

# Community Participation and Management of Available Potable Water Sources in the Gadi Township in the Wa West District of Ghana

Ignatius Joseph Obeng, Dramani Iddrisu, Isaac Eshun\*

Social Studies Education Department, Faculty of Social Sciences Education, University of Education, Winneba, Ghana

## Abstract

The purpose of the study was to explore community participation and the management of potable water in the Gadi township in the Wa-West District of the Upper West Region of Ghana. The study was geared towards ascertaining the involvement of community members towards the management of water resources. Qualitative approach, with case study design was employed in the study. The main objectives were to: assess how the existing water sources are being managed; and to examine the mechanisms used in promoting community participation in the existing potable water supply in the Gadi Township. The sample size of the study was seventy-two respondents comprising sixty residents, twenty from each of the three communities, three opinion leaders from each of the three communities as well as three officials from the Wa West District Assembly. Interview guide was the main research instrument used for data collection. The study was complemented Focus Group Discussion (FGD) for six to eight membership specifically one from each of the three communities. Purposive sampling technique, which is non-probability sampling technique, was used to select the key informants from the Water Management Board of the district level and from Gadi, Chogsia and Gbaalwob communities who were knowledgeable and responsible for developmental issues and water resources management in their respective areas of work. The study revealed that the existing boreholes in the study communities were not enough to adequately meet the potable water needs of the people which the community members were unanimous about. The people were, therefore, forced to resort to drinking water from dams and rivers anytime a borehole breaks until it is repaired. This exposes the people, particularly children to water-borne ailments. In managing these existing facilities, the community members instituted monthly household or individual contributions to provide funds for repair and maintenance of broken-down borehole facilities. Based on the findings of the study, it is recommended that boreholes should be mechanised and commercialised. Among other water facilities, one borehole in each community should be mechanised and the operation commercialised as well. The mechanisation will ensure larger distribution of water from one borehole site to enable many people obtain enough water for their needs. Also, the government through the District Assembly, should build dams in the community to provide enough water for their activities such as livestock, building, washing, dry season farming and other-related domestic activities. This will reduce the pressure on boreholes for water for such activities and make the facilities more sustainable.

## Keywords

Community Participation, Ghana, Management, Participation, Potable Water, Wa West District, Upper West Region

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\* Corresponding author

E-mail address: isaaceshun@uew.edu.gh (I. Eshun)

## 1. Introduction

Community participation and management is acknowledged as central to the provision of essential services, including clean water facilities to underserved communities in developing countries. The role of active community participation in ensuring sustainable development is obviously recognised as the most important factor in development. [1, 2]. Development requires participation of the indigenous people, who should be placed first in development projects aimed at improving their lives. of Development projects, such as water resources programme, affect the lives of indigenous people, both directly and indirectly since they depend on them for their livelihood [3]. Reid asserts that community participation is one of the key ingredients of an empowered community. It is a principle so important that has made active citizen involvement in all aspects of strategic plan development and its implementation [4].

Community participation in the management of water resource denotes the involvement of the communities in taking care of the sources. This includes participating in decision making and undertaking some activities which would sustain water supply to them. The greater the control of resources is given to outsiders the less local communities can be involved in critical decision-making stages [5]. However, participation can stimulate an on-going learning process by increasing awareness of collective responsibility within the community.

Just as in many African countries, the central government and external support agencies in Ghana have been responsible for planning, constructing and maintaining rural water supplies (Salim, 2002), with little or no involvement of the beneficiary rural communities. After many years of failure of top-down or centralised planning in the provision of such services, the emphasis has shifted to a decentralised community-oriented approach. Community participation was, therefore, espoused as one of the key strategies of the International Drinking Water and Sanitation Decade (IDWSD), which spanned 1981 to 1990 [6].

Following a review of policies on water and sanitation to keep pace with the changing conditions in Ghana and in the international scene, the National Community Water and Sanitation Programme (NCWSP) was launched in 1994. Subsequently, the Community Water and Sanitation Agency (CWSA) was established by Act 564 in 1998, with the mandate to facilitate the provision of safe drinking water and related sanitation services to rural communities and small towns in Ghana (Community Water and Sanitation Agency [7]. The same Act that established the CWSA also transferred ownership and implementation responsibilities to districts

and communities.

However, it was realised that community participation in water programmes was limited to mobilisation of self-help labour or the organisation of local groups to ratify decisions made by project planners outside the community [8]. This narrow conception had inherent limitations to the successful implementation of rural water programmes. Thus, the emphasis was again shifted to community management. Presently, potable water and sanitation policies assume that the facilities can and should be best managed by local user communities. It is expected that the so-called “communal management” will guarantee the technical sustainability of the facilities needed to maintain access to the facilities provided [9].

Dungumaro and Madulu contended that community involvement in other environmental issues is based on three basic reasons. These are the emergence of participatory approaches which demonstrates the importance of local communities’ consent in taking part in public decision-making processes, especially on issues that directly affect their welfare [10]. In this context, the local community’s participation could provide an important database, experience and ideas that could lead to practical, relevant, achievable and acceptable solutions to water - related problems. Another reason is the need to use indigenous knowledge as well as the peoples’ opinions as vital to environmental protection, including proper water resource use and management. Also, there is the need to build public trust because the lack of it might lead to protests and antagonism between water resource users and other stakeholders due to varying interests and demands.

According to Agarwal and Narain, local communities already have the knowledge and understanding; what they need to have are the rights over their local resources. The vast majority of people have become passive observers, and a few people are taking decisions for everyone else [11]. It is in line with this that the study sought to explore community participation and management of potable water sources and their sustainability. In the Gadi township of the Gadi township of the Wa West District.

The problem is potable water or improved drinking water is water safe enough for drinking and food preparation. Globally, in 2012, 89 percent of the people had access to water suitable for drinking. Nearly 4 billion had access to tap water while another 2.3 billion had access to wells or public taps. In addition, about 1.8 billion people still use an unsafe drinking water source which may be contaminated by feces [12].

In Ghana, only about 56 percent of the population have access to reliable supplies of safe water, although

considerably, urban water supply has problems, especially in slums and other high population density areas where the water supply infrastructure has been over stretched. The insufficient observance of hygienic practices in these areas as a result of inadequate water supply contributes to the prevalence of water borne diseases such as cholera in urban slums. In the rural areas, most communities rely on ponds and streams as their sources of domestic and industrial use [12].

The Upper West Region is one of the regions in Northern part of Ghana with a total water coverage of 77.32 percent [7]. According to the CWSA, about 20 percent of the sources of water from the total percentage coverage are not functioning. Consequently, this tends to put pressure on those which are working. This might go a long way to affect economic activities in the Upper West Region.

According to Laryea, community participation in the management of potable water is currently the dominant paradigm and framework for the design and implementation of almost all donor supported water supply projects in developing countries [8]. The reason is that, as a strategy, community management holds the key to successful and sustainable water supply schemes since it is a means by which local people can meaningfully participate (self-mobilisation) in their development [8]. This implies that ideally, any community management approach will have to address conveniently the issue of willingness and abilities of users. However, this is what has eluded the people of Gadi, making them still wait on donors or government to provide them with such facilities and maintain them as well. Most people have poor attitude towards projects provided by the government or any non-governmental organisation since it belongs to nobody.

Communities within the Wa West District do not effectively participate in the management of potable water, including Gadi, Chogsia and Gbaalwab communities. They participate only through information giving [7]. The problem is that they lack the sense of ownership and control in managing the facility, thus self-mobilisation, bottom-up approach and authentic participation as other schools of thought may put it is lacking in the community. It is in the view of this that the study sought to explore the level of community participation in potable water management in the Gadi, Chogsia and Gbaalwab communities in the Wa West District.

The following research questions guided the study: (1) How are the existing potable water sources being managed in the Wa West District?, and (2) What are the mechanisms for ensuring community participation in the

management of potable water in Wa West District? The research was delimited to Gadi, Chogsia and Gbaalwab communities in the Wa West District of the Upper West Region. The study was further centred on community participation in the management of potable water.

## 2. Theoretical Literature Review

The study was underpinned by relevant theories that explain the various conditions that go into community participation. Firstly, the Community Mobilisation Theory was examined. According to this theory, developed by Verba, Schlozman and Brady, community participation is viewed as a process influenced by different social and economic factors [13]. The theory emphasises that, for people to participate, they must have opportunities that favour them to get involved. Likewise, individuals participate in response to the political opportunities in their environment and to stimuli from other people. In other instances, some people participate because the opportunities for them to do so are greater than for other people and also because they are persuaded to get involved with other people. People with high socio-economic status are more likely to have more opportunities to participate effectively.

Also, the Community Organisation Theory was examined. The theory was developed by FAO [14]. The theory presumes that in order to participate meaningfully in co-management, certain stakeholders need to form an organisation that can assume the responsibilities on behalf of the larger community. In natural resources management field, this theory is applicable in a case where external agency is involved to initiate a natural resource management campaign and its fate handled by the community. Thus, a structure in the form of organisation which has to be managed by the community themselves for enhancing sustainability of the initiative is necessary for managing water resources for the benefit of the current and future generations.

The third theory examined was the Liberal Democratic Theory. This theory explains the process that emphasises the broad involvement of the constituents (Community) in the direction and operation systems [15]. It is critical to traditional representative democracies that tend to limit citizen participation to voting, leaving the main work of governance to professional political elites. The basis for this theory and the philosophy of people's participation lies in the fact that it is the human nature that can best take pride and value in those things he has himself played role to create. In the process of involving himself, he takes account of his own problems, needs, aspirations, ideas and interests and incorporates them in the programmes, projects and activities

that are implemented. Thus given the fact that their ideas have been incorporated, in those programmes and projects they feel that they are theirs and are ultimately obliged to guarantee the project's success their future operations. Looking at community participation from this vantage point of human nature, it can be argued that involving people in decision-making, especially the planning, implementation and evaluation of various development programmes that affect their lives is one of the basic and fundamental human rights which is principally advocated in democratic ethos.

The review of above theories became necessary because according to WHO and UNICEF, about six percent of the global burden of disease is water-related, and diarrhoea and related diseases account for the death of about two million people annually, among whom majority are children under five years of age [16]. Therefore, the provision of safe water supply and adequate sanitation services and hygiene education, are an effective health intervention that will significantly reduce morbidity and mortality related to diarrhoea and other related diseases particularly among children. The quality of drinking-water is an important environmental determinant of health in that it is a basic measure for the prevention and control of water-borne diseases [17].

Globally, many diseases have been transmitted through contaminated water which affected people with the poorest people being affected the most. For instance, diarrhoea has been noted as the predominant waterborne disease, ranking second to respiratory infections, with an estimated 4600 million cases annually and about 2.2 million deaths every year [17]. Diarrhoea severely affects children under five years of age and accounts for about 1.33 million deaths each year, representing 15 percent of overall mortality of under-five age group. Cholera, another waterborne case is reported in over 50 member states of WHO every year.

The past Millennium Development Goals, specifically MDG 7 targeted at halving the proportion of people without sustainable access to safe drinking-water and basic sanitation by 2015. The United Nations 2015 report noted that about 91 percent (representing about 2.6 billion people) of the global population was found to be using an improved drinking water by the end of 2015 compared to 76 percent in 1990. It further noted that out of the "2.6 billion people who have gained access to improved drinking water since 1990, 1.9 billion gained access to piped drinking water in premises" [18]. This presents a better picture of the Sustainable Development Goals which succeeded the MDGs.

Clean water supply and basic sanitation services are important as captured in SDG 6 of the 2030 Agenda for Sustainable Development (AfSD) which replaced the MDGs

effective January 1, 2016. Water availability and accessibility play a vital role in all sectors of development and, therefore, water supply and sanitation services have an impact on poverty, hunger, education and child mortality, among other development goals. Illnesses and diseases caused by drinking unsafe water and inadequate sanitation present health cost that take a large share of poor household income which could have been used for other productive purposes [19].

The United Nations' Goal 6 of the SDGs seeks to "Ensure availability and sustainable management of water and sanitation for all" and sets out the following targets to be achieved by the 2030 deadline:

- (i) By 2030, achieve universal and equitable access to safe and affordable drinking water for all;
- (ii) By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations;
- (iii) By 2030, improve water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally;
- (iv) By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity;
- (v) By 2030, implement integrated water resources management at all levels, including through trans boundary cooperation as appropriate;

By 2030, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes; and

- (vi) By 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency and wastewater treatment, recycling and reuse technologies, and b. support and strengthen the participation of local communities for improving water and sanitation management [18].

That is, the above seek to make everyone on earth to have access to safe and affordable drinking water by 2030. It is estimated that water scarcity affects a greater number of people (more than 40%) around the world, and this is projected to increase in future as a result of climate change. Consequently, many people will be exposed to or affected by water shortages by 2050.

Safe drinking water is very important in the daily lives of human beings, and also vital for public health. It is in this direction that community participation and management of potable water in Gadi Township of Wa District in Ghana became an issue for research. Participation is a rich concept that means different things to different settings. This study adopts the definition adopted by the World Bank's Learning Group on Participatory Development which defined participation as "as a process through which stakeholder influence and share control over development initiatives, decisions and resources which affects them" [20]. This definition emphasises that participation is an empowering element of the community to enhance resource control capacity of local communities.

Community participation is a widespread terminology in development and management and has featured in many policy guidelines of many countries across the world [21]. Sei contends that community participation is a grassroot or bottom-up approach to problem-solving that reflects collective efforts of every community member [22]. Community participation involves an active engagement of individuals within a community to solve challenges and influence policies and programmes that are geared towards improving the quality of their lives [23]. Active community participation of community members in decision-making processes makes them to develop a sense of teamwork and cooperation that increases their motivation, commitment and contribution to the process of development [24].

The top-down-approach associated with many government schemes, projects and programmes leaves little room for the involvement of the beneficiary community [25]. On the other hand, the bottom-up approach is associated with effective community participation and characterised by stronger forms of participation, involving control over decisions, priorities, plans and implementation, which results in social, economic and personal empowerment and development, as well as socio-political transformation [26]. Thus, the bottom-up approach emphasises comprehensive community participation, motivating local communities, expanding learning opportunities, improving local resource management, replicating human development, increasing communication and interchange and localising financial access [27].

It is, therefore, important to understand the significance of participation as a fundamental human right which promotes the other rights. According to article 27 (1) of the Universal Declaration of Human Rights, "everyone has the right to freely participate in the cultural life of the community, enjoy the arts and share in scientific advancement and its benefits". The concept "participation" emerged between 1960s and 1970s after the critics of most development projects failed to

achieve their intended objective because of lack of community participation [28]. According to Isager *et al.*, though most development projects directly and indirectly affect the lives of the people, many of the projects were designed and implemented without the active involvement of the people. Participation has, therefore, become imperative word of development and that every development project embraces "participatory approach" [28]. Participation in development perspective requires all communities, organisations, stakeholders and responsible bodies be involved in and have a stake in decision making related to development activities that will affect them in the short and long periods. The outcome of genuine participation is effectiveness and sustainability for development projects in general and water resources project inclusive calls for community management.

Community management of potable water projects has been a burning and contemporary issue in the developing world. Community management refers to the capabilities and willingness of the beneficiaries to take charge and determine the nature of development affecting them [23]. In the context of water and sanitation systems, community management means a community taking on the full range of management tasks related to the operation and maintenance of water supply systems (setting tariffs and collecting payment, carrying out routine maintenance, and making decisions about system extension) [29].

Thus, community management concerns all issues pertaining to responsibility (ownership), decision making authority and control over development project and system operations [21]. Common principles of community management include participation, control, ownership and cost-sharing [30]. The community members must participate in the development process which must continue indefinitely, have direct or indirect control making strategic decisions from the design phase to long term operation and maintenance, have legal and perception of ownership of the system and contribute to recurrent costs.

The provision and sustainable management of potable water is an important issue particularly to African countries and other developing countries across the world. Therefore, many factors come to play when considering an effective community management system for sustainable potable water in rural communities in Africa and, particularly in Ghana. These factors are both internal and external factors and need serious attention because they make important contribution to the success and failures of potable water projects in rural communities in particular [19]. According to Schonten and Morriarty, the internal factors may include strong traditions and norms, lack of community cohesion, misplaced priorities, inadequate of management skills, unrepresentative water

communities, technical issues and financial problems [31]. These factors must be prioritised and given the necessary attention under the concept of community management of potable water.

External factors, on the other hand, include some environmental issues, non-existence or weak supply chain, lack of standardised technologies, poor design and construction faults, and political interference. These have devastating impact on the sustainability of the potable water system and must, therefore, be handled properly [31, 32]. There is evidence that many potable water projects have failed in many countries due to some of these external factors. For instance, the misapplication of exogenous organisational models to different context in attempt to enhance participation in the water sector in Bangladesh woefully failed to materialise [33]. This was because the implementers did not understand the community structures, including their traditions and organisational systems. Therefore, implementers of potable water projects in Ghana and other African countries must learn from this experience. They must seek to understand and take into consideration the indigenous water management and organizational practices during the implementation of potable water project activities.

Madulu suggested that there should be much emphasis on demand-driven and community participation approaches in order to ensure sustainability of water services. He found that these approaches have resulted in a successful implementation of community water system in Tanzania due to high level of community willingness and participation in the project activities. There was much involvement of members of the beneficiary communities from the planning to the implementation stage [34]. Doe and Khan emphasised that a successful and sustainable potable water supply and sanitation services under the community management approach have certain features. Some of these features include, 1. Communities are typically rural with a small population and rudimentary occupation such as farming; 2. There is participation of communities in decision-making, planning and service establishment; and 3. There is Strong presence of social pressures (community cohesion), expressed in the ownership of the project [35]. Apart from the existence of common features as identified by Doe and Khan, there is more to be taken into account for the sustainability of community managed projects [35].

Harvey and Reed argued that for community management of potable water projects to be sustainable then; 1. The Communities should have a range of technologies and information in order to make an informed choice; 2. The communities should be willing and able to manage the operation and maintenance of the project, perhaps, through a third party to carry out maintenance and repair; and 3. The

communities should be willing and able to finance the cost of operation and maintenance in the long term [32].

Mtinda also found that some water schemes were, in the long run not successful due to poor management system and interference by politicians and village government leaders [19]. He found misuse of funds and lack of trust in the village water committees as some of the obstacles to effective management of water in rural Tanzania. Village water committees were not independent and free bodies to run the schemes and usually run out of funds to maintain and repair water facilities.

The issue of provision and accessibility to quality drinking water in Africa is receiving attention from governments, donors, NGOs and other development partners. As a result, many African governments have set ambitious targets for increasing rural water supply coverage in line with international targets such as the past MDGs and the current SDGs. These targets include time-bound percentage coverage figures and appropriate service levels in terms of liters per person per day, water quality standards and distance of water points from dwellings. In achieving these targets, many African countries have put in place rural water supply strategies in the form of five-or ten-year operational plans [32]. Some of these strategies are typified by; 1. Setting of minimum quantities of water per person per day; 2. Water sector reforms that define water as an economic good and adopt an integrated approach to delivering water and sanitation services; 3. Decentralised approach to service delivery in which the role of the public sector at all levels is mainly to monitor, regulate and facilitate the performance of stakeholders in operation and maintenance; 4. Demand responsive approach to the delivery of community-based water supplies, for which users are responsible for managing operation and maintenance to ensure sustainability; 5. Capacity building and sector reform; and 6. Private sector provision of all goods and technical services, including the provision and distribution of spare parts.

Other strategies include but not limited to: 1. The integration of hygiene education with the provision of water and sanitation facilities; 2. Gender mainstreaming at all levels of sector activities; 3. Appropriate technology and research activities; 4. Cost recovery in order to ensure sustainability; 5. Monitoring stakeholder, system and sector performance; and 6. Integrated Water Resource Management (IWRM) promoting economic use of water.

The combination of these strategies in the provision and management of potable water has proved to be producing promising results in most African countries, including Ghana. It is important to add that managing rural potable water supplies requires a specific small-scale approach that differs

markedly from the industrial system applied in densely populated areas [36]. This shows the essence of community participation and management of potable water.

### 3. Methodology

The study adopted a qualitative approach of research as it involved the interpretation of the phenomenon. According to Newman, qualitative research approach allows detailed investigations of individuals, groups, institutions or other social units and focuses on understanding the particular case in its complexity [37]. The design for this study is a case study. The use of case study as a research design is extensively utilised. A case study design of a research is well suited for projects in which a researcher aims at gathering contextual and detailed information and knowledge about an individual or social phenomenon [38]. The case study method is an approach to studying a social phenomenon through a thorough analysis of an individual case.

The population for the study included officials from the Wa West District Assembly who were in charge of provision of potable water within the district, opinion leaders and residents of Gadi, Chogsia and Gbaalwob communities. The sample size for the study was 72 respondents. Purposive sampling technique was employed in selecting 60 residents, 20 from each of three communities), 3 opinion leaders of each of the three communities as well as 3 officials from the District Assembly and Small-town water system committee. The respondents were taken through an in-depth interview. The study was also complemented with three Focus Group Discussions (FGD) ranging from six to eight membership specifically, one FGD for each of the three communities.

The purposive sampling technique, which is a non-probability sampling technique, was employed to select the key informants from the water management board at the district level and from the Gadi, Chogsia and Gbaalwob communities who were knowledgeable and responsible for developmental issues and water resources management in their respective areas of work. Purposive sampling therefore allows for the picking of interview objects that fit the focus of the study based on the judgement of the investigator (Sarantakos, 2005) [39]. In the judgement of the researchers, the selected individuals were usually those that could provide the best information to achieve the objectives of the study. They were people with the required knowledge and experience on the subject matter of the study and were willing to share it with the researchers

FGDs were also held with six selected opinion leaders and residents or beneficiaries of the small-town water supply system in the Gadi, Chogsia and Gbaalwob Townships. Participants consisted of men and women who were

purposively selected for discussions. The FGDs became appropriate because it was designed to explore the perceptions, experiences and understandings of a group of people who have some experience in common with regard to the subject matter of the study [40]. For trustworthiness, the instruments for data collection were proof read and pilot-tested. The researchers personally went to the field and were directly involved in the gathering of data. All processes involved were fully observed by the researchers.

Data collected from the in-depth interviews and the focus group discussions were analysed after every session to identify gaps and emerging issues. Analysis and presentation of results were done through detailed description, transcription/direct quoting and paraphrasing of information given by the respondents. Finally, the results of the study were analysed and presented under themes built from the research objectives.

Ethically, the issues of anonymity and confidentiality which included the protection of respondent identity and information given were assured. Also, single respondent in this exercise were not forced in any form to take part in the study. All respondents who took part in the study did that voluntarily. Finally, the researchers in this study did not use any deceptive tactics to lure the respondents to respond to questions instead, the respondents only answered the questions based on their understanding.

## 4. Results and Discussions

This chapter is presented in the following order: demographic characteristics of respondents, management of sources of water, and the mechanisms for promoting community participation in the management of potable water sources in the Wa West District of Ghana.

### 4.1. Demographic Characteristics of Respondents

The first demographic data was collected on sex of respondents. The respondents comprised 29 males and 31 females. From the above, it could be seen that there is a difference between male and female respondents. This may be attributed to that fact women use more water because of their involvement in household chores, including cooking food, washing clothes and dishes, and many other domestic activities. It may also follow the fact that female population in Ghana is generally more than male population.

Secondly, the age of respondents was also looked at. The age of respondents ranged from 18 to 58 and above. The results show that majority of the respondents were between the ages of 28 and 37 years. The study did not consider children, thus,

0-17 years age group because they could not have provided the necessary information. Eighteen of the respondents were found within the age group of 28-37 years, followed by 15 within 38-47 age group. Also, the age groups of 18-27 and 48-57 had same number of 12 respondents each, while 3 respondents were 58 and above. The results show that people between the ages 18 and 57 are more engaged in water management activities because they are still active to undertake any activity. They form majority of water users and hence, were the best people to be engaged in water management issues at the community level.

The household size of respondents was looked to ascertain the quantum of water they may use. Thirty-three respondents representing 55 percent have household size of between 4-6 members, 25 percent of the respondents with 7-9 members, while 20 percent has members between 1-3. No household was found to have more than 9 members. The sizes of households in the communities depict a rural setting and also revealed the possible demand for water and water-related services in each household.

#### **4.2. Management of Sources of Water in Wa West District**

The study revealed that the available water sources in the study communities include boreholes, dams, rivers, rainwater, streams and dug-out walls. Water from these sources are used for various domestic and farming activities by the community members. The boreholes mostly serve as their sources of drinking water while the other sources are used for activities such as dry season farming (vegetable cultivation), drinking water for livestock, washing of clothes, washing of dishes, and for building purposes, among others. It is important to say that water from boreholes is equally used for washing of clothes and dishes and in cases when it dries up during the rainy season, borehole water is used for building purposes.

The study has also shown that, water from dams, rivers, streams and dug-outs walls sometimes serves as a source of drinking to the community members when boreholes are broken down. According to the study, water from these sources is usually not treated before drinking and this exposes the populace to various water-borne illnesses. Many of these water sources are contaminated by faecal waste matter of both humans and livestock as well as other waste materials that the people generate.

The study also examined how these sources of water in the study communities in the Wa West District are managed. The study showed several ways in which the communities manage the existing sources of water and of particular interest to this study is how potable water sources are managed. The study revealed that the existing potable water

sources were managed through the following:

First there is regular maintenance by community members. The boreholes or water facilities are maintained and serviced on regular basis by the community members to keep the facilities working. Broken down boreholes systems are maintained by identifying and acquiring the damaged parts and fixing them through the people's own initiatives.

The study also showed that the communities have instituted committees that superintend over the activities and other-related matters on potable water facilities in their respective communities in the district. The committees usually consist of five members of which, at least, two are women. The members of the various communities are usually trained by the Assembly and other providers of potable water on the maintenance and/or repairs of the boreholes systems when they break down. The committee members are also responsible for organising the community members for any activities that need to be done regarding the maintenance of water facilities in their respective communities. They disseminate information regarding the rules and regulations on the use of the facilities. A male interviewee noted this in the Gadi community:

*"We have formed a committee of five members; three men and two women to oversee activities regarding our boreholes. They have been trained on the maintenance of the boreholes. Anytime there is a break down, they will go and buy the parts and come and fix it. They give us any information relating to the boreholes. They are also responsible for enforcing the regulations on proper use of the boreholes. They impose a fine on anybody who violates the regulations"* (Male interviewee, in-depth interview, Gadi community).

The study also showed that community members usually contribute to mobilise funds for the repair and maintenance of potable water facilities in the communities. These contributions are made on monthly basis and the amounts paid by individual members per month were pegged at reasonable levels to enable every individual in the community, whether rich or poor to pay. The monies are collected by the committee members selected by the communities to oversee the activities of the water sources. A respondent in Chogsia community noted:

*"We contribute on monthly basis to take care of any maintenance work on the boreholes. Every adult individual in this community contributes. The monies raised are saved with the banks and managed by water committee that we have formed. No other person is allowed to handle the monies. It is mandatory for all of us to pay our monthly contribution. People who refuse to pay are fined and are made to pay penalties. The monthly contributions are binding on all community members"* (Female discussant, focus group



discussion, Chogsia community).

Secondly, the results also revealed the existence of a committee known as Water and Sanitation (WATSAN) Committee which is formed by Community Water and Sanitation Agency (CWSA). Its membership comprises individuals selected from different communities within a zone and are trained to manage water and sanitation issues in the communities in that zone. They move from community to community to inspect potable water sources and sanitation within the sources.

The findings from the communities show that the existing sources of potable were not adequate to meet the potable water needs of the community members in the Wa West District. An overwhelming majority of 59 of the respondents out of the 60 indicated that the existing boreholes in their communities were woefully inadequate to meet their water demand and needs. Only one respondent said the available boreholes were sufficient for water needs of the community. This reveals a wider gap in rural potable water supply in the communities. This confirms the findings of WHO/UNICEF that access to safe water disparity gap in Africa is higher in rural communities than urban areas with a percentage of 45 percent and 83 percent respectively [16]. It was also revealed that the available boreholes and dams were provided by different stakeholders in the communities. From the findings, the responsible agencies for the provision of potable water supply in the communities included the Central government, District Assembly, missionaries, the World Vision International and the Community Water and Sanitation Agency (CWSA).

### 4.3. Community Participation in the Management of Potable Water

The study showed that community members participate in decisions and activities relating to potable water provision and management. On whether or not respondents participate in taking water and water-related decisions in their communities, majority of the respondents said that members of the various communities are actively involved in potable water provision and management decisions. Three respondents said that community members were not usually involved in the decision-making process relating to potable water supply and management.

From the above, the study explored how community members get involved or participate in potable water supply and management decision making in the communities. The findings show that community members participate in the process from the initial stages of planning through to the implementation stage. The people participate through several ways, including the mobilisation of funds for maintenance of broken down boreholes, organising meetings to discuss water

issues at the community level, making group contributions on towards servicing and repairs of available boreholes, attending community meetings on potable water supply systems management and making individual monetary contributions to take care of water facilities.

The participation of community members during the planning and implementation of potable water supply in rural communities is important for sustainability reasons. The study found that community members' participation in the decision-making process of potable water supply systems results in total community ownership of the facilities and, consequently this leads to good management practices. This finding agrees with Lockwoods findings that one of the common principles of community management and participation is community ownership of potable water facilities after donor withdrawal [30]. The findings from the study show that community members are actively involved in potable water management and individual members in the communities demonstrate involvement and participation through the performance of various tasks. With the sense of community ownership of potable water supply system, community members were found to have instituted weekly cleaning exercises that are carried out within and around the borehole facilities. The study also found that community members have grown flowers around the facilities as a way of beautifying the surroundings of the facilities. They weed around the facilities during the rainy season to prevent the surroundings from becoming bushy and, sometimes spray the surroundings with herbicides to control weed growth. This keeps the surroundings of the facilities tidy. The reservoirs of the facilities are emptied and cleaned on regularly basis to store clean water for livestock to drink. In Gbaalwob community, a male female interviewee noted:

*We (women) have been cleaning around the boreholes on weekly basis. We do it section by section on every Friday of the week. If the women in one section cleans it this Friday, a different section will do same next Friday. It is the duty of every married woman in this community to take part in the cleaning exercise except she is sick or has travelled. Any woman who fails to turn up for the exercise without permission from the water community is five Ghana Cedis (GHC5). So we are all committed because it is for our own benefit. We use the boreholes and so we owe it a duty to keep their surroundings clean” (Female interviewee, in-depth interview, Gbaalwob community).*

According to findings from the study, the level of participation of community members in potable water management process has to do with the commitment shown by community members through regular contribution of money towards repairs and maintenance of water facilities. They noted that it was through their active involvement that

they got to understand that the water facilities were meant to benefit them and so they own them and must ensure their sustainable functioning. Understanding it from that perspective, they have shown commitment over the years by regularly making contributions on monthly basis to replace broken down parts and also for the general maintenance of borehole facilities in the communities. The communities have opened accounts with some banks where monthly contributions are saved. It was found that communities participate through holding community meetings to discuss water related-matters and how existing facilities can be improved. According to the community respondents, the number of people in the communities keep increasing which results in the number of users of potable water and, consequently this puts pressure on the available facilities. So, it is through community meetings that they discuss and deliberate on how to acquire additional facilities (boreholes) through making appeals to relevant stakeholders such as the central government represented by the Wa West District Assembly, missionaries and non-governmental organisations. They also discuss management issues relating to existing potable water facilities, including proper use of potable water in the community.

The findings also show that community members demonstrate a high sense of duty by regulating their use of boreholes in the communities. One of the ways by which they do this was that every community member owes it a duty to prevent a colleague or any person from using the facilities abusively. Children of certain ages are not allowed to pump water from the boreholes to prevent them from mishandling the facilities to wear and tear. The findings show that communities in the Wa West District actively participate in potable water supply and management decisions. An overwhelming majority (45) of respondents said the entire communities were involved in the decision-making processes on water supply and management, while 15 of the respondents had a contrary view that not all community members were not involved in decisions relating to potable water supply and management.

## 5. Conclusions and Recommendations

Potable water is a basic need in every community and should be made accessible and affordable to community members on daily basis. The findings from the study have brought to the fore some of the various types of water facility with boreholes serving as the single main source of potable water to rural communities in the Wa West District. It was also revealed that the existing boreholes in the study communities were not enough to adequately meet the potable water needs

of the people which the community members were unanimous about. They are, therefore, forced to resort to drinking water from dams and rivers anytime a borehole breaks down until it is repaired. This exposes the people, particularly children to water-borne ailments.

In managing these existing facilities, the community members have instituted monthly household or individual contributions to provide funds for repair and maintenance of broken-down borehole facilities. They also form committees to oversee activities and repair works of the facilities. The committee members are trained by officials of the Community Water and Sanitation Agency to repair and maintain the boreholes. They enforce community regulations on the proper and effective use of potable water facilities in the communities to ensure sustainability.

Communities participate in decisions relating to potable water supply and management prior to and after provision. Community members are engaged by the District Assembly and other partners on management and sustainability of facilities before boreholes are drilled and installed for their use. The engagements usually take the form of community durbars where every community member participates in the discussions. In terms of management issues, community members get engaged through making regular monthly contributions towards maintenance of facilities, organising clean-up exercises to keep the environment clean, attending meetings to discuss water related matters, including sanitation and forming committees to enforce water-use regulations in the communities.

Based on the findings of the study, it is recommended that boreholes should be mechanised and commercialised. Among other water facilities, one borehole in each community should be mechanised and the operation commercialised as well. The mechanisation will ensure more distribution of water from one borehole site and hence, serve many people with adequate water.

Also, communities should institute strict and stiffer regulations and punishment (bye-laws) for people who deliberately refuse to make their monthly contributions towards present and future maintenance of boreholes and water-related services in the communities. Bye-laws should be enforced to make sure persons who fail to attend meetings without tangible reasons are fined. This will deter other people from absenting themselves from meetings and ensure popular participation by all community members.

The government, through the Wa West District Assembly, should provide dams in the communities to provide water for activities such as livestock, building, washing, dry season farming and other-related domestic activities. This will reduce the pressure on boreholes for water for such activities.

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