

Addressing women's needs in water access for economic use: the case of Wukro town, Ethiopia

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In urban areas where water is not adequately supplied, women's efforts to make a living out of water-intensive businesses face many challenges. The study examined how small-scale businesses run by women in Wukro town, Ethiopia are impacted by inadequate supply of water, and what coping strategies are employed. The lived experiences of women involved in small-scale water-intensive businesses, such as traditional beer brewing and coffee shops, were examined. In addition to these women, the perspectives and experiences of selected key informants as well as the officers at the local water utility have been assessed. Whether or not these women secure support from the social networks in their neighbourhood has also been considered. The study revealed that the unreliable supply of water in the town has impacted women involved in small business. It was indicated that some women manage to do well either by borrowing water from neighbours or purchasing from providers. In contrast, others who run businesses in rented houses with limited social networks expressed that they are struggling. Suggestions are made for the water utility to revise its working guidelines related to the provision of water services and to implement a gendered perspective in water management practices.

Keywords: urban, water access, social networking, women, small-scale business, Wukro

WITH THE RAPID EXPANSION OF CITIES and ever-growing number of residents, governments in less developed countries are able to provide access to piped water to only 27 per cent of the population (UN-Water, 2010). As a result many of these residents experience water deprivation and inequality (UN-Water, 2010). A number of theoretical advances have been developed to explain water-related inequalities in the less developed world, some of them inspired by feminist thinking that focuses on the sociocultural causes of water shortage and how residents manage to survive amid these challenges (Swyngedouw et al., 2002; Swyngedouw, 2004; Elmhirst, 2011; Truelove, 2011).

One of these is urban political ecology that states that urban centres experience distributional inequalities mainly due to the social power relations that influence

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existing class structures (Swyngedouw et al., 2002; Heinen, 2014). It states that environment is the product of the ecology and the social experience of social groups in any given space. The implication is that the social relations of power and the natural environment where the water is supplied should be considered to fully understand the experiences. This is essential as changes in the environment influence existing class and gender relations, which in turn makes access to water dependent on positions of social power (Swyngedouw, 2004). It is this interplay of social powers that influences the distributional inequalities.

Urban political ecology is however criticized for failing to fully address why social inequality continues to be observed in urban areas even when water quantities and access points are improved (Truelove, 2011). Observations in urban areas of poor countries also revealed that more women than men lose income because of time spent waiting for water (e.g. Wutich, 2009). Thus, as opposed to urban political ecology, feminist political ecology considers gender as the focus of analysis to examine how socio-political forces influence access to and control over resources (Elmhirst, 2011).

In a study that was inspired by the proposition in feminist political ecology, Truelove (2011) argued that water-related experiences in cities are complex and difficult to explain unless the intertwined power relations that lead to inequalities are addressed.

She advocates for the study of everyday gendered water practices, rather than collecting data on city level distributional inequalities to challenge the social norms and disparities in access. The use of feminist political ecology as a framework is also justified as water scarcity in urban areas remains of less interest among decision makers, mainly men, since they do not feel the suffering women experience (Zwarteveen, 2008; Chipeta, 2009).

The demand for potable water in sub-Saharan Africa is not commensurate with the ever-increasing population and rapid rate of urbanization. The problem is believed to be serious in urban centres where existing water supply is already inadequate (Dos Santos et al., 2017). To make matters worse, there are distributional inequalities owing to existing social power relations among residents (Loftus, 2009; Hazell, 2010; Das, 2017), and this is believed to influence the poor who rely on an adequate supply of water for income-generating activities. Women comprise the majority of the poor and they take a bigger responsibility in managing water resources (Soussan, 2004). Water-related tasks are assigned to women, while most water-related powers and rights, such as planning and administration, are assigned to men (Zwarteveen, 2008). Thus, it is not the physical availability of water per se that determines women's access to water; the sociocultural factors associated with it are equally, if not more important.

Access to clean and adequate water is essential for women and girls to achieve sustainable development since they use water both for productive and reproductive activities. Attempts made to solve water-related problems have not been addressing the particular challenges experienced by the disadvantaged groups in urban centres, as city-based statistics on water access have been obscuring the existing social conditions and gender relations. Experiences in some countries revealed that gender issues are either overlooked or not entirely considered in the management of water in areas where water is scarce.

It is therefore mandatory to evaluate the effectiveness of water governance mechanisms in terms of the gendered outcomes, expressed in changes in the allocation of the resource (Franks and Cleaver, 2007; Cleaver and Hamada, 2010). However, other observations revealed that local authorities do not know much about water use, consequently any measures they introduce may not address the problem of water shortage and inequality experienced by these groups (Lahiri-Dutt, 2015). Instead the 'commodification rather than its social necessity' is given much weight in the distribution of water (e.g. Fonjong and Ngekwi, 2014).

Many young migrants who made it to the cities in search of a better life are not able to make use of the services. For example, those who depend on water to do business are influenced by the regular interruptions and are forced to buy water at a very high price to run their business (Amankwaa et al., 2014). In addition, because of lack of adequate water at the household level, many families resort to alternative sources which are usually unhygienic. This in turn results in the loss of productive time, money, or even sickness and associated treatment costs (Pahwaringira et al., 2017).

The burden of queuing for many hours at water points, which is believed to impact women's engagement in income-generating activities (Oman and Rumila, 2007) is not addressed as a particular challenge that women experience. Studies indicate that better access to water and sanitation has led to improvements in the wealth and livelihood of women (e.g. Mulenga et al., 2017). What is more, water-related inequalities are even more pronounced when women depend on water to generate income since better improvements in income have been reported when water is easily available at home (Van Houweling et al., 2012).

In some cases, the landlord-tenant relationship also adds more challenges into the drudgery experienced by the poor. For instance, a study conducted in Accra (Ghana) indicated that not only do the landlords in some places control the daily supply of water in their premises, they even decide on the mode of payment and charge much more than the actual price. Still others collect payments without showing the water bills to the tenants (Amankwaa et al., 2014).

The strength of the social networking in a given locality has been indicated as a means of assisting people to help one another in times of difficulty. For instance, social networks in any given neighborhood influence how people interact as well as share resources (Agrawal, 2001; Shnegg, 2018; Shrestha et al., 2018). Lending or borrowing water among neighbours is one good example of how people in a given locality share resources in times of inadequate supply. Sharing resources among community members has also been mentioned by Shnegg (2018) as a way of reducing costs, which would have been either more expensive or not enough. Similarly, the application of local norms and negotiated solutions to problems and conflicts that arise because of water shortage has been discussed in a study conducted in Nepal by Shrestha et al. (2018) as a way of mitigating shortages. This refers to conducting a community-based discussion focusing on the shared norms about the inappropriateness of denying people access to shared resources such as water.

The Ethiopian Ministry of Water Resources has, since 1999, adopted a national water resource management policy with an overall goal of ensuring efficient and

equitable water resource use (FDRE, 2002). However, reports show that not much is done by small town water service providers with regard to the provision of water to the poor. Of course, Wukro has been mentioned, among others, as exemplary in providing 'shared yard connections' as a way of helping the urban poor living in the same compound to have a common connection and share the cost (Adank et al., 2018). These connections are nonetheless limited in number and the gendered impact of such provision was not thoroughly investigated. What is more, with regard to addressing gender in water, the Regional Water Bureau reports involving women in the planning and implementation of water-related projects. However, addressing the gendered dimension of water is understood as including women as members of water committees and the practice is mainly exercised in rural areas.

This study addressed competing interests in water use for domestic and income-generating purposes and the impact among marginalized groups. More specifically, it investigated how access to water influences the multiple use of water, both for household consumption as well as for income-generating activities among women involved in small-scale business enterprises. The study also examined the impact of social networks within the community on ease of access to water among small business owners in Wukro, Ethiopia.

Study area and methodology

The study was conducted in Wukro town, located at latitude: 13° 47' 59.99" N and longitude: 39° 35' 59.99" E, 40 km north of the regional capital, Mekelle in Ethiopia. Wukro is one of the towns in the Tigray region where there is an inadequate supply of water. The region in general is characterized as 'drought prone' due to the limited rainfall and intermittent drought (Hadgu et al., 2013). Nearly half of the districts are categorized as high drought risk areas (Tefera et al., 2019). As a result, many towns face challenges of supplying adequate potable water to the ever-growing population.

Although Wukro, with a population of more than 52,000, is one of the fastest growing towns, the water supply is not adequate to satisfy the ever-growing demand both for the booming construction industry and the growing population. The average amount of water sold is estimated to be 30 litres per person per day (ONEWASH, 2016). However, the impact of the recent expansion and subsequent shortage of water especially for women who make use of water for productive and reproductive purposes is not thoroughly investigated. Thus, the study addressed the following: How are gendered and socio-economic roles articulated in the governance of the town's waterscape? How accessible, affordable, and reliable is water for household use and for income-generating activities? How do social structures affect people's efforts to cope with water insufficiency? What role do landlord-tenant relations play in securing adequate water?

Data sources

Most of the informants live in the old part of the town where house rents are relatively cheaper. Even those who do business in their own property also live around this

area as customers frequent these places. Hence, businesses run in water scarce areas and those in relatively better localities have been considered. From both localities, 47 traditional beer makers (known as '*suwa*' in Tigrigna, the local language), 12 coffee shop owners, and nine hair salon owners were contacted.

Observations and in-depth interviews were made with the mainly women business owners as well as with key informants such as officers in the water utility and local elders. For this purpose, a qualitative research approach was employed. These women may have similar social positions but their success in the business is influenced by the different trajectories they experience in their daily lives. The narratives of their lived experiences were thematically analysed, as they are valuable in explaining existing social relations (Somers, 1994). Field researchers also examined the experiences and the perceptions of officers in charge of providing water to the community.

Procedures

Field researchers read the consent form presented by the School of Geography and the Environment, Oxford University and translated into the local language before starting the semi-structured and in-depth interviews. The study has also undergone ethical review by the Central University Research Ethics Committee of Oxford (reference number SGGE 18A 190). The interviews and discussions were conducted once the informants gave their consent. The data collected consisted of transcriptions of interviews and field notes from observations. During the study, field researchers reviewed the interview guide throughout the research process following feedback sessions provided after conducting interviews and field visits.

In conjunction with the interviews, field researchers also visited the small business owners' houses to enjoy the services provided and observed how shortage of water impacts their business. When explanation was required, the field researchers asked the owners for additional information/clarification and they also considered the experiences of other passers-by. What is more, it was a common exercise among the field researchers to regularly add memos while listening to taped interviews and typing transcripts. In addition, as the field studies were conducted during the rainy season (June – August) and dry season (December – March), ongoing data analysis had been conducted throughout the study.

Results

Experiences with water access for business

It became evident from the interviews held with women involved in small businesses that there is a problem of equity in water access and supply in Wukro, with some locations having minimal water scarcities while others are disadvantaged by having to pay additional money for water purchase. Generally, availability of water for business is characterized by informants as inadequate, with some of them attributing the interruptions to sabotages or mismanagement. Besides, major pipes that supply water to the town may also be broken due to fluctuating water pressure.

Whatever the cause, the greatest difficulty emanates from the fact that piped water in some places is not supplied for an extended time. Holidays are times when women with small businesses benefit most, whether it is hair dressing, coffee, or traditional beer shops. The unpredictable and unreliable access to water in many of the neighbourhoods means the women can only work under capacity even if there are floods of customers for such services. Surprisingly, there might be excess water when businesses are not running well. Thus, the low supply of water is an obstacle to enhanced income earning. Some of these women reported that they are willing to work all day long if customers keep flowing but water shortages stand in their way and prevent this from happening.

A woman brewing traditional beer may be open three days a week or more and may need between 25 and 30 jerry cans of water per week including the amount needed for drinking, washing, cooking, and other domestic purposes, of which up to a quarter is used for business purposes. The price of a jerry can of water (20–25 litres) may vary between birr 2 and 2.5 (approximately US\$0.08).

Purchase of tap water from other areas is often the only option women with small business enterprises are left with but many informants stated that it is expensive to transport. They often carry water containers themselves or hire a donkey cart or a three wheeled vehicle to transport them from distant places. Some of them travel long distances besides the physical efforts needed to do the usual work of hair dressing or traditional beer brewing and serving activities. Asked if businesses are permanently closed due to shortage or scarcity of water, respondents asserted that this is not the case. It was noted that small businesses become unsuccessful and may close down once and for all due to other more pressing factors such as increase in the price of cereals, house rent, or firewood rather than water scarcity per se.

The women interviewed stated that there is seasonal variability in access to water, with better water access during the rainy season. However, they still depend on tap water, as rain water is used only for cooking and washing, not for preparing the traditional beer. So when there is no water in their premises, many women either carry tap water from other places on a purchase or loan basis; or they just hire people to deal with it. During the long dry season, some of these women use other unsafe sources of water such as the river to cater for other domestic demands.

Shortage in water supply in some places has to do with the timing of water rationing. According to some interviewees, piped water is available for a brief time often after midnight when everyone is asleep. By the time people wake up, the water is gone.

An informant had the following to say in relation to the timing:

Pipe[d] water is sometimes like an adulterer or a burglar who comes home at midnight. We connect the tap with our containers through a plastic pipe and patiently wait throughout the night. When we hear the sounds of water-drops we get up and ready more containers to fill before we get back to bed again.

The schedule is even more challenging for women who do business in rented houses as the landlords live in other towns and show little motivation to regularly open the tap. Some interviewees cited that during severe scarcity, households go to the point

of using bottled water to cook food. Households do try to store available water in bigger plastic jars to use it when scarcity strikes; the problem is the containers that are used to store water are usually small in size, and water is drained in a matter of a few days. The maximum they could afford was a container which can store 80–120 litres. This is negligible compared with the containers used by rich people that can store up to 2,000 litres. A much smaller container that one needs to store water enough for a few days costs over birr 1,200 (approximately \$40), which is still unaffordable for many of the poor women.

Another challenge for women engaged in small businesses is to do with the water bills. Households are often in constant worries about the monthly payments, as the bills can be higher than anticipated. An average of birr 50 or more may be paid per person per month for the intermittent supply of water which often raises issues of fairness. Most women are not so well educated and do not know the calculations on the price of piped water. They are just expected to pay the bills when they are asked to, and the pricing decision rests within the discretion of the water utility.

Some of the residents feel that water pricing and the prioritization of the supply of water to different areas of the town are often pursued in a non-transparent manner. A woman interviewee who rented a house said that although there was a breakdown for quite a long time and they had no water, she and her neighbour who share the same meter were surprised to be asked to pay birr 700.00 (\$25). Although they presented an appeal to the utility, they have been told that the bill reads what they have consumed.

Others, in contrast, are more concerned with the unavailability of water rather than the cost. There has in fact been an increase in the price recently but people did not complain about it. They compare the new tariff with what they normally pay to private providers. For example, a particular informant stated the following:

When the water utility sets the tariff, it considers the conditions of poor people in the town; private water vendors, on the other hand, never cared for us. In fact, when water is very scarce they often increased the prices as they wish because they know we have no option but pay whatever they ask. They cared little about us because they are only driven by the profit motive. There was a time when we had to pay birr 10 for a jerry can of water. They increase the price three to six fold as they pleased. The water traders have no hearts and poor us, we fall prey to their manipulative behaviour because water is life.

Apart from the cost, some women business owners often had to wander around in search of water and travel some distances themselves to fetch it. They spend their precious time looking for water and when so doing their businesses are closed, resulting in loss of income. Some informants report that they sometimes had to carry big containers on their back and travel long distances. One informant stated the following:

I live in a location [within Wukro] where the supply of pipe[d] water is very scarce. I have a husband and three underage kids who do not help much in fetching water because my husband is busy with other income earning activities and has little time to spare to assist in domestic affairs. Even if he wants to help, I would not allow him to

deal with such petty things which I myself can handle. So, I travel back and forth to all possible water sources which ultimately led to my illness. One day, I felt severe pain on my back and went to a doctor who told me that there was a bone fracture which cost me a lot of money. The doctor advised me not to venture such things anymore; now, I feel better and decided to pay for transportation rather than risk my life.

Social networking and water access

What has become exceptionally evident is how connectedness of households to the social setup can affect their access to water during shortages. Borrowing water in the sense of a loan/credit is not culturally acceptable. However there is a sense of reciprocity reflected in the social and economic support networks especially among friends, neighbours, and relatives. It is customary to 'beg for water' or borrow water during urgent need without having to pay for it or give back the same amount of water during good times. This is part of the pattern of social and economic exchange that governs relations among people in close circles. A woman expressed how such a relationship in her locality enables her to cope with water shortage: 'My source of water is buying or borrowing from my neighbours whenever it is available there. When there is a breakdown I fetch (carry) from a far distance. Asking/borrowing for water is a normal trend between neighbours'. Asking or rendering support is common among those who have a stable network. These women can rely on neighbours' help in borrowing water, as one of them can notify the other of water shortages and can help in collecting water for their domestic needs. However, whether or not these social norms are implemented depends on the location of the business; that is, when it is located amid similar businesses, the likelihood of mutual help is smaller. 'There is not such trend nowadays; it was there back in the days. Even if we ask, no one would dare to give us' says a woman who lives in a neighbourhood where there are similar traditional beer houses. In the new parts of the town, newly arriving households are not very well linked up socially both to one another and to older settlements in the neighbourhood, making borrowing of water from neighbours difficult for them. One informant said the following:

I don't have my own house; I keep on moving to different places in Wukro especially when house rent suddenly increase. In the new places, it is not easy to cope with water shortages until you make friends who can share resources when there is a dire need. I sometimes prefer buying water to asking neighbours because I don't know them and I feel ashamed to ask for help from perfect strangers.

Selling water as source of income

One of the working regulations at the water utility office is the prohibition of selling water by private vendors. The justification is that the water utility has the sole authority to sell water. In areas where there is shortage of supply, the same office provides water using water tankers, although, in some cases residents reported that they got no water for nearly three months. In practice, however, many people sell water, as it is common to see queues of water containers in

front of kiosks or premises. Selling water as a source of income is limited for women who do business from rented houses because they are afraid of criticism and possible sanctions from owners. Hence, they refrain from selling water even when it is abundantly available and miss the opportunity of getting additional income. Although renting out houses/land ideally means occupants can make full use of resources on the land, the regulatory control from actual owners/landlords has a deterrent effect on selling water. Those that do business on their own land therefore have multifaceted advantages not only in terms of not having to pay for the land they operate on but also in terms of avoiding insecurity resulting from piped water use for commercial purposes.

The guidelines and the practice at the water utility office

According to an officer at the water utility the daily demand for water in the town is 3,141 m³ but the existing boreholes, including the newly erected system, can only provide 1,493 m³ of water; that is less than half (47.5 per cent) of the actual demand required on a daily basis. Worse, an average of 19 per cent of the total provided is wasted for various reasons. As part of mitigating the problems the utility has been implementing various schemes, such as water rationing as well as limiting the amount of water people can store at a time. The office has also clearly stated in its working guideline that storing water beyond the set limit (5 m³ for residential areas and 10 m³ for business firms) is not allowed. Hotels and other big businesses are entitled to more water access and can even store more at a time than residential areas.

The officer reported that although selling water by private providers is not allowed, the regulation is not put into effect, as the office cannot provide adequate water. Instead, serious follow ups are made so that the private providers will not impose higher charges. The officer also reported that a new water tariff has been put in place over the last six months and customers did not complain about the increased rate. Residents, he stated, are more concerned with the lack of adequate water.

Construction sites need huge amounts of water to sprinkle on the newly emerging buildings. Asked if the utility office has noted whether the supply of treated water for construction works is exacerbating water shortage, the officer, cognizant of its impact, replied the office is considering other options. With the construction boom in Wukro, a lot of water is being consumed both for block making and for building purposes. The office plans to deny the supply of new lines to construction sites until they are completed. Instead, previously dug water sources found to be salty and not being used for household consumption will be supplied for construction purposes.

Discussion

Wukro town is growing fast and the population has also dramatically expanded over the past few years. Providing adequate services to an ever-increasing population is becoming a formidable task for the authorities. Water shortages and irregularities of

supply have been sources of pronounced anxiety in some areas of the town. Some residents have developed stringent adaptive measures and are able to cope with the shortage, while others struggle to survive. In times of severe shortage, the water utility office distributes water free of charge to ease the tension. The problem with this is that it is not well orchestrated and only those who have bigger containers benefit from the intervention, making it less sensitive to the needs of the otherwise disenfranchised poor. It is also intermittent and may not be in line with the business schedules of these women.

Water storage devices have been in use for a long time and people count on existing social support networks to ensure continued access. Women business owners get water from neighbours and relatives free of cost as part of the day-to-day social encounters and in line with the tradition of reciprocity, not just borrowing in the strictest sense. Similar observations have been made in other countries where residents had to resort to traditional norms of sharing resources as a way of mitigating challenges that would otherwise lead to conflicts (Shrestha et al., 2018) or the resource would have been even more expensive (Shnegg, 2018).

There is, nonetheless, little opportunity for networking in areas with similar businesses leaving these women at a disadvantage in times of water stress. Inability to get a regular supply of water or buy big reservoirs means their businesses and of course their income will be limited. The problem of water shortage is even more serious among business owners in rented houses. In some places, the occupants are able to get water through the good will of the owners. It is common to see locked water taps in rented houses and some of the owners even sell water to the tenants.

Another possible reason for water shortage in the town has to do with the limited capacity of the water utility. The income it collects from customers was inadequate to develop more water sources and maintain existing ones although significant improvements have been made recently following the revised tariff. It is time for the water utility to think of involving different stakeholders in the supply and storage of water. This way of providing water services, otherwise known as co-production, has been indicated in other countries with similar challenges to benefit the poor who would be unable to get access for socio-political reasons (Ahlers et al., 2014).

Part of the reason for the water shortage is also the poor management by the office. It is common to see leakages in parts of the city, although the utility office claims that it has enough manpower, slightly higher than the 'seven staff per thousand inhabitants' national standard set for similar towns. Even newly erected water lines are not properly functioning due to some administrative problems. It seems there is often a lack of functional integration and proper coordination among different units, which further exacerbates the problem. Hence, an improved managerial structure and function, with detailed responsibility and accountability could improve the services.

The water utility office in the town has introduced a water rationing schedule as a way of supplying water proportional to the assumed needs of the residents. Yet, the schedule is designed to provide more access to business areas than to residential ones, leaving the small businesses run by women, mainly found in residential areas, at a disadvantage. This implies that the office is not doing its

level best to provide equal access, let alone to make water adequately available to women involved in business. Similar observations made by Fonjong and Ngekwi (2014) also revealed that in areas where there is a shortage of adequate water supply, not much is done to address the gendered needs in the distribution of water. Hence, these women are left with no option but to buy water at a higher price, which in turn affects their income. Amankwaa et al. (2014) also mentioned instances where people had to pay extra costs to run their business when they are unable to get regular water supply. It is not only the extra cost women have to pay that is of concern. Studies have indicated that in areas where water supply is inadequate, the alternative sources may be unhygienic and could possibly lead to sickness (Pahwaringira et al., 2017).

The water utility stated that it is working with local authorities to involve women as members of the customer groups and administrators of communal water distribution points, although not much is done to critically study what Truelove (2011) calls 'every day gendered water practices'. Instead, the concern of the utility is whether the town in general is getting equitable distribution irrespective of the gendered water needs. The water utility has to make use of gender disaggregated data in relation to water use in such a way that needs-based service provision is possible. Based on the data on productive and reproductive household water use as well as on gender-specific sanitation priorities, the utility can revise existing water rationing schedules for improved and fair distribution.

Another way of providing equitable service could be revising the current water management practice in Ethiopia. The system is influenced by what is known as the 'contract model' since the Ministry of Water and Energy sets water tariffs and directs the activities of the utilities (Ministry of Water and Energy, 2013). Although it would improve the service provision if independent regulators also conduct supervision of the service, the lack of provision in the directive makes it difficult to use the hybrid model (e.g. Jensen and Wu, 2017). Perhaps more appropriate would be to use what a review by Agrawal (2001) calls 'sustainable governance of resources', where users 'self-organize' to manage the distribution of water.

It is ironic that the office prohibits selling water by private providers when it is not able to adequately provide enough water. In practice, people openly sell and even make a living out of it. Despite this, there still is a shortage of water in the city, partly due to the coping mechanisms residents implement. Most of the hotels in the city have huge underground water tanks, which drain all the water in the area, leaving neighbours unable to get even their weekly ration. The water utility has a good knowledge of who sells water and who stores more water than is allowed, although none of them are fined as per the regulation. Hence, the issue of adequate supply of water still remains at stake.

Conclusion

Gender issues on water access and equity can barely be thoroughly analysed if they are treated in isolation from other grassroots realities in a community setting. Water-related problems in Wukro can be understood better if they are situated

within a broader discourse on women's economic empowerment. Wukro has no adequate supply of water, although there are some districts that rarely face water shortages and enjoy better attention from the utility. People have actually taken this unexplained scarcity as normal and started to live with it, showing no signs of pushing government authorities to improve services. Hence, securing adequate water is going to be a formidable task for a utility that is only providing half of what is required. The problem has become more challenging because of the practices at the utility, such as the differential distribution schemes. The utility has also been providing treated water for construction purposes while residents are not able to get adequate supply. This has left poor women involved in small-scale businesses at a relative disadvantage.

Governmental and non-governmental organizations should design specific programmes that fully address the needs and priorities of the different categories of women. For instance, the utility can sustainably solve the water shortage if additional water sources are secured. However, as developing additional water sources may take a longer time, the utility has to work on introducing a system that allows private providers to be involved in the development and distribution of water services, with the former doing the monitoring and evaluation of the quality of the services. The utility should also encourage residents to use alternative sources such as rain water harvesting and river water. A maximum possible use of existing water resources can also be achieved if some rearrangements are made in the management of the resource at the utility. One of the measures could be limiting the use of treated water for construction purposes and including women as members of the town's water board so that they can advise responsible bodies to address the gendered needs in the water distribution system.

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