

MAXIMIZING THE BENEFITS FROM WATER AND ENVIRONMENTAL SANITATION

**Self-help Initiatives to Improve Water Supplies
in Eastern and Central Uganda**

Aaron Kabirizi, Richard C Carter, Joyce Magala Mpalanyi and Jamil Ssebalu, Uganda

This paper sets out the background, approach, findings and conclusions of the first stage of a small study into rural water self-supply (locally initiated improvements to domestic water services) in Uganda. The work reported here consisted of a reconnaissance field trip to 9 districts in eastern and central Uganda. A total of 20 water sources were visited, and interviews held on site; about 20 key informant interviews were also held with Government, NGOs and private sector operators. Stages 2 and 3 of the work are in progress at the time of writing, and will be reported at the conference. The findings to date show that self-supply is alive and well in the Ugandan rural water sector, and that there may be possibilities for greater synergy between Government/NGO interventions in community water supply and self-supply initiatives. We propose a new conceptual framework for assessing existing water services and targeting external support.

Background

The rural water sector context in Uganda is one in which decentralised authorities (district water offices) contract out construction of new water sources for identified communities which are expected to contribute financially and in kind, and take responsibility for operation and main-tenance. With the exception of contracting out, most water sector NGOs operate in a similar fashion. Sustainability of O&M has been a challenge, and this is being addressed at present through a published national framework (Anon, 2004a) and capacity-building of districts. Accepted “improved” safe water technologies include protected springs, gravity flow schemes, boreholes and shallow wells with handpumps, and communal and institutional rainwater harvesting.

The notion of self-supply is new to Uganda, and until this study it was uninvestigated and not defined. In essence self-supply refers to initiatives undertaken by individuals or households, sometimes extending to wider communities, to improve water supply services, without waiting for Government or NGO interventions (Sutton, 2002; Sutton and Nkoloma, 2003; Sutton, 2004).

Literature

The relevant literature for this study points to steady progress and continuing challenges in raising rural water supply coverage using “conventional” community based approaches in a decentralised and ‘privatised’ environment (Anon, 2004b). The increasing focus on technologies such as rainwater harvesting (Anon, 2005) and shallow groundwater, which especially lend themselves to self-supply initiatives

and possible targeted external support, makes this study especially timely in Uganda.

Approach

The study has been undertaken in three parts: (i) a reconnaissance field trip to carry out field visits and key informant interviews in 9 districts; (ii) more detailed field work in 5 districts to extend and deepen the database; and (iii) a MSc thesis carrying out further in-depth field work.

The focus of the present work has been on shallow groundwater use. This is because significant work has already been carried out on rainwater harvesting, the other major candidate technology for self-supply. In the final report of this study, the documentation on rainwater harvesting and our own field work on shallow groundwater source development will be synthesised.

Findings

The notion of self-supply is difficult for many organisations and individuals who are used to implementing “conventional” approaches to community water supply. There is a strong tendency to divide water sources into those which are “traditional”, “unimproved”, “unsafe” and therefore unacceptable, and those which are “improved”, “safe”, and therefore acceptable.

In stage 1 we identified **four main groundwater water source types** (photographs 1-4) which fit the self-supply concept. **Type 1** is a very shallow (<1m) small water hole (“almost a spring”) on a hillslope or near the valley floor, sometimes protected by earth bunds and/or stone or timber to allow access without entering the water. **Type 2** is a

more extensive, deeper (up to 2-3m) valley tank, utilising shallow groundwater from a swamp or near-swamp. **Type 3** is a self-initiated usually brick lined shallow well, with rope-and-bucket, windlass or handpump. **Type 4** is a private borehole with handpump or submersible pump.



Photo 1. A “type 1” water source in Bugiri district

The initiators of self-supply improvements tend to be (a) influential community members or leaders; (b) relatively wealthy rural or urban householders who can invest in, for example, shallow wells; (c) rural or urban householders with political influence who use their authority to steer Government investment to their own and their neighbours’ advantage; and (d) businesses and institutions (including NGOs and foundations), often with foreign funding links.



Photo 2. A “type 2” water source in Nakasongola

Regarding **source use**, we found no truly private sources. “Private” sources are shared, either free of charge, or at a small charge for water. Water users do not participate in maintenance and care of the source. In rural areas, paying for water can be completely unacceptable still, although

this is less so in trading centres and conurbations. Multiple source usage (using the better quality supply for drinking, and an inferior quality source for other domestic purposes) does happen, but in many cases rural people were found to use one source for all purposes.



Photo 3. A “type 3” water source in Bugiri town

Investments in self-supply fall into four categories: (a) input of local labour and materials only; (b) investment of private Ugandan cash; (c) “steering” of Government funds; and (d) foreign money.

Barriers to self-supply include (a) the official position of the authorities, to discourage use of poor water quality sources; (b) the insistence by both Government agencies and NGOs that they support communities, not individuals; (c) the blind-spot of both Government and NGOs regarding the positive steps people have made to improve their sources; and (d) the inability of all except a very few to invest in the more expensive (type 3 and type 4) technical options.



Photo 4. A private kiosk served by a “type 4” water source in Iganga town

A new conceptual framework

We propose a new way of conceptualising water supply services that recognises a spectrum from unimproved traditional sources through to a full in-home on-demand service (Tables 1 & 2). This approach scores any individual source on a scale of 0 (poor), 1 (medium) or 2 (good) against five characteristics: **access, water quality, reliability, cost and management**. In this way a source can score anything from 0 to 10. We stress though that access, water quality and reliability are only achieved at a cost, in both financial and management terms. Consequently even a traditional unimproved source can score up to about 4 (if access and reliability are good, and since cost and the management burden are small). A fully treated piped water supply would probably only ever score 8, because of the high per capita cost of development.

Our conceptual framework allows a more integrated and balanced approach to the consideration of water supply service improvements, without over-emphasising one issue (such as water quality) at the expense of others which may be more important to consumers (eg access and reliability). The trade-off between service level (access, quality, reliability) and cost and management is made explicit. It also enables one to rapidly assess the characteristics of a “traditional” source and identify areas for support or assistance. Rather than ignoring people’s own self-supply initiatives and investing only in “conventional” improved sources, issues of access, source protection and reliability can be prioritised with households

and communities, and addressed accordingly – perhaps at significantly lower cost than in the conventional approach.

External support to self-supply initiatives

We offer three initial thoughts on self-supply support options. These are: (a) the use of the scoring framework to identify **incremental (low-cost) source improvements**, building on the initiatives households or communities have already taken. Deepening, extending, protecting, covering, and/or fencing would be some of the possible interventions here; (b) **support and subsidy to ‘private’ source owners** to develop water sources, on the basis that such sources will be used not just by the individual, but also by the surrounding community; and (c) **support to private source operators**, to enable them to carry out source management and maintenance without the need for water user committees, but with sensitisation of user households to the need to contribute financially in return for source reliability.

Conclusion

The key conclusions so far from this case study of self-supply are that (i) private initiatives are alive and well in the Ugandan rural water sector; (ii) sources which are private in the sense of ‘for the exclusive use of the owner’ probably do not exist in Uganda; (iii) there may be opportunities for Government and NGOs to support self-supply initiatives, if those initiatives are recognised, valued, assessed and assistance is carefully targeted.

Table 1 Proposed Scoring System for Water Sources

Characteristic	Score 0	Score 1	Score 2
Access	Distance and/or ascent result in very limited consumption (typically less than about 8 litres per person per day.	Water is close to most users (typically within 0.5-1.0km), but still has to be carried home.	Water is supplied into the yard or house.
Water quality	Water is obviously polluted, reported to taste unacceptable, or is clearly at risk of contamination from pit latrines, livestock or other cause.	Source is well protected but untreated. Any storage is covered, and there are no obvious routes for contamination.	Water is treated (including disinfection), and treatment is managed to a high standard.
Reliability	Source performance fluctuates with season, or dries up with heavy use, such that users have to go elsewhere at certain times. Unreliability or low yield may lead to conflict between users.	Although consumption may be low because of access, the demands of the users can nearly always be met, and queuing times do not cause conflict or recourse to inferior sources.	Water is always available on demand, and consumption rates exceed 20 litres per person per day.
Cost	Cost is high. In the case of some “traditional” sources there is a high human cost in time, energy and ill health. In the case of some improved sources, capital cost can only be borne by a state or private investor. User fees may cover part or all of O&M costs, or users may pay no user fees.	Typically the users can contribute 10-15% of the capital cost. User fees cover basic maintenance only (and no contribution to capital cost recovery)	Capital cost is such that users can bear at least 50% of the investment. User fees are negligible.
Management	System maintenance is the responsibility of a competent body or person. User contribution to management is purely financial. If the private or public body provides a reliable service, raise score to 1. If the body is permanent, raise to 2.	Long term external support is needed to enable user management to function satisfactorily.	The source, as constructed, can be managed by the users, without external support.

Table 2 Examples of Use of the Scoring System

Description of source	Quality	Access	Reliability	Cost	Management	Total
Untouched traditional surface water or swamp water source: polluted, distant, drought-prone.	0	0	0	0	2	2
Shallow uncovered hand dug well with rope and bucket, near to users, but near to pollution sources. Yield is good.	0	1	1	0-1	2	4-5
Deep borehole with handpump, serving extended community.	1	0-1	0-1	0-1	1	2-5
Protected spring, near to users, and well maintained.	1	1	1	1	2	6
Household rainwater system with small storage capacity (less than 2m ³)	1	2	0	1-2	2	6-7
Household rainwater system with large storage capacity (more than 2m ³)	1	2	1	1-2	2	7-8
Piped, treated water in the home, supplied by a competent, permanent body.	2	2	2	0	2	8

References

- Anon (2004a) A National Framework for Operation and Maintenance of Rural Water Supplies. Rural Water Supply Division, Directorate of Water Development, MoWLE, Uganda.
- Anon (2004b) Water and Sanitation Sector Performance Report. September 2004 Ministry of Water, Lands and Environment, Directorate of Water Development, Kampala.
- Anon (2005) Accelerated Domestic Roofwater Harvesting in Uganda, Action Plan. Second Draft, 27th May 2005. Directorate of Water Development.
- Sutton, S (2002) Community-led Improvements of Rural Drinking Water Supplies. Knowledge and Research Project (KAR) R7128, Final Report, UK Department for International Development. 55pp.
- Sutton, Sally and Nkoloma, Hope (2003) Encouraging Change: Sustainable Steps in Water Supply, Sanitation and Hygiene. ISBN 0-9544894-3-8. 117pp. TALC, PO Box 49 St Albans, Herts, AL1 5TX, UK [Tel +44 (0)1727 853869; fax 846852; email talc@talcuk.org].
- Sutton, S (2004) Self Supply: a Fresh Approach to Water for Rural Populations. RWSN Field Note, November 2004. 12pp. http://depuran.mhs.ch/themes/self_supply/fieldnoteself-supply/link_view last visited 11th June 2005.

Contact address

Aaron Kabirizi,
Assistant Commissioner Rural Water,
Directorate of Water Development,
Luzira, PO Box 20026, Kampala, Uganda.
email kabirizi@dwd.co.ug
Tel +256 (0)77 400876

Richard C Carter,
Professor of International Water Development, Cranfield University,
Silsoe, Bedford, MK45 4DT, UK.
email r.c.carter@cranfield.ac.uk
Tel +256 (0)77 939416; +44 (0)1525 863297

Joyce Magala Mpalanyi, Consultant,
c/o WaterAid Uganda,
Plot 90 Luthuli Avenue Bugolobi, PO Box 11759, Kampala, Uganda.
Tel +256 (0)77 525229

Jamil Ssebalu, Consultant, Namasuba College of Commerce, Kampala, Uganda.
email ncc30@hotmail.com
Tel +256 (0)77 483097

Note

The work reported in this paper was carried out at the initiative of the Self-Supply flagship of the Rural Water and Sanitation Network (RWSN). The work was project-managed by WaterAid Uganda, and steered by the Directorate of Water Development Uganda, WaterAid, Uganda Water and Sanitation Network (UWASNET) and the Water and Sanitation Program (WSP) of World Bank.