

Study of factors influencing equitable distribution of water supply and sanitation services in Uganda

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*Paper Conducted by
Narathius
Asingwire and
Dennis Muhangi of
Makerere University
And Presented by
John Odolon
Country
Representative,
WaterAid Uganda.*

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The existence of inequitable distribution of water and sanitation services is not in doubt. The problem has already received recognition and equity has been adopted as a key theme that should be monitored and measured every year as part of the sector's performance review. The study revealed that existing policy prescriptions, strategies and guidelines are largely inclusive of equity provisions. The problem is more of policy translations and application at the district and lower levels. The study concluded that, whereas other factors such as natural occurrence of water, hydro-geological factors and availability of funds combine to dictate the choice of technology for water service delivery, political influence seems to be decisive in actual allocation of water points to be constructed especially where there is no accurate information and uncertainty about the technical criteria to use. Inequitable distributions of water and sanitation services largely begin with basics such as access to information and the initiative of local leaders.

Introduction

WaterAid Uganda in consultation with the Sector Performance Thematic Team¹ (SPTT) carried out this study between May and August 2005 to ascertain factors influencing equitable distribution of water and sanitation services in Uganda. The purpose of the study was to generate information that will contribute to equitable water and sanitation delivery in both rural and urban areas and to identify feasible means by which service provision can be improved.

The SPTT developed a Performance Measurement Framework, the basis for annual performance assessment which considers the agreed "Golden Indicators". The indicators require focused and in-depth analysis in order to generate information useful for coherent policy decision-making and for improved performance of the water and sanitation sector.

This study is a step in addressing the recommendation of the Sector Performance Report (2004) that highlighted the need to conduct more research and consultation to assess further the factors that contribute to high and low equity and the need to develop district guidelines for the equitable distribution of water sources.

The equity indicator attempts to measure the Mean Parish Deviation (MPD) from the district average in terms of the number of people per water point (MWLE, 2004). The Sector Performance Report (MWLE, 2004) reveals that there are high levels of inequity of water access in Uganda as measured by differences in people per water point by rural district, small towns and large towns which has existed over a long time.

Ugandan water and sanitation sector in attempting to achieve equity promotes the principle '*some for all, rather than all for some*'. Equity is of paramount importance as it is closely related to poverty reduction, for it is often the poor that are inequitably served with safe water and sanitation services.

This paper is a summary of the whole study. It provided a brief synopsis of the methodology used to generate the data, the main findings and recommendations. The findings were

¹ The SPTT has representatives from MWLE, DWD, NWSC, Civil Society Representatives and Consultant/Private sector.

presented to the SPTT in August 2005 in feedback / consultative workshop and have been used in the preparation of this year's Sector Performance Report by MWLE.

Methodology

This study adopted qualitative methods. A purposive sampling technique was employed in selecting the study districts, areas and study participants.

A total of eight (8) districts in Uganda were purposively sampled in consultation with the SPTT for inclusion into this study. The eight districts included: Apac, Nebbi, Sironko, Mayuge, Hoima, Mbarara, Wakiso and Luwero.

Districts were sampled on the basis of the following criteria: Regional representation i.e., a district will at least represent each region: Central, Western, Eastern and Northern; a mixture of districts on the basis of approach regime i.e., demand-driven vis-à-vis supply-driven under which safe and clean water was provided; rural and urban characteristics; Socio-economic and demographic statuses and characteristics; Hydro-geological factors, which potentially influence the type of water technology adopted; Climatic factors; and other factors such as safe water coverage, dominant technology et cetera.

Data were collected through documentary reviews and interviews at national, district and sub-county levels, as well as focus group discussions at community level. Within each district, one sub-county was purposively selected and two parishes were also selected from each sub-county purposively. At the parish level, the study team visited two (2) water user communities/local council 1s/villages.

Study Participants

The study covered participants at national, district and community levels. All study participants were selected on basis of their knowledge and involvement in the provision of safe and clean water as well as sanitation services. At the national level, participants were drawn from the Directorate of Water Development (DWD), NGOs and other bodies such as African Ministers' Council for Water (AMCW) and DANIDA. District participants included

District Water Officers and their Assistants, Staff from the District Directorate of Health Services and Social/Community Services, the political leadership and districts technocrats. Sub-county participants included sub-county chiefs, technical staff and Local Council III (LC III) leaders. At the Community level groups of water users, water user committees where they existed, local leaders and ordinary community members participated.

Study Findings

The study revealed that there is wide recognition at all levels of inequitable distribution of water and sanitation services in Uganda despite increased coverage. Increasing national safe water and sanitation coverage levels (estimated at 58.4% and 55.5% respectively) are masking increasing inequities in access within districts, sub-counties and parishes. Water Point Density (WPD) for majority of districts in Uganda fall less the national target of 3.3 per 100 people. The WPD at sub-county level revealed wide variations in coverage across sub-counties, while calculations at parish level revealed even greater disparities.

Safe Water and Sanitation Coverage

National

The national rural safe water coverage is estimated to fall between 55-58% (MWLE, December 2004), while sanitation is 55.5% (MoH, 2004). There is, however, a wide variation in coverage throughout the country ranging from 20% (Pader), in the least served district, to 95% (Rukungiri) in the best served (MWLE/DWD, 2005). In the urban sector, coverage levels stand at 65% (June 2004). However, there are also variations in coverage across towns, with the highest being Mbarara (79%), and the lowest being Soroti estimated at 34% (NWSC, 2004).

There is wide variation of latrine coverage from district to district, with as low as 2% and 2.8% in Kotido and in Nakapiripirit Districts respectively and over 90% in Rukungiri district in the southwest part of the country (MoH, 2004). Coverage of public latrines is also very low (19%) with all located at institutions. most of these latrines located in primary schools, markets and health units.

Districts

There is concern that whereas the national safe water coverage has been showing an increasing trend, water services are inequitably distributed within districts. According to data obtained from DWD, Kanungu District has the most equitable distribution of water points with an average sub-county deviation of 44 (i.e., the average sub-county is within 44 people per water point of the district average). On the other hand, the district with the most inequitable distribution of water points is Kotido with a sub-county deviation of 1,015—Kotido where some sub-counties have many water points and other with very few.

Table 1: Variations in Safe Water Coverage within the Study Sample Districts

District	MPD from District Average	Aver dist safe water Coverage	Sub-county with highest coverage	Sub-county with lowest coverage	Av dist san coverage
Hoi ma	399	68	Buhani ka (106.4)	Kyangw ali (36.5)	67
Apac	352	51	Ayer (84)	Allito (28)	
Neb bi	412	65	Kucwin y (99)	Packwa ch TC (33)	
May uge	634	26	Baitam bogwe (38)	Malong o (16)	
Siro nko	1,094	54	Buhugu (85)	Zesui (30)	
Waki so	595	68			66
Luw ero	273	59	Luwero TC (102)	Kamira (30)	62
Mba rara	809	50	Bukiro (90.2)	Kashar e (19.5)	

Sanitation coverage within districts like safe water coverage varies widely. For instance, latrine coverage in the sub-counties of Luwero district is over 80% in the 3 Town Councils (Luwero, Wobulenzi and Bombo), but less than 50% in the sub-counties of Kamira, Kikyusa, and Wakyato (Data of July 2004 from Luwero District). In Apac, it was reported that areas near the lakeshores have low latrine coverage compared to other areas.

National Policies, Strategies Ad Guidelines

Uganda's water and sanitation sector is based on an institutional and legal framework that has been continuously revised and updated since the early 1990s. Reforms have been implemented in the various sub-sectors, aimed at improving the performance of the sector. There are different policies, strategies and guidelines developed for the different sub-sectors, which potentially have implications on equitable distribution of water and sanitation services. Overall, the National Water Policy (1999) provides an elaborate set of strategies and approaches to be used in the sector.

In the rural water supply and sanitation sub-sector, the goal and targets are: Sustainable safe water supply and sanitation facilities, based on management responsibility and ownership by the users, within easy reach of 77% or 95% of the rural population by the year 2015, with an 80%-90% effective use and functionality of facilities. The objective is to reduce the walking distance to improved water sources in rural areas to 1.5 km so as to enable people devote the rest of the saved time to increasing their incomes as well as improving the quality of their lives.

Sanitation in rural households, it is a responsibility of individual households, while the government's role is to provide hygiene education and sanitation promotion messages. Local governments have responsibility for construction of latrines in public places and institutions such as primary schools, and markets.

The objective of the urban water supply is to reduce the walking distance in urban areas to 0.2 km for common/public point sources thereby allowing the people a chance to devote the time saved into increasing their incomes as well as improving the quality of their lives. The goal and targets are: to expand the service coverage to give 100%, to achieve sustainability of service delivery, to ensure that a basic adequate level of service is affordable via low-cost service delivery and the implementation of a subsidy and tariff system, which is equitable and beneficial to the poor, and to ensure that water, as a social and economic good, is managed in the best way

Demand responsive approach and equity

One of the key policy requirements in the provision of safe water and sanitation services is the demand-driven approach (DRA). However adherence to the principles of DRA means that communities that fail to express effective demand are left un-served. These are usually the low income groups. The approach requires that communities are mobilized en-masse hence political influence tends to interfere with the allocation process, some mobilization activities have focused heavily on construction and less on operation and maintenance of water points hence obscure coverage figures and obscure the actual situation and complicate attempts ensuring equitable distribution of water supply services, the success of the DRA requires that communities receive information and education, DRA is not practical with a private sector approach which is governed by the contract terms and is also sometimes hampered by late release of funds and the pressure to spend funds in time.

Interpretation and Understanding of Sector Strategies and Policies

The district and sub-county technical staff are aware of the policies and guidelines from the center. On the other hand, the politicians are averagely aware of the broad guidelines from the line ministries and not specifically how they should be applied. Equity is affected by limited or lack of knowledge of procedures that have to be followed in acquiring new water sources from the districts or sub-counties by the communities.

Applicability of Policies and Guidelines

Although there is wide knowledge of the guidelines especially among the technical staff of local governments, the district and sub county officials only partially apply these guidelines, or ignore them altogether. The interplay of political influence, lack of full knowledge by politicians, and inadequacy of resources undermines their application. The strategies and guidelines for the urban sub-sector emphasize financial viability, sustainability and water as an economic good. Majority of the low-income earners in urban areas draw actually pay more per unit of water than consumers with house connections.

Strengths and Weaknesses of National Policies and Guidelines

The guidelines spell out the roles of different stakeholders, thus enhancing participation and avoiding role conflicts, the guidelines promote coordination and collaboration in the sector and promote a bottom-up participatory approach which enhances participation, with high chances of meeting people's needs including equitable distribution. On the other hand the weaknesses include: allowing decision-making by politicians which provides room for ignoring or influencing the technical considerations, the politicians are not fully aware of the guidelines, some communities are not aware of the guidelines, and do not have mechanisms for monitoring or demanding their enforcement and Parish Development Committees are not functional in all communities.

Resource Allocation

Existing resource allocation mechanisms at the center, though based on a worked formulae that considers population and coverage, have continued to lead to substantial amounts of grants disbursed to districts whose coverage levels are well above the national average, even above the 77% target for 2015. Planning and budgeting within ceiling limits also means that districts receive inadequate resources to meet their needs in a given year, leaving some deserving areas unserved. There are recent efforts to improve the resource allocation formulae and to build in walking distance into the coverage calculations are steps in the desired direction. The districts use various criteria with varying degrees of inclination to one or the other, with no weights assigned to each factor and no clear ranking schemes, which

impacts on equitable distribution of the services. In an attempt to ensure fairness across all sub-counties as a result of political pressures, some districts promote more inequity in the distribution of water services.

In the big urban areas managed by NWSC, 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, this is more dependent on the availability of funds to make extensions. The ability-to-pay factor is key in determining equity of access to water services among individual households, through new connections, which compromises equitable distribution and accessibility to safe water by the urban poor.

With respect to resource allocations for sanitation, a higher proportion of the on-budget funds (between 37% to 63%) go to latrine construction in schools, 13% to 21% go to piped urban sewerage, while only 20% to 27% go to hygiene education in communities. Household sanitation is basically a matter of each individual household and hence often relegated to the periphery by decision-makers. There is lack of prioritization of sanitation both in terms of financing by central government as well as implementation and enforcement by district and lower level implementers.

DONOR AND NGO FUNDED PROJECTS

Donor funds meant for projects as well as funds brought in by NGOs are channeled to specific districts or localities without necessarily following an equity criteria, although overall, it can be argued that donor projects and NGOs tend to target districts or areas that are deemed to be underserved or unserved with watsan facilities. There are no formal mechanisms at national level to direct the activities of projects and NGOs to the most deserving districts. Inequities tend to result in cases where some districts that were previously under-served have continued to receive project and NGO support for a very long time.

Water Coverage and Monitoring Data

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 efforts at DWD to improve on this method of calculating coverage by including the walking distance to the water source are anticipated to improve the equity sensitivity of this procedure. There are also problems related to consistency in data between the districts and the center. At national level, calculations of coverage stop at district level, covering up inequities at lower levels. In turn, district calculations of coverage for sub-counties obscures the inequities existing at parish and community level. Validity of data is also affected by non-functionality, due to lack of a proper mechanism to report non-functional water sources. Validity of data on sanitation is more challenging due to complexity of sanitation.

Other Factors Affecting Equity:

There are other factors that potentially affect the equitable distribution of water and sanitation services. These include, population distribution and mobility, 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. Some of the above factors are already discussed, however it is important to consider natural hydro-geological factors, cost of water technology and political influence (real and perceived), natural resource endowments,

Natural water resource endowment determines the viability of different water technologies and consequently the equitable or inequitable distribution of water services. Districts such as Sembabule and Mubende, Nebi, Apach are poorly endowed with natural water, to the extent that even deep boreholes cannot succeed, and the water table is very low to apply the common and less costly water technologies while In Luwero, the sub-counties of Kamira and Ngoma, and in Hoima, the sub-county of Kyangwali do not have natural springs

For instance, districts with spring and gravity flow schemes (GFS) potential have higher coverage levels (e.g., Rukungiri, Bushenyi, Kabarole and Kasese) and by implication a more equitable distribution of water points within the district.

In the case of sanitation, soil type and geographical terrain were found to be an influencing factor. In Nebbi district, it was found that areas with loose soils such as parts of Jonam County had a low latrine coverage compared to for instance areas of Okoro and Padyere where soils are stable.

The differences in the cost of different water technologies are another important factor. The capital cost of 1 deep borehole is estimated at US \$ 9,133, more than twice that of a shallow well (US \$ 3,990) and more than 4 times that of a protected spring (US \$ 2,080) (RWSS SIP 2000-2015). The cost factor also reflects in the operation and maintenance (O&M) requirements costs – estimated at US \$ 100 per annum for deep boreholes, US \$ 50 for shallow wells and US \$ 20 for protected springs. Thus where there are more boreholes, O&M becomes expensive and largely untenable. This high cost leads to failure to maintain a facility.

In urban areas, the enormous cost of constructing new piped water schemes or even extending existing ones has been a constraint to achieving 100% coverage. Examples from Wakiso and Luwero Town Councils have already been referred to where the town authorities and the private operators have failed to extend piped water to parts of the town due to lack of funds.

The importance of political influence (whether real or perceived) in achieving fairness in distribution of water and sanitation services is underlined by the fact that politicians at local levels take the last decision in resource allocation. Politicians are people's representatives who come to the resource allocation forum with their own (or their people's) interests. The ideal mission of a politician is to help his or her people to improve their livelihood, and thereby increase his/her own political ground. Other politicians are good at advocacy and lobbying, at different levels, using community and council meetings to demand for allocation of services to their areas to be underserved or unserved with watsan facilities. There are no formal mechanisms at national level to direct the activities of projects and NGOs to the most deserving districts. Inequities tend to result in cases where some districts that were previously under-served have continued to receive project and NGO support for a very long time.

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However, the demerits of political influence take centre stage when politicians use their power or influence to distort the laid down procedures, and thereby channel resources or services to communities that may not be very much deserving compared to others in other cases, politicians have caused decision-making structures to abandon.

Recommendations

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 hardware.

Policy, planning and resource allocation at national level

- Develop, disseminate and implement equity guidelines at national level and oversee that these are adhered to by local governments
- More resources should be earmarked to support construction of water sources in underserved areas. This might require channelling more funds to alternative technologies that are feasible in such areas.
- The centre should direct and devote special attention and financial support to un-served areas with limited water technology options (water scarcity/water stressed) instead of leaving it to districts till certain time when the coverage levels of such places have also picked up.

Planning and resource allocation at district level

- At district level, calculation of coverage figures should be at parish level, rather than stopping at sub-county level. This could be improved further 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 those parishes with the highest number of people per water point.
- Strengthen the practice of participatory planning and adherence to it. Allow time for the demand-driven approach to be applied.
- Institute mechanisms/procedures that increase the transparency of decision-making at district level, regarding water sources allocation.

Data collection and monitoring systems

- Tools should be developed that can assist to collect, analyze and present data on coverage and equity. This may include water resources maps, population density maps, table formats and other means of demonstrating the magnitude of inequity. Information should be used as an advocacy tool.

- Improve data collection and information flow about non-functional water sources so that accurate calculation of coverage can be achieved
- District data on number of people per water point by parish should regularly (annually) be published or made available to all councillors and all sub-counties as a means of promoting transparency. When this data is used to make decisions on water source allocation, then the leaders of the disadvantaged areas can question or understand the basis of the decisions. Decision-makers should in this respect be regularly furnished with equity data to enable them informed and poverty sensitive decisions.
- Finalize work to revise procedures for calculation of safe water coverage levels, including the walking distance variable

Balance between hardware and software activities

- Increase software budget for both water and sanitation
- Promote closer integration of sanitation activities of MoH with those of DWD/DWO
- District software activities should go beyond communities selected for water source construction (or at least pay similar attention) to even communities that are not yet served with water sources. Software activities for unserved communities should include information about available support at district and sub-county, procedures and requirements for getting a water source, requirements and conditions for different water technologies, and hygiene and sanitation.
- In order to increase the reach of community education and promotion programmes for sanitation, NGOs should be more involved in district software programmes. Given their comparative advantage, NGOs should be given a key role in this area both through contracts with districts, as well as government grants to NGOs or other forms of partnerships.
- Increase resources for supporting O&M for water points, including back-up support to communities to undertake repairs beyond their capacity

NGO Involvement and Advocacy

- Equity should form an important element on the agenda of the NGOs in the sector for advocacy especially at district level.
- 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.

References

Centre for Basic Research (2005): The impact of Political corruption on resource Allocation and service delivery in local Governments in Uganda.

Ministry of Health, Environmental Health Division (2002): Report of the Annual Sanitation Review Meeting for Environmental Health Officers, 9-13 Dec 2002

Ministry of Health/National Sanitation Forum (1997): The Kampala Declaration on Sanitation, 1997.

Ministry of Health/Water and Sanitation Program (2004): Strengthening budget mechanisms for sanitation in Uganda – Executive Summary. Sector Finance Working Papers, July 2004.

Ministry of Water, Lands and Environment (2003): Water and Sanitation in Uganda: Measuring Performance for Improved Service Delivery. September 2003.

Ministry of Water, Lands and Environment (2004a): Uganda Water and Sanitation Sector: Performance Measurement Framework, March, 2004.

Ministry of Water, Lands and Environment (2004): Water and Sanitation Sector Performance Report, September 2004.

Ministry of Water, Lands and Environment/Directorate of Water Development (2000): Rural Water and Sanitation Strategic Investment Plan 2000-2015.

National Water and Sewerage Corporation (2003): Corporate Plan, July 01, 2003 - June 30, 2006.

National Water and Sewerage Corporation (2004): Annual Report 2003/2004.

WaterAid (): Getting to boiling point: Turning up the heat on water and sanitation. WaterAid report

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