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ACCESSING WATER FOR DOMESTIC USE: THE CHALLENGES FACED IN THE GA WEST MUNICIPALITY, GHANA

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Abstract: **This paper investigates the various challenges people face in their quest to access water for domestic use. Three communities were randomly selected in the Ga West Municipality in the Greater Accra Region of Ghana. Questionnaires were administered to 246 households and 29 respondents were interviewed from water supply companies and other opinion leaders. Issues investigated included the main sources of domestic water, distance from the source of water to the home, mode of transporting water to the home and the cost involved in the purchasing of water. The results show that the major challenges in accessing water in the district were distance from the home to the water source, monetary cost of water which was considered expensive, and the mode of transportation which was mainly head-porterage. It is recommended that households harvest rainwater in larger quantities and invest in large storage tanks into which water could be stored for use.**

Keywords: **domestic water, access, Ghana.**

I. INTRODUCTION

Water supply systems are important facilities to every society. Provision of potable drinkingwater to homes and industries is necessary for development. Water is the first element of all life and therefore there is the need for a continuous supply for survival (Shatanawi &Naber, 2011). Though water resources are in abundance, it isunevenly distributed on earth resulting in water scarcity in some parts of the earth.More than 1.1 billion people in low and middle-income countries (representing one in every six people) lack access to clean, safe drinking water (MercyCorps, 2006). Though this has reduced to about 800 million people still without access to adequate safe water as at 2010 (UN Millenniun Development Goals Report, 2012), efforts bygovernment and non-governmental organisations to make water accessible to homesirrespective of its availability have not yielded the expected outcome.

The issue of water scarcity in parts of the world has affected its accessibility. Available fresh water is also reducing by quantity and quality due to human development and processes such as construction projects in water ways and pollution by industrial waste. The most affected are people in the developing countries with a greater majority being children. In Ghana, over nine million people have inadequate access to safe water as at 2006 and 7 million as at 2009 (representing 42% and 30% respectively of the total population) (WaterAid, 2006; WaterAid, 2013). The policy of the then Ghana Water and Sewage Corporation (GWSC) included the supply of potable water to rural communities based mainly on groundwater sources.Groundwater is considered because it is feasible and the most economic source of rural potable water supply (WaterAid, 2006; Ghana Water Resource Commission, 2011). Though groundwater is an inexpensive way of supplying water in some parts of Northern Ghana, the situation is different in some areas in the South. Water from

some wells and boreholes in the South and especially in the Ga West Municipality has some level of salinity, which either limit their functions or render them unproductive (DWST-GWDA, 2007).

Most of the localities in the Greater Accra Region depend on rivers, streams and canals for their water supplies (Sarpong, 2004). Though this region hosts the capital city of the country, it is no exception when it comes to issues surrounding access to domestic. It was expected to have better condition than the other regions in the country since it is the seat of government. However, due to the unequal distribution of facilities, increasing population resulting in competition between industrial and domestic water demands, many communities within this region still have inadequate supply water to their homes.

Communities with water supply systems that constantly supply homes with potable water are not secured because they sometimes face acute water shortages. Some communities have not had any form of town supply systems to provide their homes with potable water. Therefore, people spend quite some time in accessing potable water. The former district capital (Amasaman), which has been maintained as the capital for the GaWest Municipality in the Greater Accra Region of Ghana has always been the centre forplanning and the seat of administration since the creation of the Ga District in 1988 (Ga WestDistrict Assembly, 2012). However, there is no major water supply system that supplieswater to communities within the district. Currently, only 17.5 percent of the population in themunicipality has access to treated water, while nationally, this is above 70 percent (DWST-GWDA, 2007). What are the sources of domesticwater in the municipality? How is the water transported from the source to the home and what challenges do people face in trying to access potable water for domestic use? This research therefore sought to find out the main sources domestic water, thedistance from the source of water to the home, time spent while accessing water, mode oftransporting water to the home and the cost involved in the purchasing of water for domesticuse.

II. CONCEPTUAL FRAMEWORK

Access to facilities and services is central for policy formulation as well as its reformation because it has been realised that people deserve similar levels of quality and quantity of resources (Van der Reis et al, 2007). It forms the key issue where the sustainable livelihood of a community is involved because it aids the access to community assets including public facilities such as healthcare centres (Obrist et al, 2007) and water facilities. Therefore any constraints to access to facilities will have effect on the level of its accessibility.

The concept of access has been looked at as a set of dimensions that fit into both the consumer and producer system (Dillip et al, 2012). While access has evolved over time, there has been the growing need to address it beyond just the utilization of a particular system/product but rather use it as a measure of the effectiveness of services (Gold, 1998).Access refers to one's ability (i.e. monetary cost) and capability (i.e. distance, time, convenience and energy) to reach those facilities that enhance ones wellbeing. Accessibility on the other hand involves the facility being located within safe physical reach being affordable and accessible in law (Abane, 2005).This may also be considered as the ease of approach toneeded facility/services from one location to another measured (Clark & Coffee, 2011), using the various components of access. Peter et al (2008), defines access as the timely use of services according to need.

Though there has been a lot of a controversy over the definition of access, however, they can be look at using Penchansky's components of access from the perspective of the provider and the consumer (Van der Reis et al, 2007).According to Penchansky & Thomas, (1981), access as a concept is made up of five components. These are availability, accessibility, accommodation, affordability and acceptability context as explained and built on by many researchers(refer to Table 1).However, in examining the challenges people face in accessing resources, there is the need to look at how the various components of access are affected. If there is a problem with any of the components, access to resources may be compromised (Lui et al, 2003) because the degree of access is reliant on the interplay of the various components of access (Obrist et al 2007). For instance, if one wants to access the services of a particular facility and the services provided is not considered affordable by the consumer, one cannot access the facility even though the quality might be acceptable and the facility available and accessible. Obrist et al 2007, adapted the concept of access as examined and discussed previously by Penchansky (1981). They built on this framework within the livelihood framework and vulnerability context which helped in addressing very crucial issues such as the available assets such as natural and human capital, that people depend on to enable them access the needed facilities. Their model however, failed to address expected satisfaction which is an important drive for access in the first place.

Though other studies such as the ACCESS project have done further research on some of the components individually, Penchanskys, method remains the foundation for the definition and understanding access to services in the context of both the consumer and the customer. The framework has helped to build concrete understanding of access as used by services providers and the expected outcomes of services.

Table 1: Five components of access by Penchansky & Thomas (1981)

Concept	Definition
Availability	The relationship of the volume and type of existing services (and resources) to the clients' volume and types of needs.
Accessibility	The relationship between the location of supply and the location of clients, taking account of client transportation resources and travel time, distance and cost.
Accommodation	The relationship between the manner in which the supply resources are organised to accept clients(including appointment systems, hours of operation, walk-in facilities, telephone services) and the clients'ability to accommodate to these factors and their perception of their appropriateness.
Affordability	The relationship of prices of services and providers' insurance or deposit requirements to the clients' income, ability to pay and existing health insurance. The clients' perception of worth relative to total cost is a concern here, as is their knowledge of prices, total cost and possible credit arrangements.
Acceptability	The relationship of clients' attitudes about personal and practice characteristics of providers to the actual characteristics of existing providers, as well as to provider attitudes about acceptable personal characteristics of clients.

The Penchansky's Access framework which was built upon to examine healthcare services in the context of the livelihood framework was adapted in this paper. The five components of access adapted for the framework included accessibility which measured the distance between domestic water source and residence while acceptability looked at the type of domestic water source accepted and accessed. Availability looked at the quantity of water that could be accessed from a chosen source while the mode considered the ways of transporting domestic water from the source to the home.

On the other hand however, affordability measured cost of accessing domestic water. This looked at the monetary cost of water as well as the time spent in accessing domestic water. These components were influenc3dwsazed by the water services available in the municipality which was determined by the policies and institutions in municipality. The government had tasked institutions which were responsible for the provision of safe water to the public. The Ghana Water Resource Commission was to regulate the water resources in the country (i.e. that is from surface to groundwater resources). The Ghana Water Company of Ghana (GWCL) was responsible for providing safe water to urban areas in the country while the Community Water Supply Agency were responsible for the rural areas of the country. Besides this, there were few NGOs who such as Water Heath International in collaboration with Safe Water Network were helping with the delivery of the task of providing water supply services to the municipality.

The components of access were expected to bring the satisfaction of providing water for the various purposes in the home on a continuous basis such as water for drinking, scrubbing and cooking. The expected satisfaction was supposed to bring about several outcomes such as water security, reduced vulnerability and well being.

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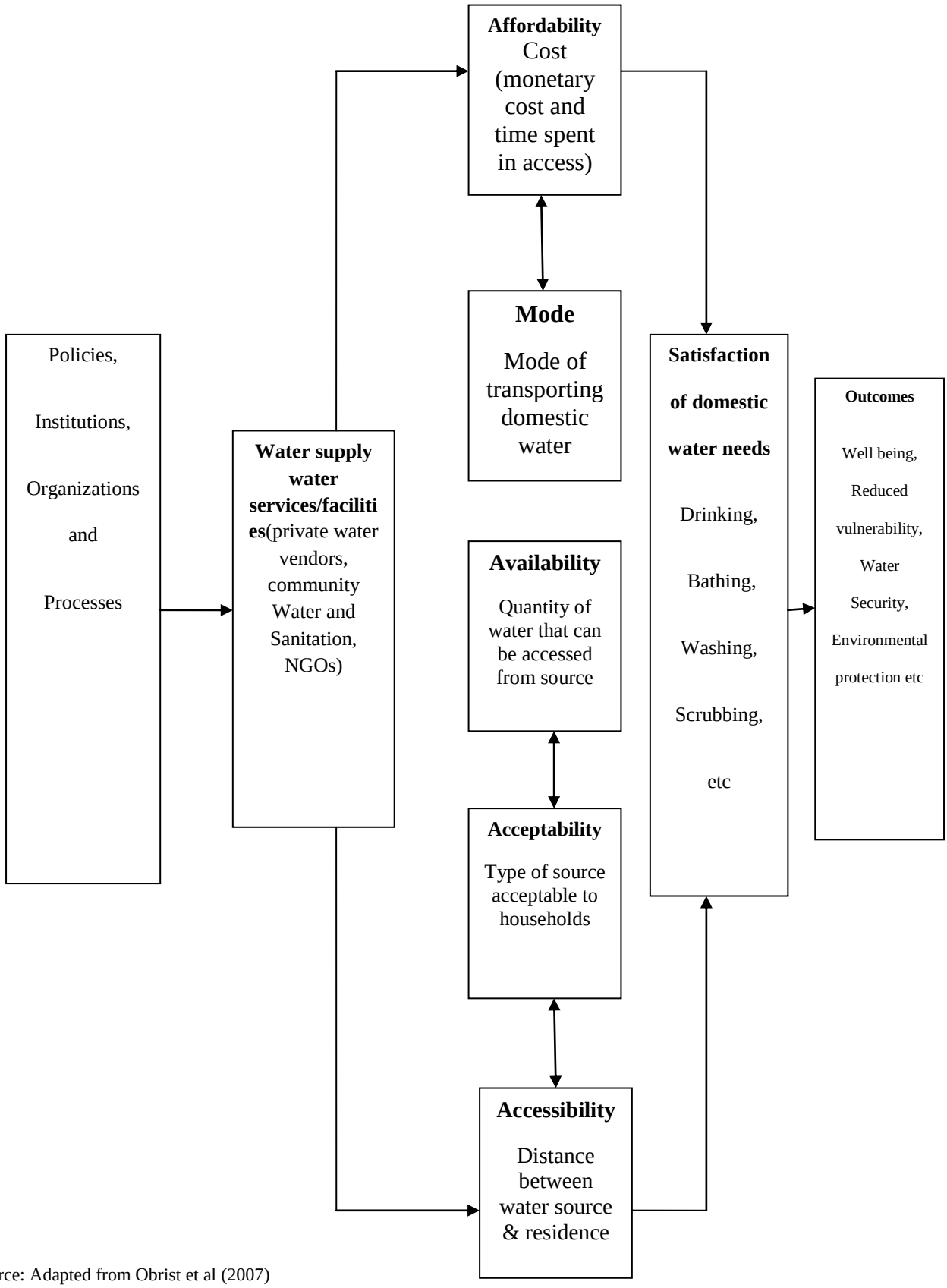

Source: Adapted from Obrist et al (2007)

Figure 1: Access Framework

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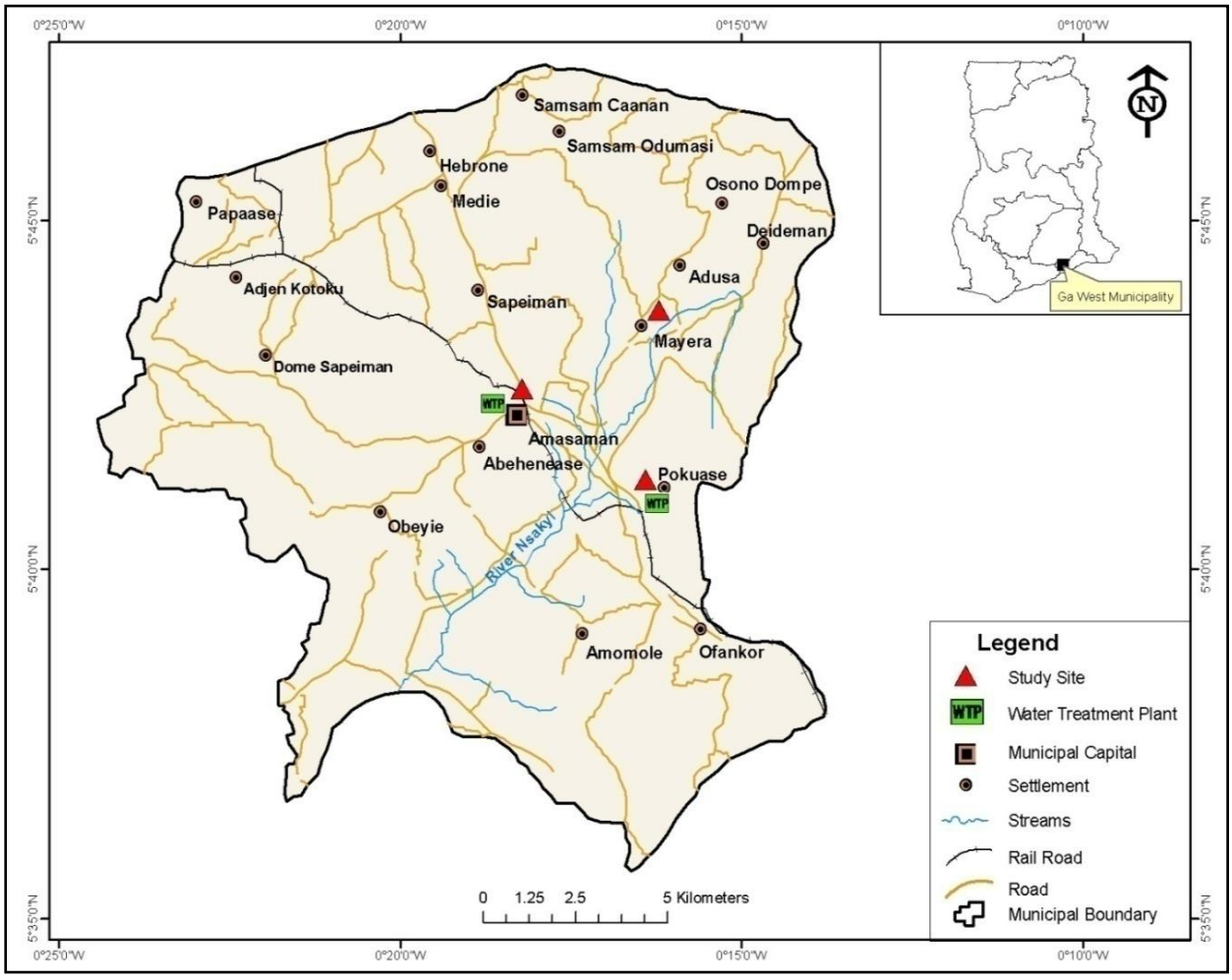
III. STUDY AREA

The Ga West Municipality is currently one of the seven districts in the Greater Accra Region with its capital being Amasaman. Ofankor, Medie, Adjen Kotoku and Pokuase are some of the major towns found in the municipality. It occupies a land area of 284.01sq km which is zoned into six zonal councils (Pokuase, Mayera, Ofankor, Ayikai Doblo, Kotoku and Amasaman) for effective administration. The population of the Municipality was projected to be 243,724 in 2007 (Ghana Statistical Service, 2002) but as at the year 2008, the population of the area was 183,000 (Ga West Municipal Health Management Team, 2008). The Municipality remains predominantly peri- urban and urban with a population growth rate of 3.4% in the year 2000 which is higher compared to the national growth rate (2.6 %). The reason given was the proximity of the area to the capital city. The population is mainly concentrated along the peri-urban areas of the municipality particularly on the border with the Accra Metropolitan Assembly and Ga East District Assembly. The 2000 population figure also showed a density which was much higher than the national density though lower than that of Greater Accra Region (with 895.5 persons per sq. km). This implies great pressure on resources including water (Ga West District Assembly, 2006).

The major rivers that flow through this municipality are the Densu, and Nsakyi rivers. Densu, which is the largest of them drains down from the Eastern Region through the western portions of the district to Ga South Municipality where it enters the sea. It is also the major supply of water to most of the people in the municipality and its neighbouring communities andserves as a natural boundary between Ga West and Ga South municipalities. The bi-modal rainfall pattern enables some households in the municipality to depend on rainwater as their main source of water for the home (Fig 1 shows the map of the Ga West Municipality).



Source: GaWest District Assembly, 2009

Fig 2: Map of Ga West Municipality with selected communities involved in the research

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IV. METHODOLOGY

The research involved respondents from various categories which basically included households (both male and female headed), traditional authorities and water supplier agencies. The water supplier agencies included the individual or private and non-governmental organisations such as the Water Health International in collaboration with Safe Water Network. The water supplier agencies under the government organisation included the Ghana Water Company Limited (Aqua Vitens Rand Water Limited), Community Water Supply and Sanitation Agency and the Water and Sanitation Committee in each community. Two communities were randomly selected (Pokuase and Mayera) while the Amasaman community was purposively selected because it was the municipal capital and was the centrefor administration and planning. The total population for the three selected communities was 15,630 (Ghana Statistical Service, 2002).

Fisher, Laing, Stoeckel, and Townsend, (1998)formula for sample size estimation was used which gave a total sample size of 246. The total sample size was then proportionally allocated to the three communities involved in the research (refer to Table 2). Two hundred and forty-six respondents were randomly selected from 246 households to be involved in the research while the purposive sampling technique was used to select the person in charge of the access and management of water inthe home. The purposive sampling technique was also employed in selecting 29 stakeholders which included main water supply companies and traditional leaders in the municipality.

Table 2: Selected communities and the sample size

Selected Communities	Total Popn	No. of Houses	No. of H/d	Avg Size	Proportion (percent)	Sample size
Pokuase	10,858	1,366	2,338	4.6	60.0	148
Amasaman	3,959	626	984	4.2	34.6	83
Mayera	813	177	238	3.4	6.0	15
Total	15,630	2,169	3,560	12.2	100	246

Source: Ghana Statistical Service, 2002

Primary data were obtained from the field using field observation (non participant observation) questionnaires and interview guide. The questionnaire design employed both the close ended and the open ended questions. Field observation as a data collection technique was used to inform the researcher on the various sources of water from which the communities accessed domestic water and the level of accessibility of the various water sources during the dry and wet seasons. The month of July was selected to observe the level of accessibility to water in the rainy season while January was selected to observe accessibility in the dry season. It was assumed that the seasonal changes may have influence on the level of accessibility. This also helped to observe how community members helped in the protection of water resources and its environment. An interview guide was designed to collect data from opinion leaders (traditional authorities) which included the chiefs of the selected towns, the assembly men and officials from the water supply agencies and companies.

Questionnaires administered were analyzed using the Statistical Product and Service Solutions (SPSS) version 16. Data collected using interviews were transcribed, categorised and discussed. The non participant observation also helped to further explain the challenges faced in accessing water in the study area.

V. RESULTS AND DISCUSSIONS

Sources of water

The main sources of water in the municipality were found to be rivers and streams, imported tape/sachet water, harvested rainwater and ground water which was harnessed through boreholes and wells. The choice of domestic water sources was dependent on the cost of water and the distance from source to the home. Groundwater was the most accessed water source in the municipality constituting 37.4% of respondents. This was because most of the boreholes and wells were located close to the residence of community members making it geographically accessible. According to respondents, this source was also affordable in terms of monetary cost and available in the quantities they needed. Only 3% of respondents (refer to figure 3), harvested rainwater for domestic use making it the least accessed source of domestic water in the

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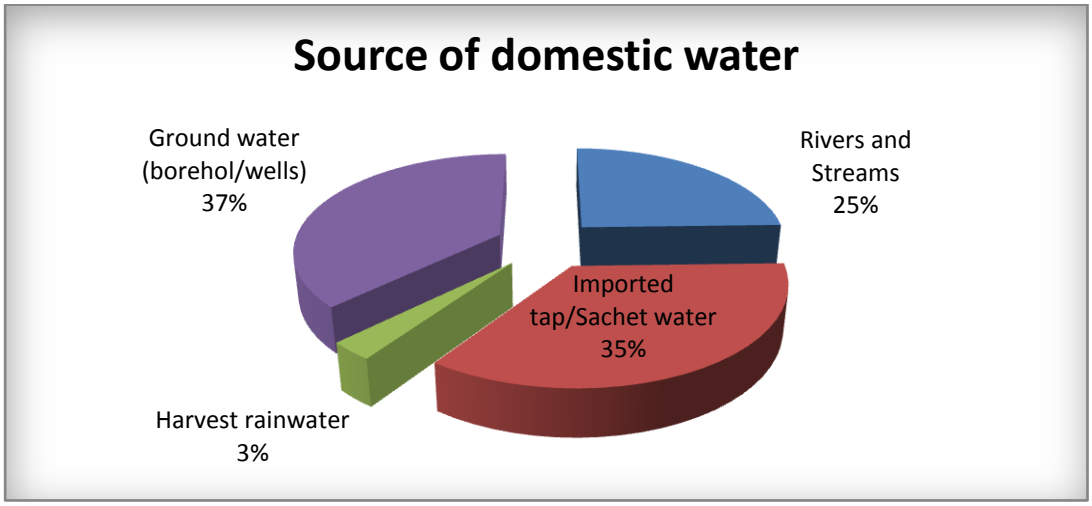
municipality. This was because harvesting rainwater in larger quantities was considered expensive because of the cost of structures one has to put in place to harvest and store water. For instance one needed at least GHC 1,500.00 ($ 1,250.00) to construct a small water harvesting system for a household of about five people. The water storage polytanks for small households were very expensive with prices ranging from GHC 600.00 to about GHC 1,200.00 ($500.00 - $1,000.00).The data showed that the average monthly income was about GHC 100.00 (equivalent to $83.00). This made it too expensive for an average home in the municipality to afford in the short term.



Source: Fieldwork, 2009

Fig 3: Sources of domestic water

The data also showed the source of water was influenced by sex. Though men were also involved in the access of domestic water, their preferences for the source of domestic water was a little different from that of the women. Males had the highest percentage in access of imported tap/sachet water (constituting 38.5%) because they could afford it (refer to Figure 4). The data showed that the income of males was higher than that of the females because compared to their female counterparts, majority of them were employed. On the other hand however, none of them considered rainwater harvesting as an option. Most of the male respondents complained about the cost involved in putting up structures for harvesting rainwater. More females (constituting 38.2 percent) accessed domestic water from ground water sources while a few (about 4.9 percent) considered rainwater harvesting. More women also accessed water from groundwater sources because they were affordable, accessible and available in quantities which could reduce vulnerability and increase water security.

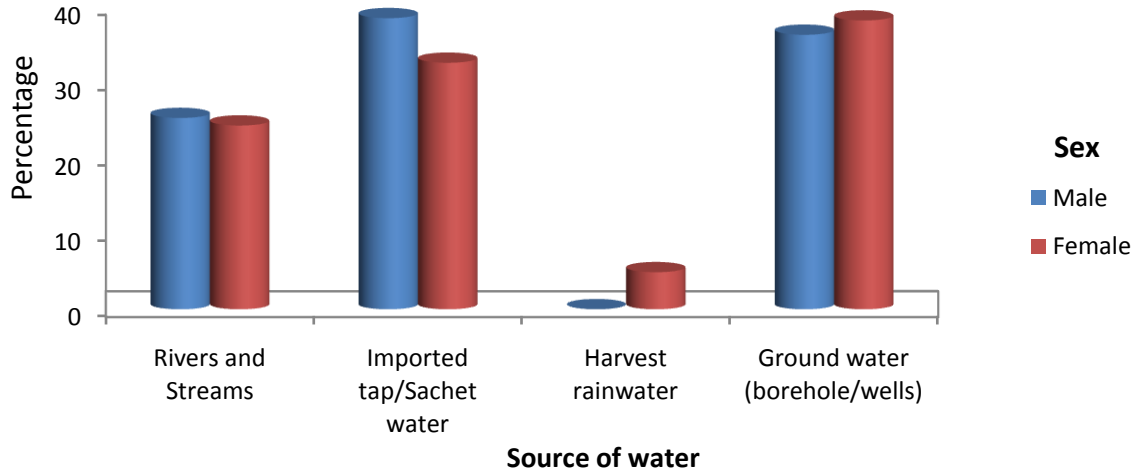


Figure 4: Source of water by sex

Source: Fieldwork, 2009.

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To ensure continuous supply of water to the home, respondents accessed water from multiple sources because of the quantities available and acceptable to them. More than half of all respondents in the selected communities accessed domestic water from multiple sources for domestic use. Confirmed by Engel et al (2005, cited in Eguavoen, 2008), many households in the various regions in Ghana are faced with having to decide on which source of water is more acceptable for household consumption because they have to access water from different sources. This makes water user groups dynamic giving household options to choose from, bearing in mind the minimization of risks especially during the dry season. Thechoice of water source involves the need for reasoned decision based on one's own criteria or acceptability.

The data also showed that income influenced the source of water accessed for domestic use. Access of a particular source of domestic water is affected by how affordable it is. The number of respondents who were unemployed constituted 15.2% of all respondents. About 64% of respondents were self employed residents who were into trading and farming activities. Some 10% worked in the formal sector as extension officers and teachers in their communities. The rest (2.5%) were not employed but worked on short term contracts. As a result, most respondents were unable to really give accurate information on how much they earned at the end of the month. Most of them clarified this by stating that the money was spent before it was even accounted for at the end of the month or sale of a product. One of the respondents explained further that:

'The money I earn from this business is small. I mostly spend it before even accounting for it. It is more of "from hand to mouth" thing. Therefore, I can't really tell how much I earn at the end of the month (Ama).'(Fieldwork, 2009).

Majority of those who earned about GH¢ 50.00 (which was equivalent to $ 41.7) a month accessed domestic water from groundwater sources because they were cheaper (usually costs about GHC 0.10p / $0.08 per 20 litre bucket). About 35.5% of people with the highest income earning group (i.e. > GH¢ 160.00/ $ 133.30) accessed imported tap/sachet water for domestic purposes while the same percentage accessed domestic water from groundwater sources because these sources were affordable and accessible to them (Refer to Figure 5). Almost 6% of respondents from this category made efforts in storing harvested rainwater in large quantities to ensure continuous accessible water for domestic use. Besides this, some of the reasons they gave was that rainwater was acceptable and affordable because it was cheaper and a safer source of water for all domestic chores. As defined by Abane (2005), access included ones convenience in reaching a facility that will enhance ones living condition.

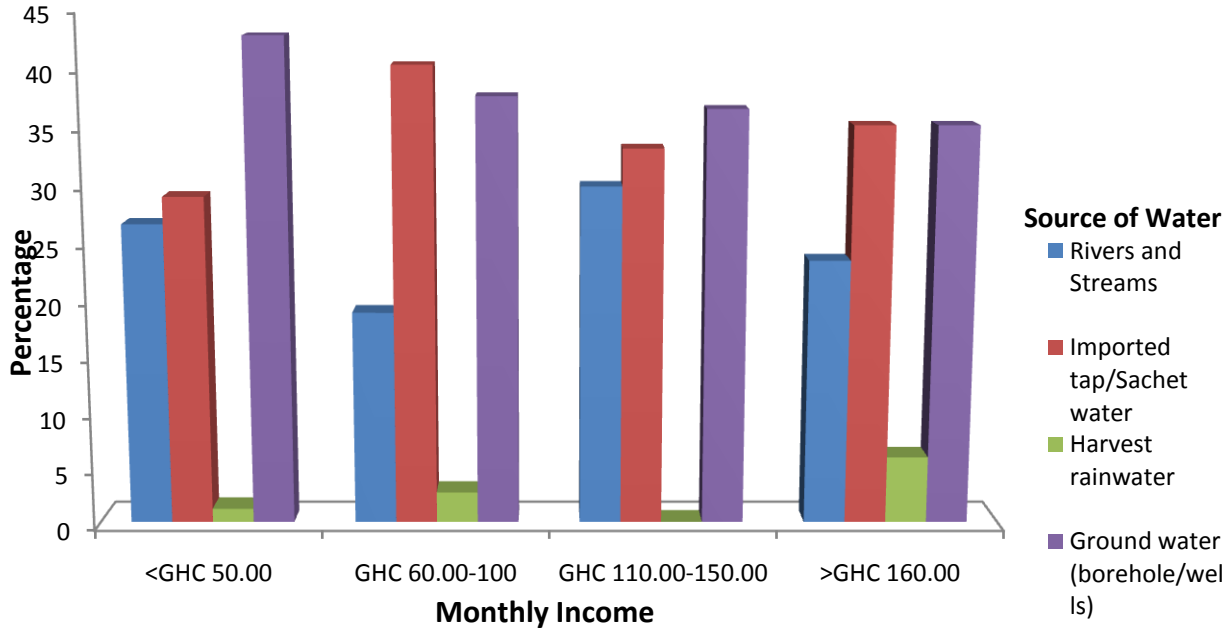

Figure 5: Source of water by monthly income

Source: Fieldwork, 2009.

Note: The dollar rate in 2009 was GHC 1.20

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Distance and time spent in making a round trip

Vehicles were mostly used in importing tap/sachet water from communities outside the municipality which travelled about two kilometres or more. Accessing imported tap/sachet water took an average time of an hour. A few of the households (12.8%) covered more than two kilometres (almost two hours) in accessing domestic water. Majority of households (constituting about 52.6%) who took less than fifteen minutes (less than a killometre) in making round trip accessed domestic water from groundwater.

Groundwater sources were closer compared to the other sources. Nyong and Kanaroglou (1999) stated that most households preferred using water irrespective of its quality as long as they were found in areas closer to their homes to cut off the extra time spent at sources with good quality but located far away. Eguavoen (2008) also found out that people were actually not bothered about the quality of the water they accessed as a major factor in their choice though they may have their own perceptions about the quality of water. This was because they were likely to access domestic water from sources which were of poor quality because they were closer; hence the issue of proximity does have a great impact on the choice of domestic water source. The assertion made by Gleick (2003) is that users of water may be more likely to value the taste of water available to them and the convenience associated with it, than opt for other alternatives. Also, according to Nyarko et al (2006), though there are several alternatives of water sources throughout the year which is available to people in a community, households seemed to have preferences for water from particular sources.

Households made use of the water resources available to them as long as they were accessible. The average time spent by an individual in making round trips in accessing water for the home was about twenty five minutes. The time spent in accessing domestic water had a direct effect on the quantity accessed, convenience and mode of transportation. According to the UNICEF/WHO Joint Monitoring Programme (2006), round trips to facilities which took more than thirty minutes were not accessible facilities.

Mode of transporting water from source to home

There were various modes of transporting water from the sources to the home. These modes were by head porterage (73.5%), by a private vehicle or commercial water tankers (7.3%), by using a wheelbarrow (8.5%) and by a locally made trolley (10.7%) (Refer to Figure 6). The locally made trolleys and the use of wheel barrow in transporting water helped to reduce the stress involved unlike the head porterage method. However, through observation from the field, it was noticed that these modes of transportation were only possible if men were involved in accessing and transporting domestic water from source to the home. This was because these machines needed a lot of manual energy to push since a large amount of water is transported at a time.

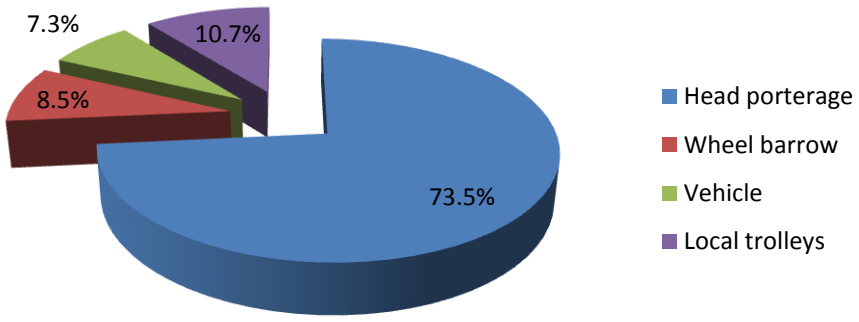

Figure 6: Mode of water transportation

Source: Fieldwork, 2009.

Through field observation, it was noticed that however, that due to the cost involved in maintenance and purchase of the locally made trolleys and the wheel barrow, very few people could afford to own them. Vehicles such as water tankers and pickup trucks were mainly owned and used by the water supplier agencies. This was very expensive for the individual households to employ to supply the home with water on a sustainable basis. Nonetheless, a hand full of some rich community members employed this mode to supply their homes with water throughout the year.

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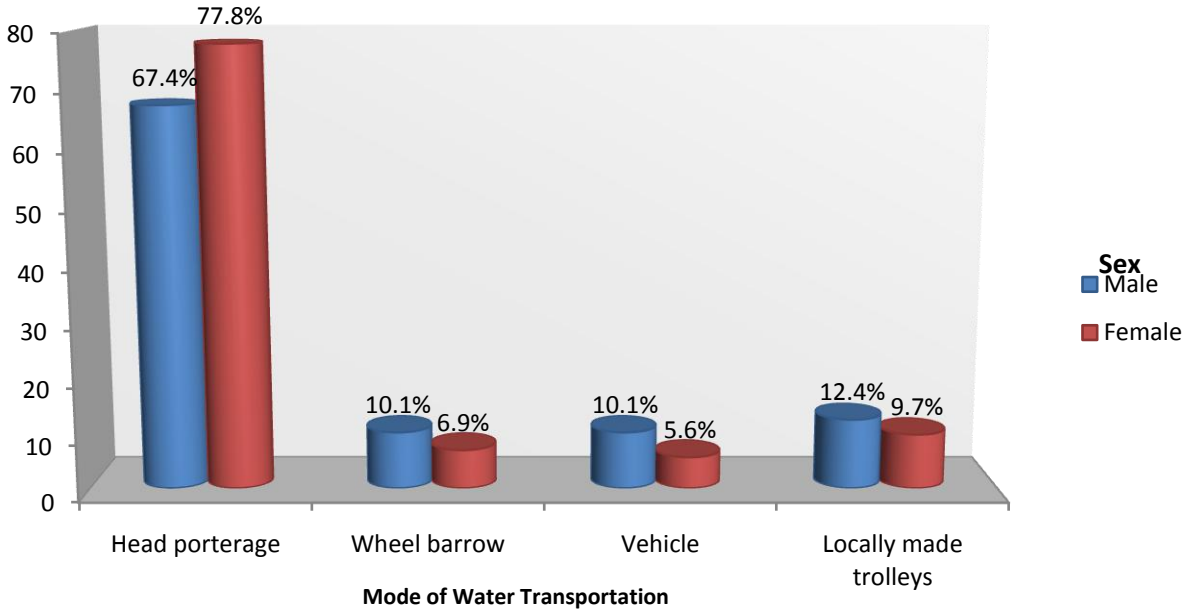
Besides this, head porterage was the commonest mode of transporting water from the source to the home. It has been the traditional way of transporting water and data collected showed that this tradition was still practiced. Containers carried were usually big pans and gallons to enable people carry as much water as possible at a time. This needed a lot of energy and therefore added to the stress involved in accessing domestic water.

The data also showed that sex had an influence on the mode of water transportation. About 77.8% of women used the head porterage method in transporting domestic water to the home while about 67.4% of the males used this method. Women in many societies have the primary responsibility of organising and undertaking domestic work which includes accessing domestic water (Ghana Water Resource Commission, 2011). Though females also used vehicles, locally made trolleys and even the wheel barrow to transport domestic water to the home, these modes of transportation were patronised more by males than females (refer to Figure 8).



Source: Fieldwork, 2009.

Figure 7: Mode of transportation by sex

Plate 1: **Using locally made trolleys to transport water from source**

Source: Fieldwork, 2009

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Cost of water

In order to achieve sustainable access to a particular source of water to satisfy domestic water needs, issues such as affordability was considered. Affordability includes the monetary cost of water and the time spent in accessing water to satisfy domestic water need. The general overview of the data shows that most people preferred to access domestic water that was cheaper compared to the rest irrespective of its quality. The majority of respondents (constituting over 53%) accessed domestic water from sources which were affordable so as to maintain constant supply of domestic water from that source. The main objective is to help reduce vulnerability and increase water security.

Water was sold at prices ranging from GHC0.05($ 0.04) to GHC0.50($0.41) (refer to table 8) within the studied communities in the municipality. The price was however, dependent on the source of water and proximity of the water source to the home. Majority of respondents (53.1%) accessed domestic water from sources which were cheaper and the cheapest source considered is the groundwater source. Ground water harnessed through hand dug wells and boreholes had little or high level of salinity limiting its functions. Therefore, water from ground water sources was sold mostly at GHC0.05 and where the salinity level was low, it was sold forGHC0.10 per a twenty litre bucket.

Interviews conducted with individual and private water vendors of imported tap/sachet water showed that a bucket of water was sold for GHC0.20 or more. This made it quite expensive for the average household to provide water from this source on a sustainable basis. According to Maxwell, Levin, Armar-Klemesu, Morris, & Ahiadeke, (2000)water vendors tend to make more profit by selling water five to ten times its actual price. Though the Water Health International sold a twenty litre bucket of water for GHC0.10 in Pokuase and Amasaman it was considered to be expensive by the people in these communities. This reduced the demand of water from this source by community members.

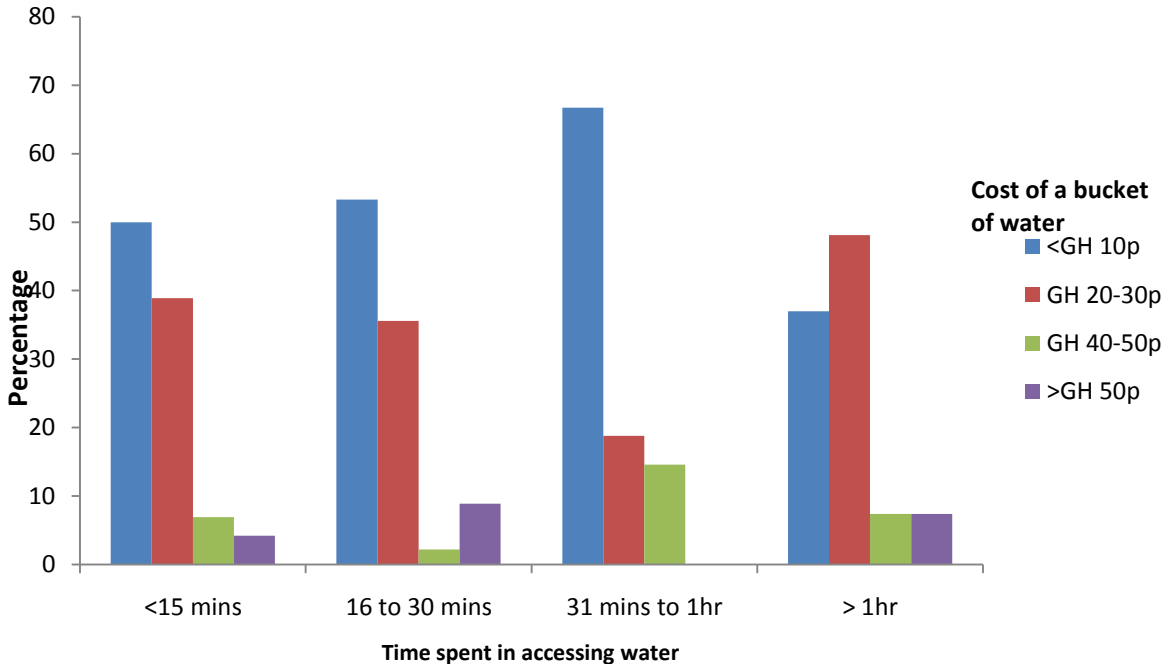

Figure 8: Cost of water and time spent in accessing water

Source: Fieldwork, 2009.
Note: $ 1.00 was equivalent to GHC1.20

Quite a number of respondents made use of sachet water especially for drinking. This was mainly supplied in bags by vehicles on demand. A bag containing about thirty-three sachet of water with each sachet weighing about five hundred milligrams was sold on the average at GHC0.70 from the distribution trucks. Though this was expensive, it was assumed that sachet water was safer to consume as drinking water as compared to the available sources of water in the municipality.

Pokuase and Amasaman, the district capital had a small plant put up by an NGO (Water Health International) to help resolve the water issue in the municipality. Though it was expected to ease the stress that goes into accessing water in

these communities, data collected showed that few people actually patronized water from this plant. Despite the fact that business is booming for this NGO, it was found out that people who actually patronized water from this plant were people from the periphery and outside the communities.

The data also showed that the Mayera community spent the highest amount of time in accessing water for household use. Pokuase community on the other hand had the least amount of time spent in accessing water. This was due to the available opportunities to the people in the Pokuase community. The main river in the municipality (Nsakyi River) flowed through the Pokuase Township while the Sunkwah stream also took its source from one of the highlands in the community. Apart from this, the water treatment plant constructed by the Water Health International in collaboration with Safe Water Network gave more than enough alternatives to community members to choose from. Though the district capital (Amasaman) has almost the same alternatives, it does not have streams and rivers when compared to Pokuase. However, much time was not spent in accessing water compared to the people in the Mayera community because the district capital was more accessible. Due to this, many respondents from this community (i.e. Amasaman) said they depended on imported water and sachet/bottled water for household consumption. Many of the water supplier agencies could easily supply people in the community with water because they were more accessible.

VI. CONCLUSIONS AND RECOMMENDATIONS

The main sources of domestic water in the municipality are rivers and streams, imported tap water, harvested rainwater and groundwater sources. However, the most accessed water source was groundwater which was harnessed through boreholes and wells. The challenge found was that water from this source had high levels of salinity making them hard water. Hard water made household chores more difficult. It is therefore recommended that the District Water and Sanitation Team in collaboration with NGOs in the district give more attention to the quality of water from the boreholes and wells they construct for the community rather than considering the quantity and its proximity to residence of community members.

Only about forty percent of respondents accessed domestic water within one kilometre leaving the majority covering more than a kilometre in accessing domestic. According to the UNICEF/WHO Joint Monitoring Programme, round trips to water facilities which were more than one kilometre were not accessible facilities. This means that domestic water was not accessible to most households. It is recommended that Ghana Water Company Limited mandated by the Government to supply treated water to urban communities come in to supply water through laid down pipes to homes. Since the data showed that water from treated sources was more acceptable though not affordable, its supply to homes in the municipality will make it more accessible, affordable and available to homes in the municipality

Head porterage was the main mode of transporting domestic water from the source to the home. This mode of transporting domestic water takes a lot of productive time and energy. This also made some of the preferred or accepted water sources not accessible. Satisfaction is achieved if the accepted resource is accessible. Any defect with regards to access will influence the expected outcome. Due to the mode of transporting water from the source to the home, many homes were forced to access domestic water close to their residence that was not acceptable for all domestic purposes. Non-governmental organisations in the municipality especially the Water Health International who already have small water treatment plants can help reduce the stress in accessing water even to the community members living on the periphery by providing water tankers to provide door to door services. This will make treated water available, affordable and more accessible to homes in the municipality.

The cost of domestic water is expensive. Those sources which were acceptable were not affordable which made it difficult for the average household to access on a sustainable basis. High quality water can be accessed cheaply and in the convenience of one's home through rainwater harvesting. Though the Ghana Poverty Reduction Strategy 11, 2009 clearly encourages rainwater harvesting through incorporating this into the architecture of buildings, this is still yet to take effect. The average income of households in the municipality (which was about GHC 100.00) makes the acquisition of water storage polytanks very expensive for the average household to afford. To encourage rainwater harvesting which is safer it is recommended that the government motivates people to use this strategy by subsidising prices of polytanks in the country to make it affordable for the average household to buy. Also, Non-governmental organisations could assist in donating some of these polytanks to communities. They could also construct bigger rainwater harvesting systems for communities or a number of households to share because it is the most inexpensive way of accessing domestic water.

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