

CHAPTER 2

Women's access to safe water and participation in community management of supply

Richard Bagonza Asaba, G. Honor Fagan, and Consolata Kabonesa

Abstract

Poverty is rife in Uganda in both urban and rural communities. This chapter outlines the situation for poor women securing water for their households in a rural village. It gives an account of poor women's 'fluid lives' as they engage in efforts to secure water for their households and participate in water governance at community level where there are persistent water-related problems. The authors conducted a socio-economic study of households in a poor rural parish in order to better understand women's safe water access and participation in the management of a healthy community water supply. The study findings confirm that gender remains an important analytical tool for identifying access issues, since gender relations and inequalities are evident in most of the mechanisms of access to water in this community. The chapter explores how women and children remain vulnerable to lack of access to safe water, even where there are community schemes and improved water sources in place, since for the most part powerful, formal positions such as village chairperson, water user committee member, and handpump mechanic continue to be held by men. This is despite the fact that, in the case of water user committees in particular, the 1999 National Water Policy stipulates that women should make up 50 per cent of such committees. In addition, payment arrangements, particularly maintenance and repair fees, frequently result in denying vulnerable children and women physical access to water resources whenever men, as household heads, do not pay these fees. Strategies which seek to improve women's access to safe water and power in community organization of water remain essential.

Keywords: gender, water, women, access, community management

Introduction

Poverty is rife in Uganda in both urban and rural communities. The form it takes in rural communities provides the context for this chapter, which outlines the current situation with regard to poor women securing water for their households.

According to the WHO/UNICEF Joint Monitoring Programme (JMP), targets set in the Millennium Development Goals (MDGs) on access to safe drinking water have been reached, with 89 per cent of the global population now using 'improved'¹ drinking water sources (WHO and UNICEF, 2012). However, 768 million people do not have access to safe water, and 40 per cent of these live in sub-Saharan Africa (WHO and UNICEF, 2013). This chapter provides an account of women's 'fluid lives', as described by Farhana (2009), in a community where securing safe water places women and children in potentially life-threatening situations. Efforts by poor women to access water for their households and participate in water governance at community level, where there are persistent water-related problems, were the focus of this research. The chapter reports on working with households, and with women and children in particular, to better understand and support their access to, and participation in, the management of a healthy community water supply.

The importance of safe water in rural communities

In most developing countries, people in rural areas are five times more likely to use 'unimproved'² water sources compared with their counterparts in urban areas. In addition, distances to water sources are very long and, compared with men and boys, women and girls spend a lot of time and energy collecting water (Crow, 2001; UNDP, 2006; WHO and UNICEF, 2000, 2012: 6–12, 31). In Uganda, access to safe water³ is considered crucial for economic growth and development, good health, and an economically productive population, especially in rural areas, where 85 per cent of the entire population live (UBOS, 2010). The National Household Survey (UBOS 2010) revealed that over 90 per cent of the country's poor households⁴ (or 7.1 million people) are in rural areas. Rural areas also have the highest levels of illiteracy, poor education facilities, poor health, and inadequate infrastructure, including water, roads, and electricity. Whereas access to safe water in rural Uganda has improved in the past 11 years, current estimates indicate that only 64 per cent of households use 'improved' water sources (GoU, 2012). This is mainly due to natural/geological and social challenges, the latter including inadequate operation and maintenance (O&M) mechanisms, continuous breakdown of improved water sources, and low involvement of women in water governance at local levels (Asingwire, 2011; GoU, 2009, 2010; Nimanya et al., 2011; Otiso, 2006; UWASNET, 2009). These conditions mostly affect women and children, who are sometimes forced to use water from unimproved water sources (e.g. Asaba et al., 2014; GoU, 2011b; Kanyesigye et al., 2004). Due to traditional stereotypes, norms, and practices, women and mostly girl children bear the burden of collecting water, using heavy water containers and procuring it from distant water sources (e.g. Danert and Motts, 2009; GoU, 2010, 2011a, 2012; UBOS, 2006, 2010).

Water plays a vital role in reducing poverty, especially in agriculture, which is the main source of livelihoods and income for rural populations in Africa (FAO, 2011). Access to safe drinking water improves physical and mental health, and, together with adequate sanitation and hygiene, reduces water-related diseases among the poor (UNDP, 2006; WHO, 2003). Improved water service delivery can also empower marginalized groups such as women and children, leading to their improved health, education, economic production, and security, as well as the governance and sustainability of water supplies (Cleaver and Hamada, 2010; Trémolet and Hunt, 2006; WaterAid, 2009).

Accessing safe water

As part of the case study research, the researchers surveyed approximately 600 households regarding their access to, and use of, safe water (Macri et al., 2013). The major improved water technologies that operated under formal 'rules' were tube wells or pumps (28 Indian U2 design shallow wells and eight U3M design deep wells/boreholes) and one protected spring. Whereas boreholes and shallow wells existed in almost all of the 15 villages in the study area, the researchers located only one protected spring; this spring was used by communities from the surrounding three villages. In August 2011, when the survey began, no boreholes were functioning and only seven shallow wells and the protected spring were usable. The main unimproved sources in the parish, most of which were run under customary rights, were ponds, open or hand-dug wells, and unprotected springs. Interestingly, approximately 40 per cent of survey respondents in the case study area mainly used water from unimproved unprotected sources. A further 26 per cent of all households studied mainly used shallow wells, and the rest used boreholes (20 per cent, when functioning), rain-harvested water (9 per cent), and the protected spring (5 per cent). Boreholes and shallow wells were the predominant sources for households occupying permanent and semi-permanent dwellings (Macri et al., 2013: 26).

When asked why they mainly used unimproved water sources, the survey respondents, in particular the women, indicated they used the unprotected sources because these were more permanent and 'reliable' sources of water. In addition, these sources were located closer to their households. The correlation between the main water sources used and proximity was highly significant, with unimproved water sources accounting for 35 per cent of the responses for shorter distances of less than half a kilometre to households (Macri et al., 2013: 27). Other reasons provided for using unimproved water sources were that they were felt to meet all the household water needs. When probed further on this point, however, respondents indicated that frequent breakdown of pumps and slow repairs left them feeling that the O&M fees were not worth paying. This added to the belief that, according to some women, the water did not even taste that nice from the improved sources and that water from

pumps was salty or 'less tasty' (referred to locally as *tegawooma*). This was unfortunate given that the improved sources were the safer, although more expensive, option. Therefore, despite the existence of improved water sources, communities had their own understanding of what constituted good water, depending on their sense of taste, their own sense of value for money, and their own calculations regarding the labour involved in accessing safe water from these sources.

The household survey found that 88 per cent of the respondents made their water safe by boiling it (Macri et al., 2013: 34). Due to the use of unimproved water sources, and despite the commonly reported strategy of boiling water, 76 per cent of people in the households surveyed had experienced malaria during the previous year, 42 per cent had experienced stomach ache, and 37 per cent had experienced diarrhoea (Macri et al., 2013: 35). Water-related diseases were associated with significant costs, with 67 per cent of households indicating that their household expenses increased as a result of such diseases, 43 per cent reporting that water-related diseases had an impact on school attendance, and 38 per cent reporting loss of earnings due to diminished labour (Macri et al., 2013: 36).

Other studies have also documented high dependence on unimproved water sources in Uganda. For example, a participatory poverty assessment undertaken 12 years ago, and a review of water service delivery in other districts in eastern and central Uganda showed that rural women and children mostly relied on unimproved technologies for drinking water (GoU, 2002; Kanyesigye et al., 2004). Reasons for relying on unsafe water sources, such as shorter distances, refusal to pay high O&M fees, and pump breakdowns, have also been reported in northern, eastern, and central areas of rural Uganda (e.g. Asingwire, 2011; GoU, 2010, 2012; Kanyesigye et al., 2004).

Poor roads and paths

Roads and paths can facilitate the ability to physically reach a water resource by altering the number of people or vehicles that can reach a remote locality (e.g. Geisler and Silberling, 1992, in Ribot and Peluso, 2003: 165). If roads and paths are not in good condition, this can increase the burden and risks of carrying water (Sorenson et al., 2011). In the case study area, the use of poor roads and paths while collecting water was one of the major problems faced by survey respondents. Observations in four villages showed that community roads and paths leading to improved and unimproved water sources were uneven, hilly or steep, potholed, and in some cases stony. The paths were also narrow and 'bushy', a condition that potentially increased the risk of accidents for women and children. Women and children struggled to carry water around the steeper areas close to the water sources, sometimes falling and spilling the water in their containers or jerrycans, or even rupturing the jerrycans. Children also complained about stubbing their feet on stones, tree

stumps, and other objects, or 'missing steps' on the rugged paths or roads they used while carrying water by hand/head-loading to their homes. Furthermore, some of the water sources were accessed by crossing major village roads used by vehicles, motorcycles, and bicycles, which increased the risk of injury or death while walking to and from the water sources.

The findings from this study highlight the need to have good road infrastructure in place for water collection, not only in rural Uganda but indeed in most developing communities. The hilly, bushy, and often unsafe roads and paths leading to water sources make water fetching more difficult for the women and children who use them while carrying heavy water loads by hand or by head-loading. The hills or steep slopes further increase the burden of carrying water. In addition, vehicles and motorcycles affect access to some water sources, and accidents involving these vehicles and women and children who are carrying water can also lead to injuries or death.

Women's role in community management of water sources

Formally constituted institutions, such as local government structures and user groups or associations, mediate access to water by different groups through processes of management and practice (e.g. Cleaver and Hamada, 2010: 29; Cleaver and Toner, 2006; Fabricius and Collins, 2007; Franks and Cleaver, 2007: 295, 300). In rural Uganda, some water associations and authoritative local administrative arrangements are gender sensitive, and therefore influence women's access to water.

Village chairpersons are elected leaders and are the most authoritative individuals in all villages in rural Uganda. Their authority is accorded to them by the Local Government Act (1997). Village chairpersons supervise all developments in their villages, including water developments. They are ex officio members of village water user committees (WUCs), as stipulated in rural water policies (e.g. GoU, 2007, 2011a); they monitor these committees, approve by-laws made by WUCs, and then forward them to higher local government authorities and the police for approval.

At the time the survey was carried out, all 15 village chairpersons in the case study area were men; this was due to patriarchal norms, values, and stereotypes – such as the view that, compared with women, men are seen to be 'better and stronger village leaders' – coupled with views on what are considered acceptable roles for men and women. The authority and influence of the male village chairpersons determines who accesses water, how active WUCs are, and when pumps should function. For example, village chairpersons sometimes deny or allocate access to especially improved water sources to certain individuals and households, depending on the status of the relationships they have with them, even in cases where the households had not paid O&M fees. In one village, a widow in her 70s alleged that the village chairperson, through the caretaker and some members of the WUC,

had denied her, her grandchildren, and members of her household access to the borehole because she had supported a rival candidate during elections for the position of woman councillor in the parish.

Village chairpersons also often wield their authority whenever pumps malfunction by contacting the handpump mechanics (HPMs) and requesting them to repair pumps, even on occasions when the chairpersons do not have funds available to pay for such work. Village chairpersons also often urge individual community members to pay their share.

WUCs are formally constituted user groups that mediate access to water resources (Jonsson, 2005). Moreover, they provide a forum where the voices of women can be heard (Cleaver and Hamada, 2010; Plummer and Slaymaker, 2007: 19). WUCs also act as the established and recognized executive organs of water user groups for each improved water point in rural Uganda (GoU, 2007: 12; RWSN, 2010). In the case study area, WUCs existed for all improved water sources in each village, although many of these sources were inactive. The WUCs were male dominated in terms of leadership positions. Similarly, all of the WUC chairpersons for a protected spring, borehole, and two shallow wells were men. Women held only five key positions: vice chairperson (two); secretary (two); and treasurer (one). Of these five positions, three related to just one WUC. Only two women held positions in the remaining WUCs in the case study area.

Gender composition in leadership roles in WUCs seems to shape women's ability to access safe water. The WUC for the shallow well in one village, where three women were involved in leadership roles, was reported to be the most active in the parish, as it collected pump repair fees promptly. Because pump repairs were carried out quickly, the community was able to obtain clean water from the well without having to endure long periods of time waiting for work to be carried out. Such success was due to the good mobilization skills of the women WUC members. The WUCs that had a number of women in key roles enjoyed good relationships with the village chairpersons, and they also enjoyed the trust of water users with regard to handling and utilizing O&M fees and repair fees. Where WUCs were not active, the malfunctioning of pumps continued for long periods, usually between six months and a year, or even longer. Such prolonged periods with malfunctioning pumps increased women and children's physical burden of collecting safe water, as they had to obtain it from neighbouring villages, which were located at a distance of at least 1–3 km from their homes.

HPMs are critical to the proper functioning of improved water technologies in African rural communities (RWSN, 2012: 16). In Uganda, HPMs operate as private individuals hired by local government authorities or NGOs to handle, maintain, and repair pumps. In the case study area, only men hold these positions, as is the case in most rural areas of Uganda. Their expertise in terms of technical skills, and their relationships with communities and village chairpersons determine the functionality of the pumps. Other research carried out in Uganda shows that most HPMs, or improved water

source technicians,⁵ are men. For example, an assessment of the effectiveness of the community-based maintenance system for rural water supply facilities in 16 districts representing different regions of Uganda noted that about 97 per cent of all improved water source technicians were males, with females making up only 3 per cent (Asingwire, 2011). In some rural districts, especially in northern, southern, and eastern Uganda, accessing HPMS is not easy, and in other districts they are not well trained (e.g. Ademun, 2009; Nimanya et al., 2011; YODEO, 2007, in Mommen and Nekesa, 2010). Given the shortage of women in this position, there remains a deficit of technical 'know-how' within the female community at local level, thus limiting their ability to maintain functioning pumps.

Education and training

Access to certain forms of knowledge and privileged information, higher education, or specialized training shapes access to resources (e.g. Foucault, 1981; Ribot and Peluso, 2003).

The village chairpersons (all men, as discussed in the previous section) were in most cases more educated than other people in their communities and were in the 'knowledge loop' with regard to water technologies to be established or repaired by government. Through their actions, decisions, and relationships, the village chairpersons could affect access to water resources. Training on community-based management of water resources – particularly on the role of a WUC – can enable water users to mobilize others and even kick-start collection of repair funds whenever shallow wells break down. Such initiatives may in turn lead to pump repairs being carried out quickly.

In the case study area, 79.3 per cent of men and 81.6 per cent of women had not received any form of sensitization or training on water resource management (Macri et al., 2013).

Gender and payment for securing safe water

Fees to access, payments for maintenance, rights, and 'in kind' arrangements control access to safe water resources (Bolt and Fonseca, 2001; Franks and Cleaver, 2007). In the case study area and in rural Uganda in general, financial payments and payments in kind for water determine whether women and children can access water. Formal O&M fees are established by the WUCs for access to their improved water sources, as outlined in water policies (e.g. GoU, 1999, 2007). The payment of these fees allows access to water in the parish.

When asked about the financial contributions made by their household towards the operation and maintenance of their water sources, 20 per cent of respondents confirmed that they had never made such a contribution, 12 per cent could not tell when they had last contributed, and 14 per cent said they had contributed more than two years previously. However, it is important to note that, given the overall poverty rate in the community, over half the

respondents (51 per cent) had contributed during the past year (Macri et al., 2013: 46). Survey respondents and WUC members reported that it was difficult to collect monthly O&M fees, and so the common practice was that repair fees (estimated to be between UGX 50,000 and UGX 100,000, equivalent to US\$ 21–41)⁶ were collected only when the pumps broke down. Culturally, men – the breadwinners and household heads – were responsible for paying these fees; the exceptions to this rule were cases where a woman was household head. In the villages where household heads paid O&M fees promptly, pumps were repaired within short timeframes, as WUCs easily raised sufficient funding to cover this expense. Whereas most women willingly paid the fees, many men and male-headed households declined to pay. In the case study survey only 38 per cent of respondents said that adult males or male household heads paid O&M or repair fees.

Men's failure to pay can be partly attributed to their limited cultural roles in domestic water provision. While some men claimed they were poor, or did not have the money, others simply never took payment of the fees seriously. Some men argued that it was the responsibility of the providers of the pumps (local government, politicians, and NGOs) to fix them. Studies from other areas of rural Uganda also indicate that community members, especially men, do not pay O&M fees, even when denied physical access to pumps, and this often leads to conflicts with their WUCs (e.g. Asingwire, 2011; CREAM, 2009; GoU, 2009, 2011; Socio-Economic Data Centre, 2001). Women and children from defaulting households tend to be denied physical access to improved water sources, and are thus forced to use the less restricted unimproved sources and to move to other far-off sources. However, in the case study area and in other districts in rural Uganda, vulnerable individuals such as very poor and widowed women and the elderly are usually exempted from paying O&M or repair fees through local entitlements. Exemptions for the very vulnerable is also an issue that is emphasized in rural water policies (e.g. GoU, 2011).

Conflict and deepening insecurity arise in cases where there are difficulties in paying O&M fees. Non-payment can lead to conflict at water sources. In the case study area, in-depth interviews revealed incidents where men and boys from households that defaulted on fees used pumps out of hours (usually after 8 p.m.) or early in the morning (between 4 a.m. and 5 a.m.), times when WUC members, especially source caretakers, were not available to restrict their illegal physical access. There were also cases of vandalism in some villages, where men and boys broke the padlocks put on pumps to control access out of normal working hours.

In some cases, access to water can also be achieved through providing direct communal labour, indirect labour (such as collecting money for running committees), and 'ancillary' labour or preparing food for community labourers (Coles and Wallace, 2005: 71). In the case study area, all types of labour were in place whenever communities themselves organized work on constructing, repairing, or cleaning both the improved and unimproved water sources.

Here, both cultural practices and a gender division of labour prevent men and women from working side by side. Men carry bricks, gravel, and other materials during the construction or repair of improved water sources, whereas women work together in a separate area, picking up rubbish lying around the open wells, slashing grass and surrounding bushes, or cooking food for the working parties.

Women and water collection

Water collection is a cultural and gender-related activity in terms of the burden of responsibility and distances travelled to access water sources (Coles and Wallace, 2005; Franks and Cleaver, 2007: 301; Makoni et al., 2004). As is the case in most developing countries, studies from rural Uganda indicate that responsibility for fetching water as well as overall water management in households is dictated by gender and cultural norms, in that these tasks are almost entirely undertaken by women. Other studies from rural Uganda demonstrate that the burden of water collection is borne by both women and children, with the latter missing school or arriving at school late due to having to collect water for their households (Danert and Motts, 2009; GoU, 2011b; Rudaheranwa et al., 2003; UBOS, 2006).

In the case study area, 54 per cent of respondents said that women were responsible for collecting water in households. In contrast, in-depth interviews and observations revealed that girl and boy children aged 5–15 were more heavily involved in water fetching. Girl and boy children made several trips to water sources in a single day, carrying heavy containers varying between 5 litres and 20 litres depending on the children's age, and they arrived at school late on many occasions, especially in the dry season. Thus, traditional norms in the parish mostly accorded the task of fetching water to children. Additionally, women in households with children were less involved in water collection than women in households with no children. Men rarely collected water for domestic use, due to traditional patriarchal norms and stereotyping, whereby water fetching is deemed shameful, demeaning, and inappropriate for them. Men fetched water for other than domestic use – often for its resale – but usually when they had the use of some technological support for its transport. Observations at water sources showed that men and male youths mostly used bicycles to fetch water, and, less often, motorcycles and wheelbarrows. Most women, on the other hand, did not have access to these modes of transport, unless mediated through men.

With regard to distances travelled to fetch water, recent statistics indicate that people in rural households in Uganda travel an average of 0.9 km to their main water sources (UBOS, 2014: 138). While the average distance travelled to fetch water from improved water sources in at least three villages was also slightly less than 1 km, women complained about arduous journeys due to the hilly terrain, bad roads, and the paths they had to use in order to reach the water sources.

Women and children in other areas of rural Uganda travel even longer distances than women in the case study area. In mid-eastern, central, and south-western Uganda, they travel between 1 km and 5 km to fetch water for domestic use (Ademun, 2009; Danert and Motts, 2009; DMTC, 2009; GoU, 2008, 2011a; Sugita, 2006). These distances, coupled with factors such as difficult terrain, poor water flow, and queues at the water sources, mean that every day these groups spend a lot of valuable time – ranging from several minutes to several hours – fetching water. For example, women and children in the case study area spent between 30 minutes and 1 hour collecting water on a single trip in an average day.

It is worth noting that women and children in rural Uganda also face other challenges which increase their burden while collecting water, and many of these challenges are less reported in the literature. They include ill health due to carrying heavy water loads, accidental injuries, drowning, assault, rape, and defilement. In this case study area, women and youths aged between 15 and 24 years carried 20 litre jerrycans; children aged 10–15 carried 10 litres; and those aged 5–10 carried 5 litres. As a result, they all frequently suffered from chest pain, with children in particular complaining about fatigue, headaches, and nosebleeds. Children also sustained injuries due to falling while carrying heavy water containers, skidding on the rugged and slippery roads during the rainy season, and tripping over stones. The researchers were told that three children had drowned while attempting to draw water from unimproved water sources, particularly open wells and ponds. Women and children also suffered from verbal and physical assault while collecting water. For example, girl children alleged that boys insulted them while queuing at improved water sources, and child fights resulting from quarrels and boys trying to jump the queue led to injuries such as minor body cuts and swellings. Threats of being attacked by animals and reptiles were also real, with 'big' snakes frequently sighted at one of the open wells. At least three cases of child defilement were reported, one at an improved water source and the other two at an unimproved water source. There was also one case of attempted rape of women at an unimproved source.

Conclusion

This study has provided evidence from rural Uganda of the intricate, gender-related nature of access to water in areas where community schemes are in operation. Access to safe water sources remains a central problem for women and children in the study area. Gender relations and inequalities are evident in most of the mechanisms of access to water. Women and children are also burdened by the physical challenges and other risks they face while collecting water. For the most part, powerful formal positions such as village chairpersons, WUC members, and HPMS continue to be held by men. This is despite the fact that, in the case of WUCs in particular, the 1999 National Water Policy stipulates that women should make up 50 per cent of such committees. The gender ratios for committees that are stipulated in government policy are

not enforced despite the fact that, as demonstrated in this study, women's involvement in WUCs translates into more active WUCs and increased access to safe water. Payment arrangements, particularly maintenance and repair fees, frequently result in denying vulnerable children and women physical access to water resources whenever men, as household heads, do not pay these fees. Encouraging men to pay fees, improving education or sensitization on safe water, and increasing women's involvement in the management of community water resources can bring real change.

About the authors

Richard Bagonza Asaba holds a PhD in Sociology (Gender and Rural Water Governance) from Maynooth University, Ireland and was one of the doctoral students on the Water is Life project. He teaches at the School of Women and Gender Studies (SWGS), Makerere University. Before joining SWGS in 2008, he lectured in environmental social sciences at the Department of Environmental Science and Management, Kampala University for six years. His research interests include: social and gender issues in natural resource management; hazards/disasters; climate change and adaptation; health (malaria, HIV/AIDS); gender-based violence; agriculture; education; and participatory governance. He has published two articles on gender and water (as the main author) in *wH2O: The Journal of Gender and Water*; he has also published articles on participation in local governance and malaria. Asaba has over 10 years' experience of development projects and research and has undertaken various consultancies, including evaluation of development projects with governmental organizations and NGOs in a Ugandan (and east African) context.

G. Honor Fagan is a Professor of Sociology at the National University of Ireland, Maynooth. Her overall research strategy has been to contribute to the development of a social sustainability paradigm from a sociological perspective. She has published three books, including: the prize-winning *Globalisation and Security: An Encyclopaedia*; seven book-length national reports informed by original field research, which are designed to impact targeted policy developments; and more than 30 journal articles and book chapters, including articles in top international journals such as *ANNALS of the American Academy of Political and Social Sciences*, *Capitalism, Nature and Class*, *Journal of Education*, and *Policy & Politics*.

Consolata Kabonesa is a Senior Lecturer and former Dean of the School of Women and Gender Studies, Makerere University, Kampala. She has a PhD from the University of Illinois at Urbana-Champaign in the United States and previously worked there as a teaching and graduate assistant in the Department of Human and Community Development. Her research focuses on gender and human development, and her major research interests include water, agriculture, health (especially HIV/AIDS), technology and gender budgeting. She has reviewed books on the impact of climate change on women

and feminist economics. She has published over 10 articles in international journals and recently co-authored two articles on water published in *WH2O: The Journal of Gender and Water*. She has over 20 years of specialized experience in gender training, women and gender programming, and research on human and community development. She has worked on a broad range of research projects funded by international development agencies, such as the UK Government Agency for Development (DFID), Norwegian Agency for Development Cooperation (NORAD), the International Development Research Centre (IDRC), US Agency for International Development (USAID), Swedish International Development Cooperation/Department for Research Cooperation (Sida/SAREC), the World Bank, United Nations, organizations such as the Rockefeller Foundation, Carnegie Corporation and Ford Foundation, FAO, UNDP, Irish Aid, and the Ugandan government.

Notes

1. 'Improved' water sources are defined by WHO/UNICEF JMP as those that, by nature of their construction or through active intervention, are protected from outside contamination, especially faecal matter. Examples include piped water into dwellings, boreholes, protected springs, protected dug wells or shallow wells, and rainwater.
2. 'Unimproved' water sources are defined by WHO/UNICEF JMP as those that, by nature of their construction or through active intervention, are not protected from outside contamination, especially faecal matter. Examples include unprotected springs, unprotected dug wells, and surface water.
3. Defined in Uganda as the ability of households to use 20 l of water per person per day from an improved source that is located not more than 1.5 km from their dwelling (GoU, 2007), and more recently redefined as not more than 1 km from their dwelling (GoU, 2010: xii).
4. A household is defined as a group of persons who normally cook, eat, and live together irrespective of whether they are related (UBOS, 2006).
5. Including HPMS, plumbers, gravity flow scheme attendants, and masons.
6. Exchange rate US\$1 = UGX 2,425 during the data collection period March to December 2011.
7. In this study, youths were defined as people aged between 18 and 24.

References

- Ademun, S.R. (2009) *Domestic Water Supply: An Evaluation of the Impacts, Challenges and Prospects on Women in Rural Households in Uganda*, unpublished MSc thesis, University of Lund.
- Asaba, R.B., Fagan, G.E., Kabonesa, C., and Mugumya, F. (2014) 'Women and access to water in rural Uganda: A review', *WH2O: The Journal of Gender and Water* 3(1): 19–25.
- Asingwire, N. (2011) *Assessment of the Effectiveness of the Community-based Maintenance System for Rural Water Supply Facilities*, Kampala: Ministry of Water and Environment, and Directorate of Water Development.

- Bolt, E. and Fonseca, C. (2001) 'Keep it working: A field manual to support community management of rural water supplies', IRC Technical Paper Series 36, Delft: IRC.
- Cleaver, F. and Hamada, K. (2010) "'Good" water governance and gender equity: A troubled relationship', *Gender & Development* 18(1): 27–41 <<http://dx.doi.org/10.1080/13552071003599996>>.
- Cleaver, F. and Toner, A. (2006) 'The evolution of community water governance in Uchira, Tanzania: The implications for equality of access, sustainability and effectiveness', *Natural Resources Forum* 30(3): 207–18 <<http://dx.doi.org/10.1111/j.1477-8947.2006.00115.x>>.
- Coles, A. and Wallace, T. (2005) *Gender, Water and Development*, Oxford: Berg.
- CREAM (2009) *Assessment of Factors Affecting Functionality of Water Sources: A Case Study in Koboko District*, Kampala: SNV.
- Crow, B. (2001) 'Water: Gender and material inequalities in the Global South', CGIRS Working Paper Series. Center for Global, International & Regional Studies, Santa Cruz: University of California.
- Danert, K. and Motts, N. (2009) *Uganda Water Sector and Domestic Rainwater Harvesting Subsector Analysis*, Washington, DC: Relief International – Enterprise Works/VITA.
- DMTC Ltd (2009) *Gender Analysis of the Water and Sanitation Sector*, Kampala: Ministry of Water and Environment.
- Fabricius, C. and Collins, S. (2007) 'Community-based natural resource management: Governing the commons', *Water Policy* 9(S2): 83–97.
- Farhana, S. (2009) 'Fluid lives: Subjectivities, gender and water in rural Bangladesh', *Gender, Place & Culture: A Journal of Feminist Geography* 16(4): 427–44 <<http://dx.doi.org/10.1080/09663690903003942>>.
- Food and Agriculture Organization (FAO) (2011) *State of the World's Land and Water Resources for Food and Agriculture: Managing Systems at Risk*, Rome: FAO.
- Foucault, M. (1981) *History of Sexuality*, translated by Robert Hurley, vol. 1, London: Penguin.
- Franks, T. and Cleaver, F. (2007) 'Water governance and poverty: A framework for analysis', *Progress in Development Studies* 7(4): 291–306.
- Government of Uganda (GoU) (1999) *National Water Policy*, Kampala: Ministry of Water and Environment (MWE).
- GoU (2002) *Deepening the Understanding of Poverty: Second Participatory Poverty Assessment*, Kampala: Ministry of Finance, Planning and Economic Development.
- GoU (2007) *Water and Sanitation Sector District Implementation Manual*, Kampala: MWE.
- GoU (2008) *Water and Sanitation Sector Performance Report, 2008*, Kampala: MWE.
- GoU (2009) *Water and Sanitation Sector: Sectoral Specific Schedules/Guidelines 2009/10*, Kampala: MWE.
- GoU (2010) *Water and Environment Sector Performance Report, 2010*, Kampala: MWE.
- GoU (2011a) *National Framework for Operation and Maintenance of Rural Water Supplies in Uganda*, Kampala: MWE.
- GoU (2011b) *Water and Environment Sector Performance Report 2011*, Kampala: MWE.

- GoU (2012) *Water and Environment Sector Performance Report 2012*, Kampala: MWE.
- Jonsson, A. (2005) 'Public participation in water resources management: Stakeholder voices on degree, scale, potential, and methods in future water management', *AMBIO: A Journal of the Human Environment* 34(7): 495–500 <<http://dx.doi.org/10.1579/0044-7447-34.7.495>>.
- Kanyesigye, J., Anguria, J., Niwagaba, E., and Williamson, T. (2004) *Are National Water and Sanitation Objectives Achieved on the Ground? A Review of Service Delivery, Planning Monitoring and Evaluation in Tororo and Wakiso Districts*, Kampala: WaterAid.
- Macri, G., Rickard, A., Asaba, R.B., Fagan, G.H., Munck, R., and Suzanne, L. (2013) *A Social-Spatial Survey of Water Issues in Makondo Parish, Uganda*, Dublin: Dublin City University.
- Makoni, F.S., Manase, G., and Ndamba, J. (2004) 'Patterns of domestic water use in rural areas of Zimbabwe: Gender roles and realities', *Physics and Chemistry of the Earth* 29(1): 1291–4.
- Mommen, B. and Nekesa, J. (2010) 'Connected hand pump mechanics for improved service delivery: A case study of district-based associations of hand pump mechanics in Uganda as a supporting mechanism', in *2010 IRC Symposium: Pumps, Pipes and Promises: Costs Finances and Accountability for Sustainable WASH Services*, The Hague, Netherlands: Concordia Theatre.
- Nimanya, C., Nabunnya, H., Kyeyune, S., and Heijnen, H. (2011) *Uganda: Lessons for Rural Water Supply; Assessing Progress towards Sustainable Service Delivery*, The Hague and Kampala: IRC International Water and Sanitation Centre.
- Otiso, K.M. (2006) *Culture and Customs of Uganda*, Westport, CT: Greenwood Press.
- Plummer, J. and Slaymaker, T. (2007) 'Rethinking governance in water services', Working Paper 284, London: Overseas Development Institute.
- Ribot, J.C. and Peluso, N.L. (2003) 'A theory of access', *Rural Sociology* 68(2): 153–81 <<http://dx.doi.org/10.1111/j.1549-0831.2003.tb00133.x>>.
- Rudaheranwa, N., Bategeka, L. and Banga, M. (2003) 'Beneficiaries of water service delivery in Uganda', Research Series No. 37, Kampala: Economic Policy and Research Centre.
- Rural Water Supply Network (RWSN) (2010) 'Myths of the rural water supply sector', *RWSN Perspectives No. 4*, Geneva: RWSN.
- RWSN (2012) 'Rural Water Supply Network (RWSN) Strategy 2012 to 2014', Geneva: RWSN.
- Socio-Economic Data Centre (2001) *Study of the Operation and Maintenance of Rural Water Facilities in Uganda: Final Consultancy Report*, Kampala: Ministry of Water Lands and Environment, and Directorate of Water Development.
- Sorenson, S.B., Morssink, C., and Campos, P.A. (2011) 'Safe access to safe water in low income countries: Water fetching in current times', *Social Science & Medicine* 72(9): 1522–6.
- Sugita, E.W. (2006) 'Increasing quantity of water: Perspectives from rural households in Uganda', *Water Policy* 8: 529–37.
- Trémolet, S. and Hunt, C. (2006) 'Taking account of the poor in water sector regulation', Working Note No. 11, Washington, DC: World Bank.

- Uganda Bureau of Statistics (UBOS) (2006) *2002 Uganda Population and Housing Census: Analytical Report*, Kampala: UBOS.
- UBOS (2010) *Uganda National Household Survey, 2009/2010: Socio-economic module*, Kampala: UBOS.
- UBOS (2014) *Uganda National Household Survey, 2012/2013*, Kampala: UBOS.
- Uganda Water and Sanitation Network (UWASNET) (2009) *NGO Group Performance in the Ugandan Water and Sanitation Sector: Report for the Financial Year 2008/9*, Kampala: UWASNET.
- United Nations Development Programme (UNDP) (2006) *Beyond Scarcity: Power, Poverty and the Global Water Crisis – Human Development Report 2006*, New York: UNDP.
- WaterAid (2009) *Seen but Not Heard? A Review of the Effectiveness of Gender Approaches in Water and Sanitation*, Nepal: WaterAid.
- World Health Organization (WHO) (2003) *The Right to Water*, Geneva: WHO.
- WHO and United Nations Children's Emergency Fund (UNICEF) (2000) *Global Water Supply and Sanitation Assessment Report*, Geneva: WHO and UNICEF – Joint Monitoring Programme for Water Supply and Sanitation (JMP).
- WHO and UNICEF (2012) *Progress on Sanitation and Drinking Water: 2012 Update*, Geneva: WHO and UNICEF JMP.
- WHO and UNICEF (2013) *Progress on Sanitation and Drinking Water: 2013 Update*, Geneva: WHO and UNICEF JMP.

