7,584	31	0	2	2	0	22	5	Able Holdings Ltd	46	4	9	5,784
51	PALLISA	26,111	492	4		40	0	444	8	Bisons Consult	10	1		21,088
52	RAKAI	6,454	201	44	16	17	3	152	13	WSS Services Ltd	0	0	0	4,962
53	RUKUNGIRI	18,018	425	24	38	22	0	358	7	WSS Services Ltd	9	39	2	14,564
54	WAKISO	10,341	162	0	0	5	1	149	7	Bika Ltd	2	11	6	9,062
55	WOBULENZI	20,841	330	32	22	15	0	261	32	George and Company	18	3	2	19,208
	SUB-TOTAL	869,720	15,741	2,122	1,038	1,069	285	12,384	427		661	388	260	563,871

Annex 8. District Coverage (according to District Situation Analysis Reports

		Data update	Prot. springs.		Deep BH.		Shal. well		Dug well		Rain Water Tanks		Valley Tank		GFS Taps		IDP	RGCs	RGC pop	Pop served by	Proj RURAL	Proj RURAL Pop	%	% functionality
			Fn	II Fn	Fn	II Fn	Fn	II Fn	Fn	II Fn	Fn	II Fn	Fn	II Fn	Fn	II Fn								
1	KALANGALA	Jun-05	9	5	-	2	35	15	-	-	27	-	-	-	11	-	-	-	-	20,050	41,208	40,375	49	67
2	KIBOGA	Jun-05	98	24	131	18	157	30	26	-	-	-	-	-	38	-	-	-	-	138,700	249,100	246,300	56	81
3	LUWERO	Jun-05	7	-	562	81	7	-	647	-	-	-	-	-	-	-	-	1	4,330	366,795	496,687	450,381	74	94
4	MASAKA	Jun-05	413	140	288	126	477	219	-	-	39	-	2	-	-	-	-	-	-	421,696	779,351	708,570	54	71
5	MPIGI	Jun-05	515	17	75	13	232	43	-	-	71	-	-	-	-	-	-	1	5,172	210,993	425,192	420,648	50	92
6	MUBENDE	Jun-05	232	-	445	-	629	-	-	-	-	-	-	-	8	-	-	1	4,332	353,989	742,993	709,507	48	81
7	MUKONO	Jun-05	1,472	-	367	-	343	-	-	-	-	-	-	-	24	-	-	-	-	492,623	846,772	716,938	58	79
8	NAKASONGOLA	Jun-05	-	2	101	42	54	-	7	10	-	-	-	-	-	-	-	1	3,696	69,842	129,471	124,979	54	75
9	RAKAI	Jun-05	108	25	155	144	267	139	-	-	200	-	-	-	-	-	-	-	-	236,270	486,601	472,900	49	63
10	SSEMBABULE	Jun-05	-	-	83	59	-	-	67	8	-	-	12	1	-	-	-	-	-	65,100	191,032	190,800	34	69
11	KAYUNGA	Jun-05	48	8	280	37	123	11	-	-	-	-	-	-	-	-	-	-	-	146,500	307,398	292,369	48	89
12	WAKISO	Jun-05	485	75	229	46	593	130	-	-	22	5	-	-	4	1	-	-	-	403,988	1,034,799	998,002	39	83
13	BUGIRI	Jun-05	43	-	230	73	90	-	-	-	18	-	-	-	-	-	-	-	-	126,500	464,153	465,812	27	82
14	BUSIA	Jun-05	185	-	274	35	2	-	17	-	39	-	-	-	-	-	-	-	-	135,400	239,683	205,518	56	86
15	IGANGA	Jun-05	92	1	927	65	214	-	320	69	52	-	-	-	-	-	-	-	-	490,636	757,675	782,375	65	92
16	JINJA	Jun-05	291	10	191	4	260	4	-	-	-	-	-	-	-	-	-	-	-	197,900	436,431	340,792	45	98
17	KAMULI	Jun-05	2	-	957	35	191	16	-	-	-	-	-	-	-	-	-	-	-	371,308	753,581	766,109	49	87
18	KAPCHORWA	Jun-05	484	-	13	14	-	-	-	-	-	-	-	-	149	7	-	-	-	123,906	208,410	207,432	59	97
19	KATAKWI	Jun-05	41	11	415	79	102	51	-	-	-	-	-	-	-	-	46	-	-	201,596	342,522	355,952	59	80
20	KUMI	Jun-05	350	-	301	77	137	-	226	57	122	-	-	-	33	-	-	-	-	302,700	417,262	425,575	73	88
21	MBALE	Jun-05	718	133	299	42	18	2	-	-	41	-	-	-	272	40	-	-	-	323,724	761,263	708,591	43	79
22	PALLISA	Jun-05	129	38	455	83	86	21	-	-	-	-	-	-	-	-	-	-	-	235,700	552,225	544,006	43	80
23	SOROTI	Jun-05	101	14	518	63	235	18	-	-	-	-	-	-	-	-	14	1	4,579	260,328	389,939	355,926	67	90
24	TORORO	Jun-05	219	-	680	80	-	-	41	6	-	-	-	-	-	-	-	-	-	285,900	589,734	561,589	48	92
25	KABERAMAIDO	Jun-05	60	11	247	41	76	17	-	-	33	-	-	-	-	-	3	-	-	120,120	130,596	135,193	92	85
26	MAYUGE	Jun-05	80	2	226	24	77	8	-	-	-	-	-	-	-	-	-	-	-	116,900	346,890	349,244	34	92
27	SIRONKO	Jun-05	525	-	90	-	47	-	-	-	1	-	-	-	290	-	-	-	-	188,086	305,994	302,249	61	80
28	ADJUMANI	Jun-05	16	-	198	44	41	10	-	-	5	-	-	-	1	5	-	1	2,992	106,992	224,340	214,838	48	83
29	APAC	Jun-05	292	51	471	137	211	-	11	-	144	-	-	-	-	-	24	-	-	324,800	717,113	730,281	45	81
30	ARUA	Jun-05	1,280	378	714	158	144	6	-	-	216	-	-	-	5	52	-	1	3,669	646,750	915,341	867,842	71	80
31	GULU	Jun-05	325	-	402	-	152	-	22	-	-	-	-	-	-	-	34	-	-	237,800	491,516	383,191	48	79
32	KITGUM	Jun-04	-	-	430	66	92	-	-	-	-	-	-	-	-	-	19	-	-	176,400	307,430	272,253	57	77
33	KOTIDO	Jun-05	2	-	326	76	105	15	7	-	-	-	11	-	-	8	-	-	-	161,113	699,075	748,345	23	83
34	LIRA	Mar-05	632	120	334	115	297	126	-	-	-	-	64	41	18	-	67	-	-	413,927	805,464	735,237	51	78
35	MOROTO	Jun-05	-	3	273	35	-	19	-	-	59	-	10	-	24	4	-	1	5,048	104,931	185,240	185,676	57	83
36	MOYO	Jun-05	32	-	254	10	-	-	38	-	24	-	-	-	66	-	-	-	-	122,225	228,437	231,205	54	84
37	NEBBI	Jun-05	479	100	353	72	84	19	-	-	-	-	-	-	61	10	-	1	5,362	330,778	454,077	396,095	73	83
38	NAKAPIRIPIRIT	Jun-05	4	4	166	59	16	13	-	-	-	-	-	-	-	-	-	-	-	79,740	170,014	178,054	47	71
39	PADER	Jun-05	-	-	183	34	17	-	45	6	-	-	-	-	-	-	13	-	-	82,721	315,179	317,047	26	86
40	YUMBE	Jun-05	23	4	145	50	35	3	1	-	-	-	-	-	-	-	-	-	-	83,600	289,754	293,948	29	78
41	BUNDUBUGYO	Jun-05	198	55	21	11	-	-	70	51	64	-	-	-	260	-	-	-	-	132,065	232,478	228,211	57	71
42	BUSHENYI	Jun-05	1,747	449	69	89	-	-	111	17	164	2	-	-	616	-	-	3	12,530	573,639	747,780	722,153	77	78
43	HOIMA	Jun-05	463	-	314	14	145	-	146	6	13	-	-	-	21	7	-	-	-	291,987	379,506	356,211	77	87
44	KABALE	Jun-05	906	215	46	45	-	-	-	-	-	-	-	-	931	264	-	4	7,100	373,328	480,486	438,441	78	79
45	KABAROLE	Jun-05	266	107	61	25	341	42	-	-	46	2	-	-	34	-	-	-	-	220,400	369,043	332,429	60	79
46	KASESE	Jun-05	999	67	148	62	-	-	-	-	735	299	-	-	1,742	-	-	-	-	423,192	568,557	524,481	74	82
47	KIBAALE	Jun-05	613	-	356	-	-	-	571	-	176	-	-	-	-	-	-	-	-	363,891	453,202	472,103	80	88
48	KISORO	Jun-05	302	21	4	7	-	-	-	-	94	42	-	-	91	35	-	2	4,100	87,600	224,792	216,879	39	92
49	MASINDI	Jun-05	274	60	350	115	150	20	140	1	-	-	-	-	11	-	1	-	-	299,496	512,172	508,820	58	82
50	MBARARA	Jun-05	565	47	368	162	182	8	-	-	939	7	-	-	837	18	-	-	-	443,173	1,143,557	1,076,457	39	84
51	NTUGAMO	Jun-05	976	-	127	82	-	-	238	-	96	-	-	-	283	-	-	2	6,280	333,308	400,662	394,695	83	82
52	RUKUNGIRI	Jun-05	942	183	47	36	52	2	-	-	45	-	-	-	140	10	-	3	12,700	286,071	322,438	312,545	89	82
53	KAMWENGE	Jun-05	244	172	12	52	116	26	-	-	86	-	-	-	81	-	-	1	3,941	164,050	312,419	307,517	53	60
54	KANUNGU	Jun-05	693	297	39	62	27	3	-	-	101	18	-	-	392	27	-	3	19,100	198,170	212,655	204,451	93	68
55	KYENJOJO	Jun-05	252	40	143	33	222	24	-	-	22	8	-	-	49	5	-	-	-	206,700	405,673	403,871	51	86
	Rural Population		19,232	2,889	14,893	2,934	6,881	1,060	2,751	231	3,694	383	99	42	6,492	493	221	27	104,931	13,676,096	24,995,364	23,931,409	55.1	82
	Total population																				24,211,808	27,215,803		

District Rural Coverage (based on DWD-MIS)

Annex 9

	2004						2005					
Districts	**Springs**	**B/holes**	**Wells**	**GFS Sche**	**GFS Taps**	**2004 Coverage**	**Springs**	**B/holes**	**Wells**	**GFS Sche**	**GFS Taps**	**2005 Cover**
Adjumani	23	188	78	1	19	87,250	23	194	78	1	19	89,050
Apac	350	625	227	0	0	325,600	356	651	242	0	0	339,100
Arua	1125	695	201	3	49	501,150	1135	718	212	4	71	516,650
Bugiri	40	331	80	0	0	131,300	45	331	87	0	0	134,400
Bundibugyo	336	40	39	7	193	119,850	351	40	45	7	197	125,250
Bushenyi	1451	421	141	18	587	546,850	1531	421	181	19	736	597,200
Busia	166	301	4	0	0	124,700	166	312	12	0	0	130,400
Gulu	623	369	127	0	0	273,400	623	384	140	0	0	281,800
Hoima	519	412	320	5	18	326,100	568	412	355	5	18	346,400
Iganga	127	868	345	0	0	389,300	127	918	355	0	0	407,300
Jinja	295	247	193	0	0	191,000	302	254	205	0	0	198,100
Kabale	1352	112	26	22	385	369,550	1365	112	26	26	513	391,350
Kabarole	791	126	446	10	197	359,350	811	130	496	10	197	379,550
Kaberamaido	46	184	39	0	0	76,100	46	196	44	0	0	81,200
Kalangala	27	2	41	2	16	20,700	27	2	41	2	16	20,700
Kampala	0		0	0	0	0	0	0	0	0	0	0
Kamuli	6	1026	194	0	0	367,200	6	1062	222	0	0	386,400
Kamwenge	877	59	202	6	123	272,150	898	59	224	8	123	282,950
Kanungu	879	113	34	8	141	241,050	882	113	35	9	170	246,300
Kapchorwa	356	34	0	7	153	104,350	356	34	12	9	178	111,700
Kasese	864	208	0	14	1364	439,800	886	215	0	14	1364	446,300
Katakwi	44	338	68	0	0	130,600	50	360	74	0	0	140,200
Kayunga	71	324	119	0	0	147,100	71	331	136	0	0	154,300
Kibaale	517	219	230	1	0	238,100	526	219	246	1	0	244,700
Kiboga	204	149	158	3	60	141,900	204	149	184	3	60	149,700
Kisoro	413	15	0	7	104	102,700	422	15	0	8	104	104,500
Kitgum	0	553	81	0	0	190,200	0	553	81	0	0	190,200
Kotido	31	498	80	1	0	179,600	32	509	80	1	0	183,100
Kumi	261	298	236	0	0	212,400	272	311	246	0	0	221,500
Kyenjonjo	609	152	235	6	43	244,350	626	158	269	6	53	261,250
Lira	764	470	305	0	54	393,400	779	488	335	0	54	410,800
Luwero	138	772	496	0	0	408,000	138	772	535	0	0	419,700
Masaka	513	537	483	0	0	408,600	530	537	557	0	0	434,200
Masindi	412	545	198	1	11	306,950	431	553	264	1	11	332,950
Mayuge	51	284	48	2	13	111,750	56	292	75	2	13	123,250
Mbale	1109	325	35	12	304	375,400	1216	341	40	14	353	410,450
Mbarara	1064	815	110	23	456	558,700	1067	830	112	25	456	564,400
Moroto	21	454	19	5	15	148,350	21	476	19	5	15	154,950
Moyo	71	340	66	3	36	141,400	71	340	66	3	36	141,400
Mpigi	501	202	307	0	0	252,900	540	218	365	0	0	282,900
Mubende	287	278	462	1	28	283,600	291	287	546	1	28	312,300
Mukono	1281	86	524	3	40	445,200	1352	86	584	3	40	477,400
Nakapiripirit	8	276	13	0	0	88,300	8	277	13	0	0	88,600
Nakasongola	0	212	76	0	0	86,400	0	221	76	0	0	89,100
Nebbi	541	679	130	5	53	358,850	559	693	134	5	55	368,150
Ntungamo	749	248	115	11	123	277,150	779	248	155	12	129	296,050
Pader	0	206	32	0	0	71,400	0	220	44	0	0	79,200
Pallisa	167	533	90	0	0	220,300	178	558	96	0	0	231,800
Rakai	268	359	243	0	0	234,200	270	359	267	0	0	241,800
Rukungiri	1380	149	89	19	526	426,300	1425	149	103	20	530	440,100
Sembabule	0	117	73	0	0	57,000	0	117	85	0	0	60,600
Sironko	329	81	73	31	608	203,200	369	84	73	32	642	217,200
Soroti	113	591	213	0	0	263,800	119	628	225	0	0	279,700
Tororo	204	722	46	0	0	271,200	212	760	46	0	0	284,200
Wakiso	498	256	543	1	6	340,200	525	265	601	1	6	365,700
Yumbe	29	474	33	0	0	157,900	29	477	33	0	0	158,800
Totals	**22901**	**18918**	**8766**	**238**	**5725**	**13,744,150**	**23672**	**19439**	**9777**	**257**	**6187**	**14,427,250**
Total Rural Population						22,748,521						23,539,393
Coverage						**60.4%**						**61.3%**