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Women and Access to Water in Rural Uganda: A Review

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Introduction

In Uganda, water (or the water sector) is recognized as key in achieving economic growth and development, and maintaining a healthy and economically productive population. Access to water is a prerequisite to improved health, livelihoods and overall well-being of men, women and children, particularly among the poor and agrarian¹ rural populations. Rural communities, comprising an estimated 26 million people or about 85 percent of the entire population of Uganda (UBOS 2010), are faced with higher levels of poverty, dependency, illiteracy and poor health, among other issues. According to the recent National Household Survey, rural communities account for 94.4 percent of the nation's poor households (about 7.1 million persons) and close to a half (48%) of households in the two lowest income classes (UBOS 2010).

The quality of life of rural women is generally worse than that of men. For example, the average income of female-headed households is less than that of male-headed households, while 38 percent of females are either illiterate or have never received any formal education (UBOS 2010, 2012). These problems are compounded by the various forms of gender-based discrimination that women face. As acknowledged in the National Development Plan, "there is discrimination against women in Uganda through traditional rules and practices that explicitly exclude them or give preference to men, and this is a key constraint to women's empowerment and economic progress" (GOU 2010a:31). In fact, despite their crucial roles in agriculture, the major employment sector where they compose 80 percent of the labor force (Mukadasi and Nabalegwa 2007), patriarchal norms and practices limit women's access to resources and services, including land and water, therefore hampering their empowerment (Adoko 1993; Tripp 2004; Ellis, Manuel and Blackden 2006; GOU 2010b).

Although Uganda is considered one of the countries with the best water resources in the world, water is not evenly distributed² (Otiso 2006; Danert and Motts 2009; UBOS 2012). Rural communities have inadequate access to water compared to their urban counterparts, and are characterized by poor water infrastructure that constrains agricultural development (GOU 1999, 2010).

Inadequate access to safe water further exacerbates poverty and increases the occurrence of water-borne diseases, with women being the most affected, again due to limited sources of income, low education levels³, and the demands put upon them as care-givers. (Ellis et al. 2006; Otiso 2006; GOU 2010).

Access to water in Uganda is measured as the amount of water used per person per day, distance from a household to a water source, and technology, particularly "improved"⁴ water technologies such as bore holes and shallow wells fitted with hand pumps. In rural areas, water access is defined as "the ability of households⁵ to use 20 liters of water per person per day from an improved source that is not more than 1.5 kilometers away from their dwelling" (GOU 1999, 2007). Following this definition, access to water in rural Uganda is said to have improved in the past 10 years, but many people remain underserved. The percentage of the population with water access stood at 61.3 percent in 2006, increased to 65 percent in 2009, and currently stands at 64 percent (GOU 2010, 2012), with 7 in 10 households using "improved" water sources (UBOS 2010). According to the Ministry of Water and Environment, the national target of 77 percent access by 2015 will not be met, and Uganda will be a water-stressed country by 2017 (GOU 2007, 2010), all of which will spell more misery for women in rural areas.

As in most households across Sub-Saharan Africa (SSA), gender roles in rural households in Uganda dictate that women perform tasks such as fetching water (many times with female children), cooking food, washing clothes and utensils, cleaning, and child-rearing (e.g., Adoko 1993; Ellis et al. 2006; Otiso 2006; Sugita 2006; GOU 2009, 2010; Water Governance Institute 2009), all of which limit their income opportunities and the ability to pursue other productive activities in their lifetime. As examined in the later sections, women work for several hours during the day, moving long distances to collect water from both "improved" and "unimproved"⁶ water sources, an activity that further consumes their valuable time.

Whereas several factors are thought to be responsible for inadequate access to safe water in rural Uganda, most of the evidence is anecdotal, and is either gender-blind or has not sufficiently singled out the impacts on women. This review examines the determinants of access to water in rural Uganda, with specific reference to the difficulties that women face. Viewing access more broadly as the ability to benefit from (water) resources, whether material or immaterial, including institutions (Ribot and Peluso 2003; Franks and Cleaver 2007), we begin by identifying the major interconnected ways or arrangements under which water is accessed that emerge

¹ The majority being farmers of varying ethnicities/tribes who cultivate mixed crops and rear animals mainly for subsistence; there are also a few nomadic populations in western, eastern and northeastern parts of the country (e.g., UBOS 2010)

² 17.2 percent of Uganda's total land area of 241,550 square kilometers consists of freshwater sources, including large lakes such as Albert, Edward, George and Victoria, and the nation receives an average rainfall of between 700 mm and 2000 mm per year (Otiso 2006).

³ For instance, diarrhea is more prevalent among children whose mothers have low levels of education (UBOS 2011).

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from the literature (Section 2). In Section 3, we describe how water technologies, distance, time and the problems women face in collecting water shape access to this resource, while Section 4 identifies other crucial social mechanisms of access. Section 5 then summarizes the literature on women's access to water in rural locales, and the conclusions of our review.

Major Mechanisms of Access to Water

A starting point in understanding the problems that women in rural Uganda face in accessing water is outlining the determinants, "modes" (Crow 2001, 2007), "mechanisms" (Franks and Cleaver 2007), or arrangements under which water is accessed. We group the mechanisms of access into two categories. In the first group are those factors that are most dominant in water development and policy, and are given priority by key actors⁷; these include water technologies, distance and time. In this section, we also discuss other troubles associated with collecting water (household water use or amounts of water used per capita, as well as bottled water, are beyond the scope of this review). The second group comprises the other social determinants of access to water that emerged, which include formal institutions, payment arrangements (or operation and maintenance fees), and access rights. We explain these mechanisms below, detailing the problems that women face.

Main Development/Policy Determinants of Access

As we indicated in Section 2, most of the development literature on water in rural Uganda centers on three determinants of access: water technologies, distance and time. We discuss how each of these affects women's access to water, as well as other difficulties women face in collecting water.

Water Technologies

Like many countries in SSA, rural domestic water provision in Uganda is based on groundwater sources, mainly through the construction of "improved" water sources such as hand pumps⁸ and protected springs (GOU 1999, 2007; Asingwire 2011). The major "improved" water technologies reported in most studies include:

- i. hand pumps (fitted on deep bore holes or shallow wells),
- ii. spring wells (or protected springs),
- iii. gravitation flow schemes (GFSs) and
- iv. rainwater harvesting technologies⁹.

Household water connections, whether public or private, are very rare, and most communal taps are for GFSs in hilly or mountainous areas, especially in the mid-western and south-western regions (Danert and Motts 2009; Water Governance Institute 2009; GOU 2012). Rural communities also use "unimproved" water sources such as ponds, unprotected wells, streams, wetlands and rivers. According to the 2009/2010 Na-

⁴ Defined by the WHO/UNICEF Joint Monitoring Programme (JMP) for Water and Sanitation as those sources that, by nature of their construction or through active intervention, are protected from outside contamination, especially from fecal matter (WHO and UNICEF 2000)

tional Household Survey, 30.5 percent of rural households rely on "unimproved" sources (UBOS 2010).

Whereas fetching water from both "improved" and "unimproved" water sources allows women to socialize (Water Governance Institute 2009), various factors affect their ability to actually obtain water from those sources. For example, poor siting and construction, "geogenic"¹⁰ factors (such as the presence of low groundwater tables, high levels of mineralisation and subsequent poor water quality), inadequate operation and maintenance, and "technical breakdowns" (Koestler et al. 2010; Asingwire 2011; GOU 2012), *inter-alia*, limit women's use of "improved" water sources.

These factors are also linked to the reduced functionality¹¹ of water sources in rural areas (Socio-Economic Data Centre 2001; GOU 2007, 2009; Ademun 2009; Mommen and Nekesa 2010; RWSN 2010, 2012; Asaba et al. 2013). When hand pumps produce poor quality water, women opt for other alternative sources, such as rain-harvested water. This was the case in rural Amolatar District in mid-northern¹² Uganda, where bore holes were abandoned due to saline water (Asingwire 2011). Another unsafe alternative for women, observed this time in the face of malfunctioning hand pumps, is "unimproved" water sources such as ponds and unprotected wells, which put their lives and those of their children and household members at risk. In her investigation of the challenges women face in domestic water supply in Amuria District in north-eastern Uganda, Ademun (2009) showed how women's use of dirty water from "unimproved" water sources caused waterborne diseases such as dysentery, diarrhea and typhoid, which further increased their burden as caregivers. Ill-health of women or members of their households as a result of using "unimproved" water sources has also been reported in many areas in rural Uganda (Asingwire 2011; Nimanya et al. 2011; GOU 2010b, 2011a). Several studies have also reported that communities (or women) use "unimproved" water sources because of long distances to "improved" sources and the fact that the former are free, while the latter have "high costs" in the form of repair or maintenance fees¹³ (GOU 2002; Kanyesigye et al. 2004; UBOS 2010;

⁵ A household is defined as a group of persons who normally cook, eat and live together irrespective of whether they are related (GOU 2010b).

⁶ Defined by JMP as those that, by nature of their construction or through active intervention, are not protected from outside contamination, especially fecal matter. Examples include unprotected springs, unprotected dug wells and surface water.

⁷ E.g., GOU 2007, 2011a, 2012; UBOS 2010.

⁸ The principal technology for supplying water to about 1 billion people in rural areas in developing countries (RWSN 2010).

⁹ Included here as per the Ugandan definition, unlike in the JMP definition; mainly roof-water harvesting tanks for self-supply, some provided with help of non-governmental organisations (e.g., Carter et al. 2005; Baguma et al. 2010).

¹⁰ Or geological factors that define potentially available water in an area (Coles and Wallace 2005:75).

¹¹ Defined as the "percentage of improved water facilities found functional at the time of spot check", currently estimated at 83 percent (GOU 2012:54), although the true figure may be even lower due to inappropriate rating methods or monitoring tools and systems (Koestler et al. 2010).

Asingwire 2011). Repair and maintenance fees are explored further in Section 4.

Distance

Due to the nature of the water sources or technologies, and perhaps the difficulties related to governance arrangements as discussed in the next Section, labor is required to collect water in most rural communities in Uganda. This labor is provided by women (and sometimes children), who are the traditional water fetchers (Adoko 1993; GOU 1999; Kanyesigye et al. 2004; Otiso 2006; Danert and Motts 2009; DTMC 2009; GOU 2009a; UBOS 2010). In fact, the 2006 Demographic and Health Survey revealed that women collected water in 68 percent of households (UBOS 2006). As seen in most studies in SSA, men seldom collect water in rural Uganda: they only collect it for money, when their wives are sick, or when the “improved” water sources have broken down and the other water sources are too distant for the women (Ademun 2009:16; UBOS 2006; GOU 2009c; UWAS-NET 2009; Asaba et al. 2013). In their case study on the burden of water collection in a rural parish in Central Uganda, Asaba et al. (2013:33) describe how “the few men who collected water did not have children or partners; had sick wives or children; were domestic or construction workers; water vendors; only did it during long droughts when water access became more difficult; or simply did it to earn quick income.”

One of the major hurdles that women face while collecting water is distance. Following their assessment of the Water and Sanitation Sector Gender Strategy that covered seven districts, DTMC (2009:18) acknowledged that “most women and children in Uganda are still burdened with long distances to water sources.” While recent statistics indicate that members of rural households travel an average of 0.8 km to their main sources of drinking water (UBOS 2010), many women travel even greater distances, which significantly impacts their domestic workload. Studying the water-collection behavior of households in a rural sub-county in Mbale District in mid-eastern Uganda, Sugita (2006) reported that women travelled an average distance of 1.2 km to water sources. Other studies have demonstrated that women travel even further (Rudaheerwa et al. 2003; UBOS 2005; GOU 2008; Ademun 2009; Danert and Motts 2009; DMTC 2009; Kanyesigye et al. 2004; GOU 2011a). Danert and Motts(2009), for example, observed that in parts of Sembabule and Isingiro Districts in Central and South-Western Uganda respectively, women and children walked 5 km (one-way) to their nearest water source. In some households, the burden of collecting water is transferred from women to children, especially girls, who also miss school or arrive late because they must fetch water first (Rudaheerwa et al. 2003; UBOS 2006; Asaba et al. 2013). The same studies confirm that when “improved” water sources are not functioning well or are poorly maintained, women are most affected, as they have to move to yet-more-distant alternative sources, which consumes a lot of their time. We now examine the time expended by women in collecting water.

Time

Research shows that rural communities spend a lot of valuable time collecting water, and that this is related to the water source they use — its reliability, distance, and the necessity of queuing to obtain water from it. Rural communities spend an average of 29 minutes waiting for water (or queuing) at their main water sources (UBOS 2010); however, in some areas, the wait time can be several hours. Queuing is usually due to poor water flow from the sources (mainly due to seasonal changes that precipitate changes in groundwater levels), and over-use of the water points (e.g., Danert and Motts 2009; Asaba et al. 2013). Again, in such cases, it is women (and children), the water fetchers, who spend more time during the day waiting for water, in addition to performing other household tasks. A study in Amuria District showed that women waited for up to 2 hours at “improved” water sources before they could draw water (Ademun 2009). Asaba et al. (2013) also describe how women and children spent between two and six hours queuing for water at protected springs during the long dry season. Similar delays and long waiting periods have been reported in other studies (Rudaheerwa et al. 2003; GOU 2011a; UN-Water and WWAP 2006). Apart from distance and time, there are other burdens that women face while collecting water, which are explored in the next section.

Other Constraints of Water Collection

Apart from the poor technologies, long distances and extensive time taken while fetching water, women in rural Uganda also have to contend with other associated difficulties, many of which seem to be less understood in the literature regarding access to water in developing communities. These include poor environmental conditions, health problems and violence.

Environmental Conditions

Few studies have reported on the environmental conditions (other than the “geogenic” or geological factors already discussed) that affect women’s access to water in rural Uganda. However, some studies have identified bad terrain, or poor roads and paths (Danert and Motts 2009; Water Governance Institute 2009; Asaba et al. 2013). Asaba et al. (2013), for example, reported how women (and children) in rural Makondo Parish used “hilly bushy and slippery” roads and paths which made water carrying (mainly of 20-liter jerry cans) even more burdensome for women.

Health Problems

Women have been reported to suffer from health complications as a result of carrying heavy water loads. For instance, researching the potential for promoting domestic rainwater-harvesting production and distribution chains on a commercial basis in seven districts. Danert and Morris (2009) noted that

¹²This and other regions/sub-regions indicated in the paper are based on latest divisions (UBOS 2012:xvi).

¹³Such costs are associated with the Community-based Management System (CBMS), which emphasises community responsibility in operation and maintenance of “improved” water sources at the village level — see GOU 2007.

“the physical burden of carrying water over long distances can also lead to curved spines, pelvic deformations, and numerous other injuries in women and children.” Asaba et al. (2013) also described how women’s carrying of water by hand led to complications such as chest pain, headache, muscle aches, and sometimes nosebleeds. Women’s use of technologies such as bicycles is restricted, yet it can reduce the burden of carrying heavy water loads by hand and also increase the amount of water used in rural households. A study in Mbale District reported that although women’s use of bicycles was not a taboo, they (and girls) used bicycles on “just 3.1 percent of their trips” (Sugita 2006).

Gender-based Violence

A few incidences of gender-based violence have been reported in studies on access to water in rural communities, particularly water collection. For example, Asaba et al. (2013) described how women in rural Makondo Parish felt threatened by the possibility of rape, and some girl children were in fact reportedly raped while fetching water from “unimproved” water sources. Similarly, Ademun (2009) showed that, in Amuria District, spending a lot of time at water points led to gender-based violence, as women were abused and battered by their husbands because of “staying out of their homes for too long queuing at the water sources.”

Additional Social Mechanisms of Access

Whereas water sources and technologies, distance, and time are key determinants of access to water, there are other related factors that have been reported in rural Uganda. As in most developing countries, rural water technologies have particular arrangements and social and institutional resources that govern their use, all of which impact women in various ways. These could be formal or informal; we focus on the former type due to its importance in safe water delivery, as elucidated below.

Formal institutions

Water technologies, especially “improved” water sources, are associated with institutions such as Water User Committees (WUCs)¹⁴, as provided under the CBMS and in water policies. WUCs are designated for each “improved” water source, and are supposed to be made up of democratically elected members from within the local community or village, 50 percent of whom should be women¹⁵. Various studies in developing communities (e.g., Ebato and van Koppen 2005; CAP-NET and GWA 2006) have shown that the participation of women in such local decision-making institutions improves the sustainability of water governance and functionality of water technologies, thereby improving women’s access to water.

However, the participation of women in rural WUCs is minimal. The statistics show that the number of WUCs with women

¹⁴ Responsible for organizing the community for orderly water-resource use, cleaning surroundings, undertaking minor service (and repairs), protecting the water catchment area, and collecting the O&M funds.

holding key positions has been declining since 2009. In 2009, 85 percent of WUCs in rural areas had women holding key positions, a number which decreased to 81 percent in 2010 before dropping to 75 percent in 2011 (GOU 2009b, 2010, 2011b). Most studies also report that key positions such as Chairperson, Vice Chairperson and Secretary are dominated by men (e.g., Ademun 2009; Asingwire 2011; MWE 2011a). Women’s decreased representation in WUCs negatively impacts the functionality of “improved” water sources in rural communities. For example, in his assessment of the effectiveness of the community-based maintenance system for rural water supply facilities in 16 districts representing different regions of Uganda, Asingwire (2011) concluded that “all WUCs chaired by women were found presiding over functional sources at the time of the visit; all the non-functional water sources were under the stewardship of men as chairs.” This indicates that a higher level of female membership on WUCs translates into greater functionality of the “improved” water sources, leading to increased access to water for women (and children), as it spares them the inconvenience of either traveling longer distances to fetch safe water or using unsafe water sources, as discussed in Section 3.

Another point to note here is that despite their limited participation in WUCs, women actively engage in various forms of “indirect labor” — such as mobilizing funds for operation and maintenance (Coles and Wallace 2005) — and “direct labor” — such as cleaning of water sources (e.g., Ademun 2009) — that are important for proper hygiene and sanitation.

Women’s underrepresentation in WUCs is largely due to gender norms, stereotypes, disrespect, and individual factors. For example, women’s “triple roles,” and the fact that they do not have adequate time to participate effectively in WUC meetings and trainings due to heavy domestic workloads, have been documented in many studies in rural Uganda (e.g., Rudaheranwa et al. 2003; Ademun 2009; Asiimwe 2009; CREAM 2009; DTMC 2009; UBOS 2010). Nimanya et al. (2011:16) also expand on these gender norms, citing patriarchal cultures that result in men in rural communities “not taking women very seriously.” An example of disrespect for women in the same communities that elected them to WUCs was provided by Asingwire (2011:32), who noted that “women tend to be disrespected, and their efforts to enforce the agreed-on by-laws such as not washing from the water source or not using dirty jerry cans to draw water are often ignored, not only by men who collect water, but in some instances by children as well.” Individual factors that limit women’s participation in WUCs include illiteracy (positions on water institutions require some degree of literacy, yet most women are illiterate); limited skills; and low self-confidence due, for example, to “limited exposure”, resulting in an un-willingness to take up leadership

¹⁵. The main positions on these committees include: Chairperson, Vice chairperson, Secretary, Treasurer, Caretaker, Publicity/Information Secretary, and Advisor (GOU 1999, 2007).

¹⁶ Usually between \$1.2 and 2 per household (at the current exchange rate of US \$1=UGX 2,500), sometimes subsidised by government or NGOs.



Photo credit: Kelly Shearon

positions (DMTC 2009; GOU 2011a; Nimanya et al. 2011). Women also have to contend with difficulties related to the maintenance and operation of water sources, as examined in the next section.

Payment Arrangements

In most rural settings, and as part of CBMS, rural households in Uganda are required to pay monthly operation and maintenance or repair fees. These are meant to ensure that if for example, pumps break down, communities have the funds to repair them and continue to access the water sources. Women's access to water is certainly affected by the ability of communities to pay these fees. Studies show that communities demonstrate ability and willingness to contribute, either in-kind (through labor, construction materials or food items for the workers) or in cash or funds, for construction¹⁶ and minor repairs of the "improved" water sources (ranging from 200 to 500 Uganda Shillings¹⁷). These contributions are collected in monthly to half-yearly periods (CREAM 2009; Asingwire 2011; GOU 2012). Unfortunately, many rural communities do not pay the maintenance and repair fees. Studies have observed that this occurs because of poor accountability by WUC members, mistrust of WUCs, low incomes or "costly repairs" that rural communities cannot afford, "stubbornness" or unwillingness to pay, and in some cases the argument that local taxation should suffice for all the repairs (Kanyesigye et al. 2004; Asiimwe 2009;

CREAM 2009; GOU 2009; Nimanya et al. 2011). Household use of "unimproved" water sources as alternatives when "improved" sources break down, particularly because the former do not require payment of repair fees, has also contributed to communities' reluctance to pay operation and maintenance fees (Asingwire 2011), while others only pay when they know that the water source has broken down. For instance, a study by SNV and NETWAS in the north-eastern District of Kumi and the mid-eastern Districts of Mbale and Kapchorwa noted that water users "only paid operation and maintenance fees whenever their water points broke down" (GOU 2009a). While most of these studies do not highlight the gender issues in payment of the fees, it is apparent that the failure to pay leads to delayed repairs of "improved" water sources, their temporary closure, continued malfunctioning, or use of "unimproved" water sources, all of which culminate in women not only being less able to acquire safe water but also increasing the difficulties they face in performing their household water-management roles.

Access Rights and Entitlements

Women (and men and children) in most communities are expected to draw water from both "improved" and "unimproved" water sources, as they are considered communal. However, formal and informal entitlements limit women's access to water, through denial of access to "improved" water sources for households that default on operation and maintenance fees.

Although the few studies on access rights in rural Uganda have not explicitly highlighted the issues that affect women, they outline the causes. For example, when researching how improvements in planning, monitoring and evaluation in rural local governments could potentially improve the efficiency and effectiveness of rural water service delivery in Tororo and Wakiso Districts in mid-eastern and Central Uganda, Kanyesigye et al. (2004) described how community members (in essence, women and children who collect water) were denied physical access to pumps in order to "put pressure" on households that were deemed able to pay but refused to do so. The same authors observed that vulnerable community members, such as the elderly and the disabled, were exempted from paying repair fees, as stipulated in water policies¹⁸. However, evidence of such exemptions for very poor and widowed women, for example, is limited, meaning such women might continue to be denied access to water due to non-payment. As observed in some studies, some WUC by-laws provided women and vulnerable groups with rights of access, but these were not implemented in most cases due to the WUCs being inactive and to poor cooperation from local councilors (Kanyesigye et al. 2004; GOU 2009a; Asingwire 2011).

¹⁷ \$0.08 to \$0.20.

¹⁸ E.g., GOU 1999, 2007

Water collection is also affected by illegal or forceful acts, such as thefts — especially of hand pump spare parts, which may be easily stolen as the long distances between the pumps and households in rural communities make it difficult for the WUC members to monitor them — and vandalisms (e.g., Kanyesigye et al. 2004; Asingwire 2011). Kanyesigye et al. (2004) in particular noted that thefts of spare parts in Masulita in Wakiso District occurred because of “shallow wells being located far away from households.” Whenever thefts and vandalisms occur, the water sources do not function well and/or take even longer to be repaired; this limits women’s ability to collect water, and they often have to travel long distances to alternative sources, as discussed in Section 3.

Other Mechanisms of Access

A number of other factors affect women’s access to water in rural Uganda, many of which are ordered around or interconnected with the formal (and informal) institutions, payment arrangements, and rights and entitlements discussed in the previous sub-sections. For example, some studies have demonstrated that the failure of communities to raise fees for the operation and management of hand pumps is due to inadequate supply chains or a lack of private-sector involvement, which could otherwise increase the availability of pump spare parts and hasten repairs by mechanics (YODEO 2007; Koestler et al. 2010; Mommen and Nekesa 2010), hence increasing women’s access to water.

Another related issue reported in most of the literature is the failure of district actors or communities themselves to access trained technicians, such as Hand Pump Mechanics (HPMs) (Asingwire 2011; CREAM 2009; Kanyesigye et al. 2004; Nimanya et al. 2011; Socio-Economic Data Centre 2001), who are responsible for undertaking repairs of improved water sources in rural communities. These studies also show that the presence and efficiency of HPMs increases functionality of “improved” water sources, thereby creating better access for women. Regrettably, while the “development decade” and the more current “water decade” have emphasized training of female technicians (such as HPMs) and health educators, among others, most of the technicians and local trainees or beneficiaries in rural Uganda are males.

To illustrate this, Asingwire (2011) noted that the majority of the available “improved” water-source technicians¹⁹ in 16 Districts were males (96.8 percent), compared with only three (3.2 percent) females, two of whom were from Nebbi District and one from Isingiro, in West Nile and south-western Uganda respectively. Another study reported that of the 70 HPMs who were trained and equipped with personal toolkits and repair boxes in Kiboga District in central Uganda²⁰, only 11 were women (GOU 2011a). Some of the little training that women have received has been on rainwater harvesting technologies, such as ferro-cement tank design for the purpose of improving access to harvested rainwater. For example, Danert and Motts

(2009) showed how a women’s group in Rakai District in Central Uganda was the first to be trained in the construction of domestic rainwater tanks in the late 1990s, while Payne et al. (2008) reported that 22 women were trained as masons, and another 24 received similar training by Kigezi Diocese in Kabale District in South-Western Uganda (GOU 2009b). A few women have also benefited from training on less technical subjects such as water use, hygiene and sanitation, including 102 women’s groups that were trained by various NGOs in the water sector (UWASNET 2009).

A major reason why there are few female water technicians in rural Uganda is the patriarchal culture, such as the societal view that husbands maintain control of their wives and the stereotypical perception that water technicians should be males. As noted in the National Framework for the Operation and Management of Rural Water Supplies, husbands of women who are trained as HPMs or GFS attendants, for example, “are reluctant to let them do this work as it involves them spending a lot of time out of home in the company of men in isolated areas” and that “the tool kits are heavy and many of the tasks require enormous energy that women may lack” (GOU 2011a:18).

Poor access to water by rural communities (especially women) has also been blamed on the work of some key water actors such as District Water Officers and Sub County Officials, many of whom are men (DTMC 2009; GOU 2009a). Although we do not discuss these actors in much detail in this review, Kanyesigye et al. (2004) and Asingwire (2011) discuss how problems such as inadequate funding affect the implementation of routine capacity-building, training, and other “soft ware²¹” activities, yet these actions are essential for the increased functionality of water sources.

Conclusion

While it is clear that women are most affected by inadequate access to safe water in rural Uganda, most of the literature addresses only “improved” water technologies, distance and time. The determinants of access to water are interconnected, and social structures such as formal and informal institutions, payment arrangements, supply chains and rights are water-governance issues, yet most studies do not explain how they disadvantage women. However, some of the literature describes how women’s access to water is affected by their low social status, patriarchal cultures, poor living conditions, insufficient access to money, and reliance on men for payment of fees for “improved” water sources.

¹⁹ Including HPMs, plumbers, Gravity Flow Scheme Attendants (GFSAs) and masons.

²⁰ By Japan International Cooperation Agency (JICA).

²¹ E.g., supporting, sensitizing and monitoring WUCs in villages

We conclude that whereas considerable work has been done on access to water in rural Uganda, not much is known about gender relations and the obstacles that women face. More contextual research is needed to elucidate the less understood aspects of access to water and how they impact women, particularly the conditions and processes other than distance and time that influence water collection; the use of water technologies such as "unimproved" and "improved" water sources; local institutional arrangements, particularly of WUCs and HPMS; gender dynamics of payment arrangements (especially repair fees); and both formal and informal water rights.

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