

**INSTITUTIONAL ANALYSIS OF URBAN WATER SUPPLY IN GHANA: THE  
CASE OF ACCRA METROPOLITAN ASSEMBLY**

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**A THESIS PRESENTED TO THE UNIVERSITY OF AALBORG IN PARTIAL  
FULFILLMENT OF THE THESIS REQUIREMENT FOR THE DEGREE OF  
MASTER OF SCIENCE IN ENVIRONMENTAL MANAGEMENT**

**AALBORG, DENMARK, 2010**

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## **Author's Declaration**

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiner.

## **Acknowledgements**

I want to profoundly thank everyone who helped me along this path. Firstly, I want to thank my supervisor, Professor Frede Hvelplund, for his advice, his tips and his stories. Thank you **Frede**, for listening to my worry and complain, and for helping me sort out the best direction to take with this thesis. Your expertise and feedback has been invaluable. I also want to thank Isaac Kwamena Arthur for his motivation and guidance throughout my stay and study in Aalborg.

I would like to extend my gratitude to the faculty, staff and other graduate students in the Environmental Management Department. You opened my eyes to many new possibilities and helped me find my own direction.

I am also grateful to respondents in Ghana for taking the time to listen to me and for the feedback they provided.

Most importantly, I want to thank my friends and family for their support and encouragement throughout this process and for believing that I would eventually finish. Thank you Mom, Rose Afua Akabua for keeping me on track and inspiring me every day to work ahead. A special thank you most deservedly goes to Gladys – for commiserating with me, for helping me keep things in perspective and for your advice and companionship.

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## **List of Abbreviations**

ATMA	Accra Tema Metropolitan Area
CWS -	Community Water and Sanitation
DANIDA -	Danish International Development Agency
DFID -	Department For International Development
EIA -	Environmental Impact Assessment
EPA -	Environmental Protection Agency
GWCL -	Ghana Water Company Limited
GTZ -	German Technical Cooperation
IDA -	International Development Association
MDG -	Millennium Development Goal
MLGRD -	Ministry of local Government & Rural Development
MWH -	Ministry of Works and Housing
PURC -	Public Utilities Regulatory Commission
PPP	Public Private Partnership
PWD	Public Works Department

SWAP	Sector Wide Approach Program
UESP -	Urban Environmental Sanitation Project
USAID -	U.S. Agency for International Development
UNICEF-	United Nation International Commission Environment and Food
WRC -	Water Resources Commission
WAG -	Water Aid Ghana

## **Abstract**

This study set out to investigate how the inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic user. A descriptive, qualitative design was adopted. Key informant interviews were used to generate empirical data. The data collected found that there was a general lack of interest among actors involved in urban water supply process and non involvement of some actors in the process. It was also revealed that lack of political will manifested in lack of continuity of projects of previous governments and diversion of water sector funds for other uses, and huge consumption from industries such as Coca cola, Unilever, and Accra Brewery act together to suffocate urban water supply. Additionally, the findings show that uncontrolled urbanization exists on a massive scale and strangulates efforts to supply water because it makes it difficult for Ghana Water Company to map out strategy for service delivery and to wean bloc consumers. Based on these, it was recommended that the Sector Wide Approach (SWAP) put in place by the water sector to bring all stakeholders in the water sector be speed up, decentralised and more resources committed to its implementation. As a short term measure, Tanker Service Guidelines should be established to regulate the activities of water tankers. However, comprehensive programme should put in place to expand the water service lines with an aim of eliminating the water tanker operators. Finally, estate developers should work in collaboration with town and country planning and lands commission to have all lands service or developed before being sold out.

## **Summary of the Study**

This study focuses its attention on institutional analysis of urban water supply in the Accra Metropolis. The study begins with an introduction which includes the problem analysis. This was to provide the context for the problem formulation. A problem tree which picturesquely presents the focal problem shows the causes and effects of inadequate water supply. In order to address these issues, research questions were raised and used as a framework to guide the research. Following this is the methodology of the study, which outlines the type research design adopted, since the study focused on the collection of qualitative rather than quantitative data, a narrative descriptive, Phronetic research design was adopted. The actors and institutions involve in the urban water supply constituted the target population for this study. In order to obtain the most relevant answers, the study population was directed to Ghana Water Company Limited (GWCL); Public Utilities Regulatory Commission (PURC) and water consumers (households, industrial, business and agricultural). While purposive and snowball sampling were used to select the respondents, in-depth interviews were used to collect data from the sampled respondents. The characteristics of the methodological approach, strengths and weaknesses are discussed in relation to the problem formulation.

The theoretical framework within which the study was carried out followed the research methodology. Thus, Scott's institutional theory which consists of cognitive, normative, and regulative structures were extensively discussed and refocused into the context of the

actors and institutions involve in water supply. This leads into the next section, which looks at the institutional framework of actors involve in the water supply followed. Specifically, the evolution of water supply in Ghana is examined. A thorough discussion of the Ghana water supply policy follows. Following this is an overview of roles and responsibilities of key water sector institutions. Urban water supply policy is discussed and lastly, gaps in the understanding of the institutional framework of actors involve in the water supply are identified, synthesized and refocused into the context of this study. The next chapter dwells excessively on the basic details of water supply in Ghana. Issues exerting pressure on water supply such as extended demand which borders on rapid population growth and the growing incidence of slums are discussed. The consequence of the gap in supply and demand on the concrete household situation is examined. The chapter concludes by exploring factors that account for the gap in demand and supply of water. The data analysis and discussion are covered in the next chapter. The data were analyzed in line with the important issues of the study including stakeholder interest in urban water supply, political willingness and institutional framework for water supply and urbanization and water supply. Chapter seven is the conclusion of the study and provided ways the water supply institutions can be improved and what can be done to make this happen. Chapter eight is the limitations of the study and based on these limitations, suggestions for future research are covered in chapter nine thereby drawing the curtains of this study.

## **1.0 INTRODUCTION**

### ***1.1 Problem Analysis***

The management of natural resources receives increasing attention all over the world. The unsustainable exploitation and supply of natural resources endanger the existence and welfare of current and future generations. One of these resources is water, which has increasingly become a locus of concern in several countries. The efficient management of water resources is vital for its sustainable access and use. Therefore adequate management practices are needed (Balint, Forkutsa, & Reis de Freitas, 2002). In Ghana, several institutional arrangements have emerged over the years all focusing on the management of water. Comprehensive reforms of the Ghanaian water sector were initiated by the Bretton Woods Institutions in the 1990s. The Government of Ghana was obliged to restructure the sector by establishing regulatory bodies, opening the sector to private sector participation and separating responsibilities for urban water supply from rural water supply. Following this, the Ghana Water Company Limited (GWCL) was created to be solely in charge of urban water supply (Fuest & Haffner, 2007; Ministry of Water Resources, Works & Housing [MWRWH], 2007; UNESCO, 2005).

In order to introduce greater efficiency in the supply of urban water, public private partnerships (PPP) were developed. In this arrangement, private companies were invited to take over the Ghana Water Company Limited by a lease contract. However, numerous factors, among them are massive anti privatization campaign and global economic trends

unfavourable to private investment, particularly in the water sector, caused a comprehensive revision of the policy and the modification of the public private partnerships from lease to short-term management contract with an ensuing affermage concession in 2004 (Fuest & Haffner, 2007). This process was to be supported by external donor agencies substantially upgrading the water supply infrastructure. However, Fuest and Haffner (2007) doubted the ability of the policy to lead to a sustainable system of urban water supply and substantial improvements in the supply situation to the poor. They observed that patronage relations were not sufficiently addressed and alternative PPP options based on local potential had not been considered, and concluded the case of Ghana raises issues of imposed PPP policies that are not based on adequate information about local, national and international framework conditions.

In an attempt to complement earlier efforts, the National Water Policy came into effect in February 2008 and focuses on three strategic areas: water resource management; urban water supply; and community water and sanitation. In spite of external assistance, GWCL continued to suffer from massive financial, managerial and technical problems. The gap between supply and demand increased while demand for potable water in the cities was on the rise and the supply systems were degenerating (Fuest & Haffner, 2007). Several factors including lack of coherence in new water policy formulation has also led to new problems in the Accra Metropolis making water scarce and has to be transported over long distances by road or on foot and sometimes not available for some period of time, the cost of drinking water absorb a significant proportion of the average daily income of poor consumers. In

fact, the problem of water supply shortage is among the problems which require greater attention and action despite the various strategies to make water accessible to all inhabitants in Accra (Kofie *et al.*, 2008; Water Aid Ghana, 2008). The purpose of this research is to do gain a better understanding of how the inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users.

## **1.2 Problem Formulation and Research Questions**

Access to adequate water supply is not only a fundamental need and human right; it also has considerable health and economic benefits to households and individuals. The lack of access to water contributes to deaths and illness, especially in children. Access to water also means that the considerable amount of time women and children spend for fetching water could be spent more effectively on other tasks, improving their economic productivity, a key component in poverty alleviation efforts (WaterAid Ghana, 2008). However, Ghana Water Company Limited's unaccounted-for water (UFW) stand at about 50 per cent of total output, the volume of water that is effectively sold is 280,000m<sup>3</sup>/day. This figure is about a third of the daily demand of 763,300m<sup>3</sup> (WaterAid Ghana, 2008).

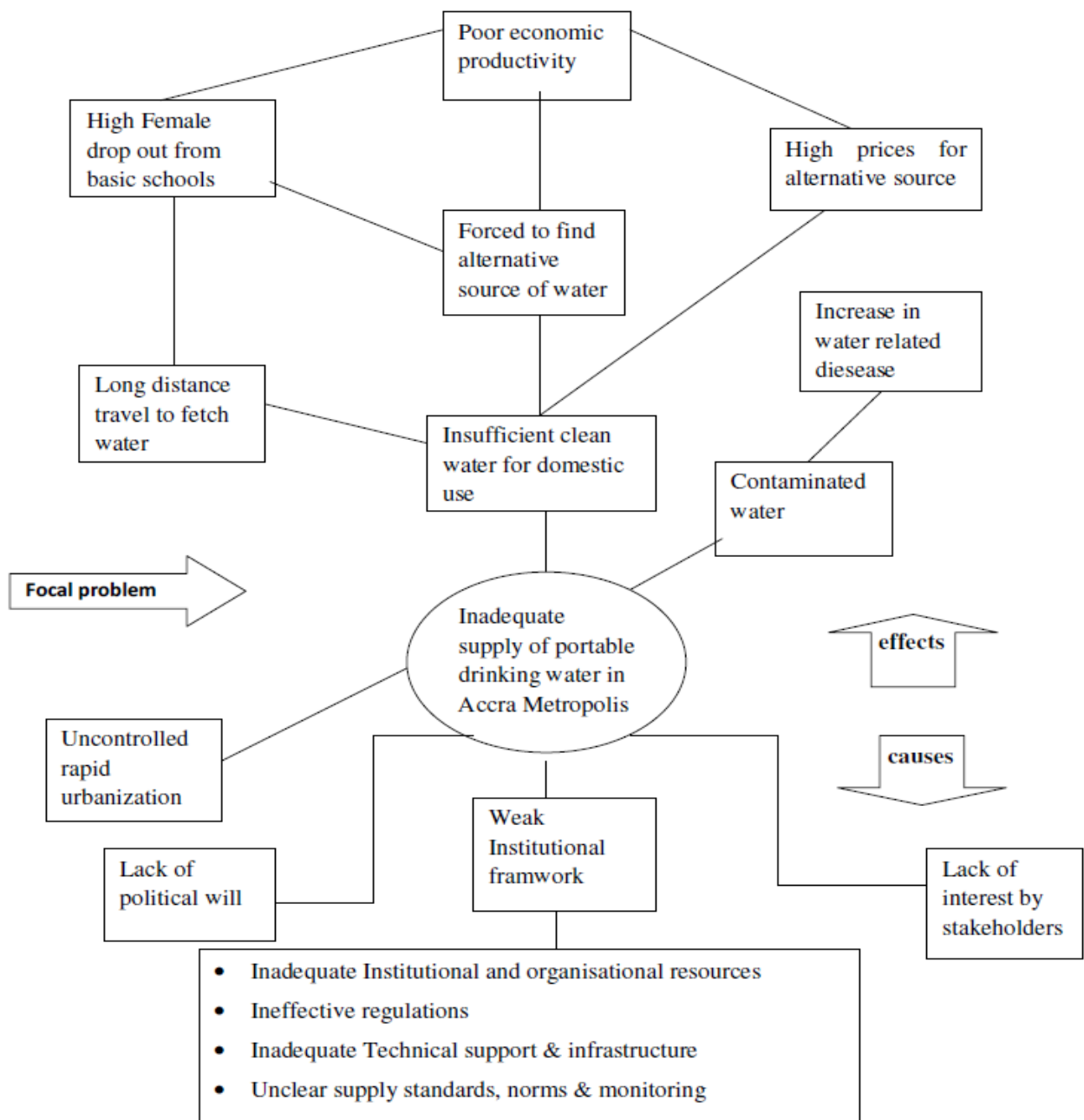
According to Fuest and Haffner (2007) lack of compliance with proposed reforms on the part of some actors of the public agencies involved in urban water supply and the fact that the reforms did not sufficiently address the important issues of sector coordination in the



face of weak national institutions and structural interdependencies based on patronage relations among the government, regulator, provider and clients contribute to the perennial problem of water shortage in the Accra metropolis and beyond. The following are the research questions that highlight the main thrust of this study. In specific the aim of this report is to answer the basic questions of:

- How has the inadequate institutional structure in the Ghana water sector contributed to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users?
- In which way should the water supply institutions be improved, and what can be done to make this happen?

In order to understand the problem and answer this basic question, Figure 1.1 is the problem tree showing the potential causes and effects of inadequate water supply in the Accra Metropolis?



1.1: Problem Tree showing the causes and effects of water supply in Accra

The purpose of this research is to do gain a better understanding of how the inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users. Towards this end, Figure 1.1 has been developed to describe and depict the relationships among the causes and effects of the inadequate supply of portable water recognizing that relationships among them jointly gave rise to the inadequacy in water supply in the Metropolis. This situation has ignited this study in the Accra Metropolis and has become focal problem which this study is seeks to address.

From Figure 1.1, the arrow pointing upwards represents the effects of inadequate supply of portable water in the Accra Metropolis. They include travelling long distances in search of water, high female drop out from basic schools, poor economic activity, high prices for alternative sources of water, users being forced to find alternative sources of water, increase in water related diseases, and insufficient clean water for domestic use. The arrow pointing downwards represents the explanatory variables which gave rise to the inadequate supply of portable drinking water in the Accra Metropolis. These include: lack of stakeholder interest, lack of political interest/will, and uncontrolled rapid urbanization. Another cause of the inadequate water supply is weak institutional framework in terms of diminished resources, ineffective regulations, inadequate technical support and infrastructure and unclear supply standards, norms and lack of monitoring. This situation raises questions about how the inadequate institutional structure in the Ghana water sector contribute to poor operations of the water supply in Accra as the main source of water for both industrial and domestic users. Understanding how the inadequacy in

institutional structure affect water supply in the Metropolis is important for proposing measures to improve the situation. It is imperative then that this study is conceptualized as shown in Figure 1.1 in order to provide the framework for approaching the study.

In order to examine the inadequacy of institutional structure in the Ghana water sector and how it contributes to poor water supply and also to *answer the main question, the following sub questions have been formulated to serve as a guide for the data collection and analysis in chapters four and five:*

- How does stakeholder interest affect water supply?
- How does water institutional framework affect water supply?
- How does the political system manifest its willingness to support water supply in Ghana?
- How does urbanization in Accra affect water supply?
- How have the actors and institutions affected urban water supply?
- How does government regulation for the institutions support the provision of urban water?
- In which way can the water supply institutions be improved?
- In which way will the political system be able and willing to influence these institutions?

### **1.3 Magnitude of Demand and Supply of Water on Consumers**

The effects of inadequate water supply in the Accra metropolis has brought untold hardships among households/families, businesses and agricultural users.

Access to water has not only become a key factor in choosing where to live, but also the rent rate to pay. The same property will cost less if there is no reliable water supply. It is therefore relatively cheaper for people in low income bracket to live in these relatively cheaper rent areas (PURC, 2005). The consequence of this is that residents in these cheaper but no water areas are always seen in the city of Accra carrying yellow gallons locally referred to as "*Kufour gallons*" (named after J. A Kufour, a former of president of Ghana) signifying his regime inability to supply water to households. Hence, a lot of energy is expended in search of water, which could be greater than one third of daily food intake. This pattern replicates in the basic schools. Basic schools water demands especially for cooking is supplied by girls, who are usually sent to fetch water taking additional time away from their studies and play time. Household chores such as fetching of water keep many girls out of school, and the energy they use carrying out these chores affects their performance in school. At times girls are sent to fetch water during the night (WaterAid Ghana, 2008). This situation has not only brought high female drop out from basic schools, but pronounced lateness in basic schools due to long distance travel in search of water. Figure two depicts the situation.



Figure 1.2 Water Supply Challenges in Parts of Accra

At the household/family level, residents living within Taifa, Ashongman Teshie, Nungua, Madina, Adenta and La among others who do not have access to piped water within 1 kilometre may risk the chance unknowingly paying far more for water. For residents in these areas getting water for basic needs, means paying between six and ten times the price for a bucket which holds four gallons of water, the cost of a four gallon bucket of water is about ₵60 (US\$0.007) as set by the Public Utilities Regulatory Commission (PURC). Yet, residents in the above-named suburbs of Accra are paying between ₵300 to ₵500 (\$0.03 - \$0.06) and in some instances ₵1000 (\$0.1) for a bucket of potable water. In a study by WaterAid Ghana (2008) this trend pertains in other parts of the Accra metropolis. Meanwhile, most of the residents in these areas are in low income bracket. But water is a

basic need and many of these residents spend a huge chunk of their budget on getting water, thereby worsening their plight and exposing them to perpetual straitened circumstances.

In addition, household consumers have adopted various means to cope with the gap in demand and supply of water. On the one hand, during times of difficulty in getting access to water, household consumers along the coast (including Teshie) used sea water for bathing. After which few cups of fresh water is used to rinse (WaterAid, 2008). On the other hand, the gap in demand and supply of water is filled by private water tankers (unauthorized water vendors) which make residents in some deprived areas to buy water from the tankers between ₵200,000 (\$22.47) and ₵300,000 (\$33.71) per 1000 to 2000 gallons of water.

Depending on the size of the family/household, the water can last for a month or more. This amount is also too much to pay monthly for water since some families might end up buying about ₵500,000 (\$56.18) worth. What has been said so far could be an indication of the existence of lapses in the country's water supply system, especially in urban cities of the country, of which the poor household bore the brunt the most (WaterAid Ghana 2008).

#### ***1.4 Operational Definition of Terms***

The concept of *institution* as used in this refers to the actors and stakeholders whose actions and inactions affect urban water supply. Though there are innumerable actors and stakeholders in the water supply sector, GWCL, PURC and water consumers comprising households, business and agricultural categories were canvassed for this study.

#### ***1.5 Justification for the Study***

The failure of strategies used in the past in the provision of water to those living in rapidly urbanizing developing communities has left many people still lacking safe water. Although majority of people without safe water live in rural areas, the worse water shortage conditions exist in the vast, urban informal and poor settlements, due to high population densities in such locations. This research would be shared with stakeholders and sector actors to encourage dialogue and inform planning across the sector. The outcomes and the associated outputs of this research would enable GWCL to equip its partners, other sector players, citizens and communities to engage with sector providers and policy makers. This would enable GWCL and partners to contribute to creating demand and supply side accountability in sector governance. Finally, this study would stimulate research in new and under researched areas that is likely to provide useful data to inform policy making, planning decisions and advocacy efforts at local and other levels.



## ***1.6 Structure of the Study***

The report has been organized into six chapters. Chapter one is the introduction to the study, and provides an analysis of the problem, formulation of the problem and research questions as well as the justification for the study. Chapter two outlines the research methodology including the research design, sampling techniques, methods of data collection and data handling procedures. This chapter further describes characteristics of the methodological approach, strengths and weaknesses in relation to the problem formulation, sources of data and information, in-depth interviews, documentation and archival records. Chapter three sets forth the theoretical framework and its relevance to the study. Chapter four gives institutional framework of the actors involve in urban water supply. While chapter five explored water supply problems in Ghana, chapter six is concerned with institutional analysis of urban water supply. Chapter seven is the conclusion and suggestions/recommendations on ways water supply institutions can be improved, and what can be done to make this happen. Chapter eight is the limitations of the study and chapter nine draws the curtains of this study by looking at suggestions for future research.

## **2.0 Methodology**

This chapter aims to describe and justify the applied research methods in this project. It will look at the different methods used in this report. In other words, this chapter is devoted to explaining to the reader why the chosen methodology was used and, if necessary to enable the replication of the report and to make the report understandable and transparent. When choosing a method for a project, several things have to be considered: what is being investigated and why? How will the “subject” be investigated, is it quantitative or qualitative research? What kind of research design will be used and how has the case study been chosen? The first paragraph of this chapter concerns the methodological approach. This is intended to give an overview of the project and make the transitions from one chapter to other.

### **2.1 Research Design**

This study focused on the collection of qualitative rather than quantitative data. Thus, a narrative descriptive, Phronetic research design was adopted in which non-probability sampling techniques was used to select the study participants. The use of non-probability sampling techniques in qualitative research is on the basis that it provides the ability to access otherwise highly sensitive or difficult to research study populations.

## 2.2. Target Population

The actors and institutions involve in the urban water supply constitute the target population for this study. For the purpose of clarity, Figure 2.1 shows an overview of historical and present actors and institutions and their interrelationships affecting water supply in urban areas. This Figure of the actors would guide data collection.

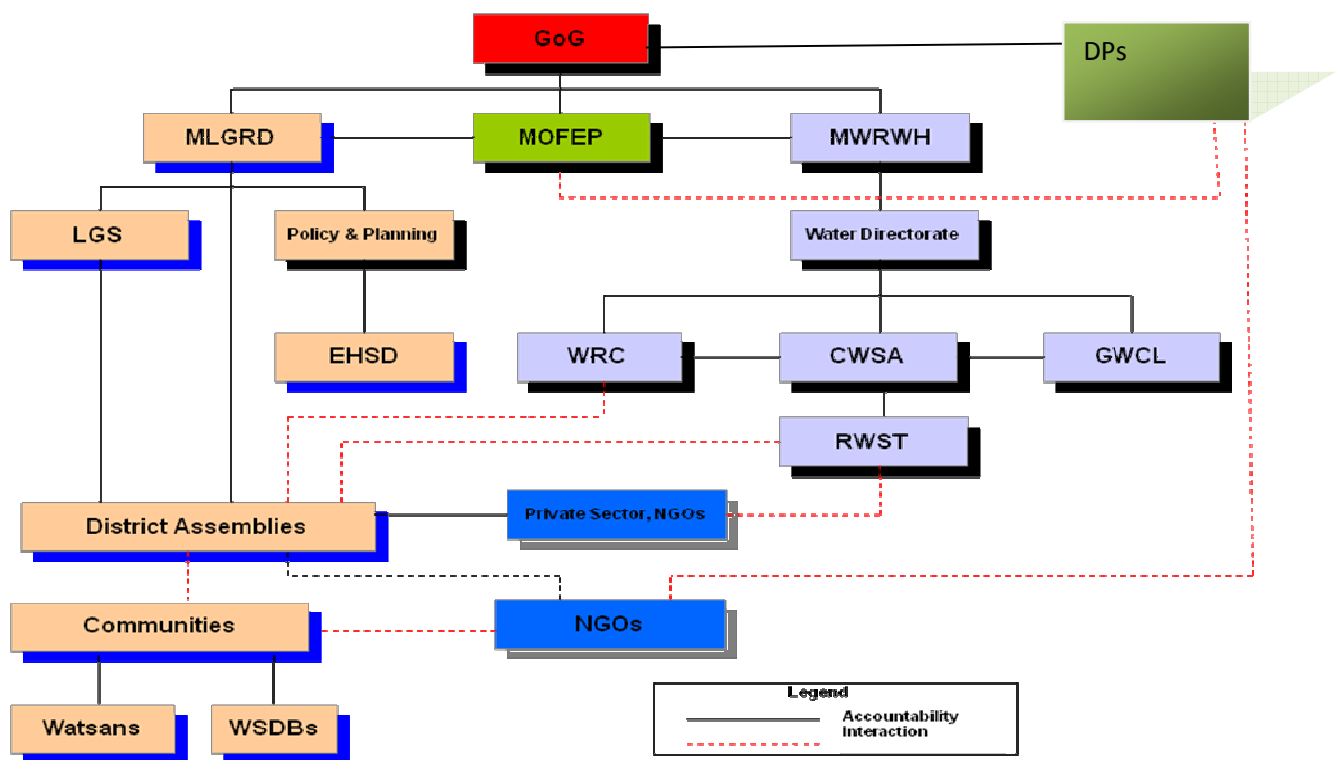


Figure 2.1: Overview of actors and institutions Source: (MWRWH 2009)

## 2.3 Study Population

In order to obtain the most relevant answers, the study population was directed to the following actors and institutions: Ghana Water Company Limited (GWCL); Public Utilities Regulatory Commission (PURC) and water consumers (households, industrial, business

and agricultural). In many ways, PURC is the main actor in tariff setting and monitors the performance of GWCL. Ghana Water Company Limited is concerned with the management of urban water supply and water consumers including households, industrial, business and agriculture are the users of urban water and are imbued with varied experiences of the water supply situation in the Accra Metropolis. The interrelationships among the actors and institutions selected for investigation is shown in Figure 2.2.

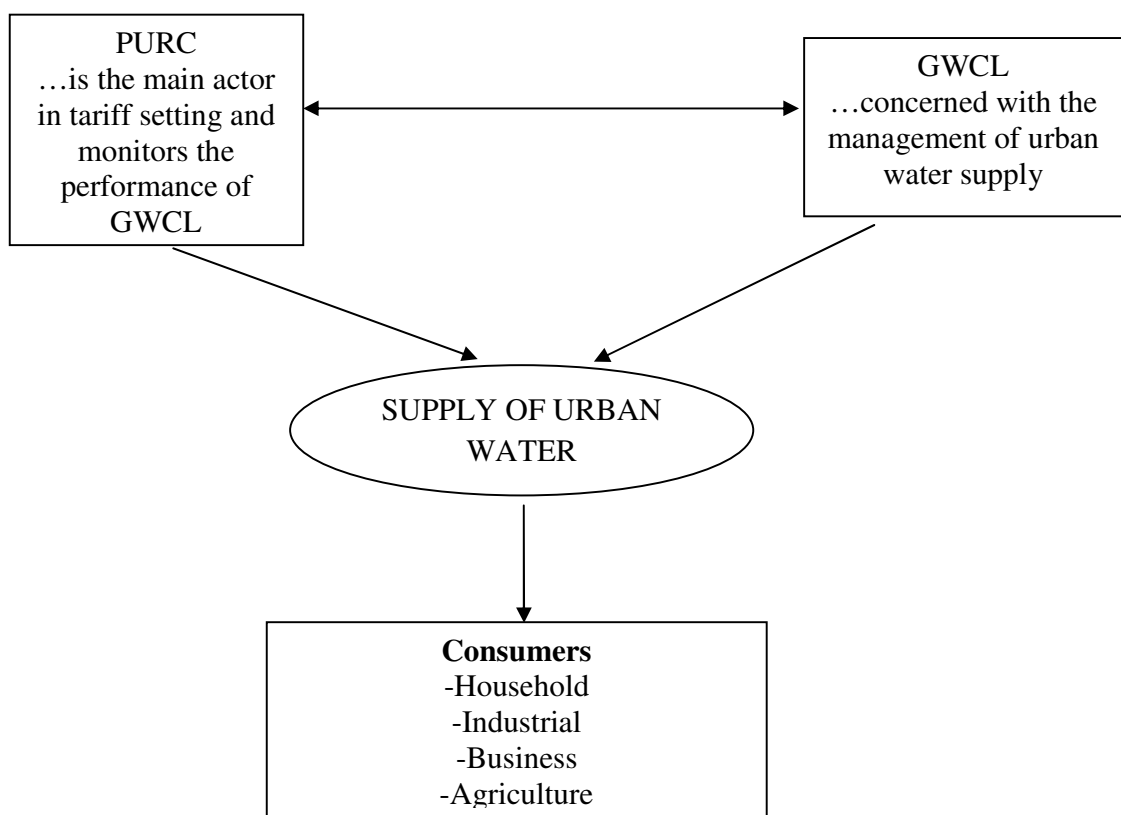


Figure 2.2 Overview of actors and institutions selected for the study

## **2.4 Sample Selection**

Purposive and snowball sampling were used to select the sample for this Phronetic research. The reason was to select cases that were informative and assumed to be familiar with some fundamental issues concerning urban water supply in the Accra Metropolis. At PURC, the water supply analyst was purposively selected. This is because the analyst was strategically placed in the sense that he was responsible for regulating the water tariffs as well as quantity of urban water service delivery. He was thus sampled for this study and is believed to be enough to provide the in-depth, rich data that were required in the study. At GWCL, the planning engineer was purposively selected. This is because he plans for the supply urban water in Accra. He also had technical expertise regarding the GWCL. Like the water analyst in PURC, the planning engineer is believed to be enough to provide the in-depth, rich data that is required in the study. At the consumer level, purposive sampling was used to select one consumer representing households, industrial, business and agricultural types. The purpose was to choose consumers in the aforementioned categories that adequately represented the characteristic of each category and whose experiences with water supply situation may be representative.

## **2.5 Methods of Data Collection**

Two key informant interview guides were developed to suit the circumstances of PURC/GWCL and consumers of water. The guides contain the list of questions and issues to be explored in the course of interview. In-depth interviews were used to collect data from sampled respondents. The in-depth-interview method offers maximum flexibility to

pursue information in whatever direction appears to be appropriate. So the interview process was less structured and the researcher allowed the respondents to influence the direction of the interview process. This enabled them the opportunity to tell in detail their own stories with regard to issues of how the inadequate institutional structure in the Ghana water sector has contributed to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users and ways the water supply institutions can be improved, and what can be done to actually make this happen.

## ***2.6 Data Handling and Analysis***

Interview responses were recorded and transcribed as required. The data were summarised and categorised into themes. The aim was to provide some coherence and structure to the data while holding on the original accounts and observations. Patterns and commonalities in responses were then identified and coded. This allowed for data analysis and the identification of common themes.

## ***2.7 Characteristics of the Methodological Approach, Strengths and Weaknesses in relation to the Problem Formulation***

This study uses the Phronetic research approach. This approach is based on four questions: (1) where are we going with planning? (2) Who gains and who loses, and by which mechanisms of power? (3) Is this development desirable? (4) What, if anything, should we do about it? This approach is the most appropriate to this study and the study population: PURC, GWCL and consumers. Ghana Water Company Limited can be placed in

the first question of the Phronetic research approach because it is in charge of management and planning of urban water supply. PURC answers the questions of the second assumption of the approach because it is the independent regulative body in tariff setting and quantity of service delivery. The consumers aptly answers the questions of the third and fourth assumptions of the approach because it is only the consumers who can tell whether the exact state of water supply situation in Accra and whether or not something should be done about it.

The Phronetic approach is not value free, but seeks to investigate the reasoning which lies behind the values that actors try to impose on a case. The interests of the actors should also be included in such an approach ending up with an action-oriented solution (Flyvbjerg, 2004). The main focus therefore is on the interests and values of the actors and the associated practical political realities of the case, that is, power relations. This approach is highly malleable such that it is not likely that one will be able to fully answer all the four questions, nor is one likely to attain an answer for all the four questions.

The Phronetic approach to research is essentially a narrative approach. Hence, the Phronetic research approach uses qualitative research methods. Qualitative research methods are used to gain more insight into the phenomenon under study. Qualitative methods of data include field observation, in-depth interviews (Yin, 2003; Bryman, 2004). It seeks to provide concrete examples, for instances consumers' perspectives of urban supply situation and detailed narratives of the ways in which power and values within the

urban water environment work in Ghana with regard to planning and its consequences (Flyvbjerg, 2004). Planning situations are thought to become clearer when clarified by detailed stories of who is doing what to whom, as these questions provide a main link to praxis. However, it should be understood that since the Phronetic approach is problem-driven it does not really subscribe a priori to a certain method. Instead it is more important to attempt to answer the four questions and figure out how those answers came to be. Therefore the 'method' will ultimately be determined by the problem at hand (Flyvbjerg, 2004).

Because of the highly flexible nature of Phronetic planning research, there are concerns in some quarters as to whether through using it, one can really perform research that is valid, objective and replicable.

**Validity:** In Phronetic research, validity is defined in the conventional manner as a well grounded evidence, arguments and procedures. Since phronesis is about interpretation, every application must be based on claims of validity. If a new interpretation appears to better explain a given case, then that new interpretation replaces the old one (like in Popperism) and the continuous process of research will not necessarily terminate without the 'right' answer or interpretation being found (Flyvbjerg, 2004). For instance, during the interview sessions, further probing were done to ensure that the submissions of the various were understood in the contexts they were saying it.



**Objectivity:** Phronetic planning research cannot claim final indisputable objectivity. No other social science method can make that claim either because empirical objectivity is unavailable to anyone studying human affairs (Flyvbjerg, 2004). In Phronetic research the researcher is advised to employ the phenomenon concept of 'bracketing'. This is the suspension of the normative expectations of the researcher along with his horizon of meaning. This allows for other latent horizons of meaning present on the ground to become visible to him. This is a very high degree of objectivity if it is achieved. Bracketing also allows the researcher to be immersed in the case even if it has brutal facts whilst at the same time preventing him to go 'native' (Flyvbjerg, 2004). During the data collection, the researcher was not biased. The data were transcribed according to what the respondents said without the values of the researcher.

**Replicability:** Essentially case studies that are performed as Phronetic research narratives are deficient in providing a step by step manual that would be a universal fit for all to impose on any other case, or even to repeat the research. This is because of the highly contextual nature of the approach. Not only is it contextual but it is also deeply based on the intuition of the researcher himself. As he deals with details it is at his discretion to identify the details that strike him most about the case and interpret. However, there is a small consolatory aspect that makes the research somewhat replicable (but only up to a point); and that is the basic outlines of method as detailed in this methodology chapter (Flyvbjerg, 2004). In conducting this research, the researcher used research methods that

were applicable in the Ghanaian situation to enable other researchers to follow or replicate the methodology and find out whether or not they would arrive at the same answers.

## ***2.8 Sources of Data and Information***

The study made use of secondary information and primary data. Secondary information was gleaned from publications, documents, archival records in relation to the phenomenon from the libraries of GWCL and PURC and other available documentations on the subject matter. A personal visit on several occasions was made to the head Offices of PURC and GWCL to search for documentations, archival records, literature and publications. As already indicated, primary data for this study were obtained from in-depth interviews with respondents from PURC/GWCL and consumers of water.

Using secondary and primary data was necessary because no one source could provide the comprehensive data required for this study. In addition, using secondary information and primary data enabled the researcher to cross-check the findings and generate accurate findings thereby. Figure 2.3 shows the triangulation of sources of information and data for this study.

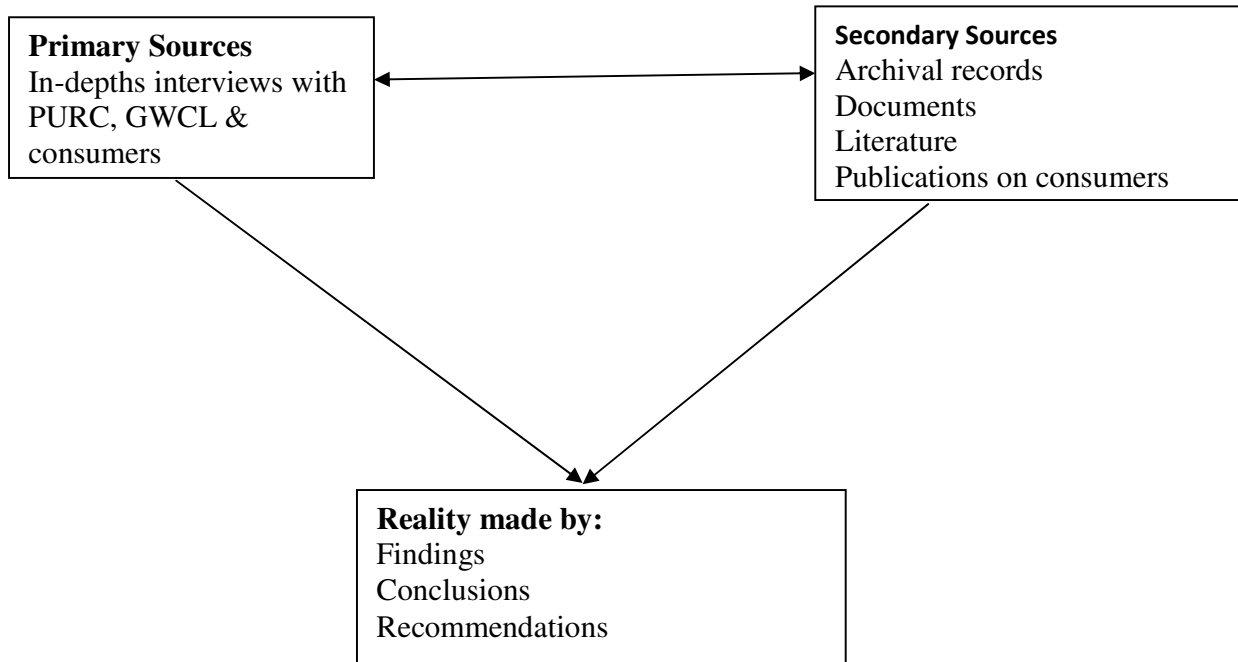


Figure 2.3: Data and Information triangulation adapted from Bryman, 2004

### ***2.8.1 In-depth interviews***

In Ghana interviews are one of the most important means of getting information on various issues. The Ghanaian society values social interaction and open discussion of social issues. The in-depth interview method afforded the researcher the opportunity to engage in a social interaction with the respondents. The interviews enabled the researcher to find detailed information and explore issues in depth where necessary. The method also helped to compare the truthfulness of replies with their own observations. The in-depth interview gives the possibility to identify the positions and aims of the different actors concerning the water supply process in Ghana. In other words, the in-depth interviews enabled the researcher to identify their perspectives' regarding the actors and institutions in urban water supply.

### ***2.8.2 Documentation***

Documentation represents a great part of the sources of this report as it is relevant to every study topic. It includes a variety of documents which in most cases are exact or have a broad coverage. The documents used in this project were as numerous as we could possibly process. The reason for using as many documents as possible was to generate a description as would be used for the theoretical framework. Every document was however, thoroughly examined since all documents are written for some specific purpose and target readers. Therefore, the writer had to be careful of bias. Various websites concerning the project were also visited and referenced, these included institutions PURC, GWCL, etc.

### ***2.8.3 Archival Records***

This fourth source of knowledge primarily reflects on the transcriptions of the discussions made between the various actors. The archival records are public documents and one can assume that not all that has been said during meetings are to be found within the documents. The validity and reliability is thereby minimised.

## **3.0 Theoretical Framework**

This chapter seeks to give an overview of the three main pillars of institutional theory used in this report. The Three Pillars of institutional theory can be applied when examining the diverse institutional spheres that make up society; examining the ways in which individuals are empowered and constrained by shared normative systems and exploring the ways in which symbolic-systems, cultural rules and schemas shape and support social life, this framework further substantiates why this theory is relevant to this study.

### ***3.1 Institutional Theory***

There is a general lack of a common definition of institutions within. Varying definitions are based upon different conceptions of the nature of social reality and order. One definition found to effectively integrate several important elements from other definitions is that of Scott (1995). According to Scott (1995:30) institutions “consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers—cultures, structures, and routines—and they operate at multiple levels of jurisdiction”. These elements are the building blocks of institutional structures, and provide the concept of institutions. The three pillars of institutions would serve as the analytical framework for considering the actors and institutions involved in the decision making process for the supply of water in Ghana

### ***3.2 Relevance Scott's Pillars of Institutions to the Problem Formulation and the Ghana Water Sector***

The purpose of this research is to gain a better understanding of how the inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users. Scott opined that institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. The cognitive element deals with the shared conceptions that constitute the nature of social reality and the frames through which meaning is made. While the normative aspect defines objectives and the appropriate ways of pursuing values, norms and roles, the regulative pillar constrains and regularizes behavior. It consists of laws and rules supported by sanctions that attempt to influence future behaviour, and ultimately helps decide how individuals must behave.

First, the Ghana water sector is at the cultural-cognitive, normative and regulative pillars of Scott's theory. This is because the sector has the overall responsibility of producing and distributing portable water to the urban population in Ghana and it must fulfill this role to ensure meaningful social life. At the cultural-cognitive pillar, the Ghana water sector has shared beliefs and common logics of action and hence conceives that portable water must be provided through effective management. Therefore, the sector creates a culture involving actors and institutions such as PURC and many others to fulfill this concept. While normatively Ghana water sector has its roles, vision, mission statement and values in line with producing and distributing portable water to the population to ensure meaningful

social life, at the regulative level, the company in pursuance of its roles, vision, mission statement and values formulates rules, institute technical support and infrastructure, standards, norms and monitoring backed by sanctioning power to ensure actors and institutions act in the correct way to provide water. Figure 3.1 shows how the Scott's pillars relate to the Ghana water sector.

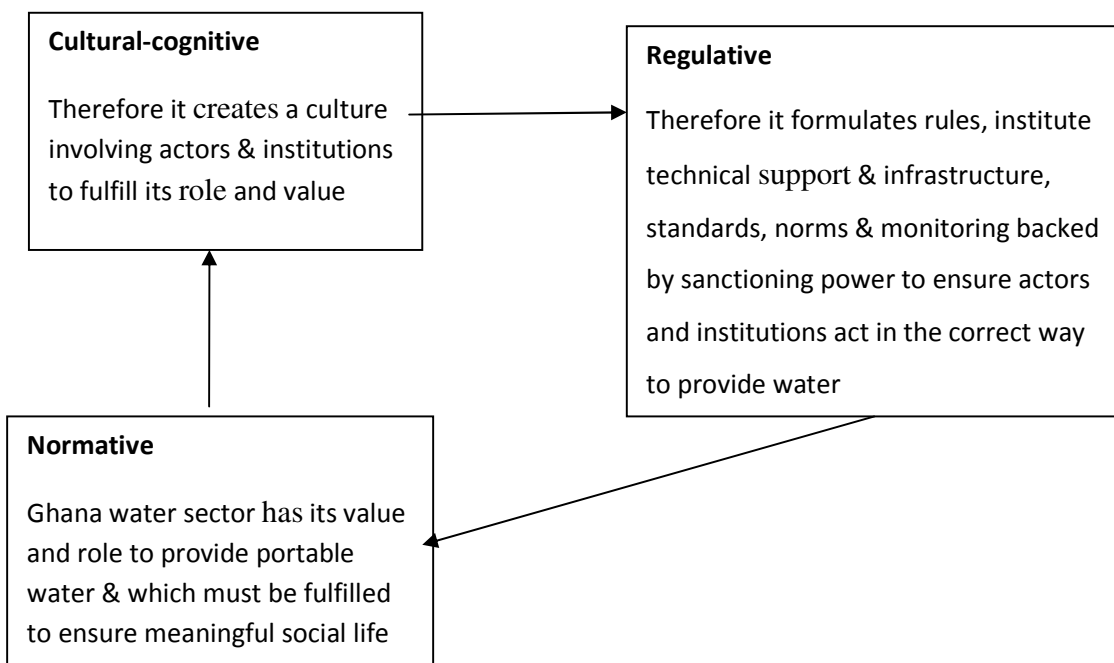


Figure 3.1: Application of Scott's pillars to the Ghana water sector

A further discussion of urban water supply in Ghana show that many actors and institutions are involved and each contributes ideas (manifested in policy formulation) to ensure regular water supply (refer to figure 2.1). The Ghana water sector using Scott's theory can be likened to an organism in which the various parts (heart, lungs, etc.) function



to maintain its existence (see Figure 3.2). In other words, the functions performed for the Ghana water sector by its component actors and institutions are necessary to ensure adequate supply of water. The individual actors and institutions roles appear to be independent, but in fact the totality of these roles is a mosaic of patterns which ensure water supply. Therefore, in the understanding of how the inadequate institutional structure in the Ghana water sector has do with the issue of non participation of some key actors in the decision making process for the supply of water in Ghana.

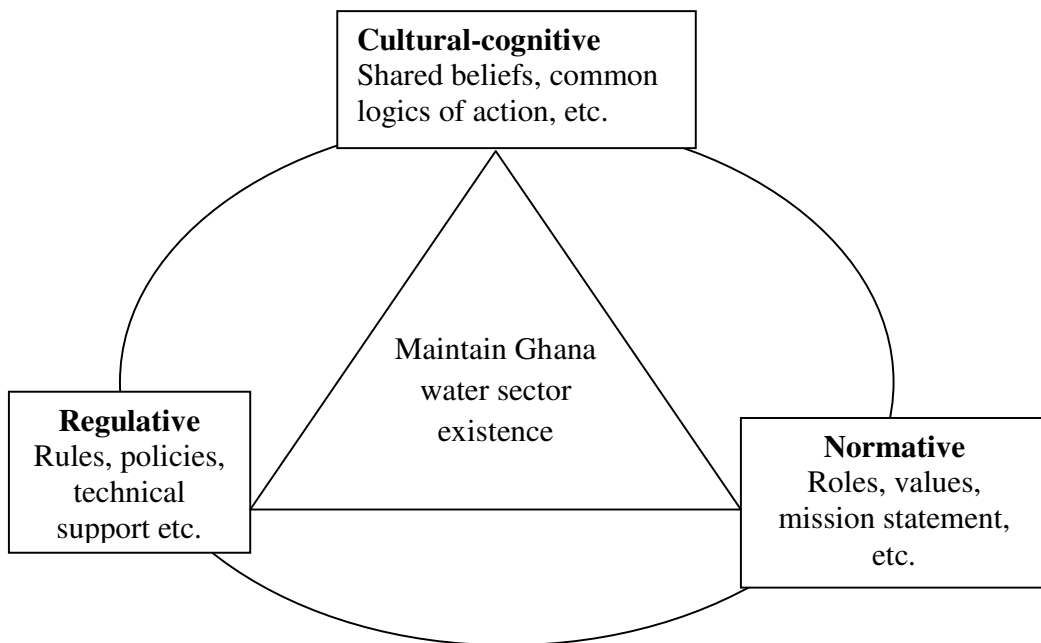


Figure 3.2: Relationship of Scott's pillars to the Ghana water sector

Consumer participation in decision making is cardinal to successful implementation of decisions on water supply. So, if there is a problem in the water supply situation in Ghana,

the assumption is that the problem can be traced to the non participation or involvement in the decision making process for the supply of water. This assumption is embedded in Scott's idea that institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Specifically, the lack of involvement of the consumer in decision making process may create lapses in policy formulation thereby contributing to inadequate water supply in Accra metropolis for both industrial and domestic users.

## **4.0 Institutional Framework of Actors involve in the Water Supply**

This section reviews some of the literature on institutional framework of actors involve in water supply in Ghana. The review begins with a peep into the evolution of water supply in Ghana. A thorough discussion of the Ghana water supply policy follows. Following this is an overview of roles and responsibilities of key water sector institutions. Urban water supply policy is discussed and lastly, the gaps in the literature are identified which demonstrates a need for further study on this topic and provides the rationale for this thesis.

### ***4.1 Evolution of Water Supply in Ghana***

The provision of public water supply in Ghana began in 1928 with a pilot pipe-borne system managed by the hydraulic branch of the Public Works Department (PWD) in Cape Coast. At the time, the PWD was responsible for both urban and rural water supplies. However, in 1958, the Water Supplies Division of PWD became an autonomous entity directly responsible to the Ministry of Works and Housing (MWH). Subsequently, Government of Ghana, in 1965, transformed the then Water Supply Division of MWRWH, which was responsible for water supply services, into a parastatal, the Ghana Water and Sewerage Corporation (GWSC). The Corporation was made responsible for the provision, distribution and conservation of both the urban and rural water supplies in Ghana for public, domestic and industrial purposes. In addition, it was made responsible for the establishment, operation and control of sewerage systems and given powers to control effluent discharges into water bodies, set standards including those for drinking water and

set tariffs and charges for its services. GWSC was required to manage its affairs in accordance with practices obtained in public utility enterprises, and in particular to cause its functions to be carried out so as to ensure gradual improvement in its financial position. For the efficient management of its assets, it was required to set up and maintain a Depreciation Fund for replacement of fixed assets and a Sinking Fund for expansion and development. However, GWSC's operations have not been self-sustaining and it has relied on parastatal to subsidize its operation and maintenance costs and to bear full responsibility for capital investments (Aryeetey & Ahene, 2007; Fuest & Haffner, 2007; MWRWH, 2007).

In order to focus on, and meet its commitment of reducing poverty in rural areas, the Government of Ghana formally launched the National Community Water and Sanitation Programme (NCWSP) in 1994 to address the problems of water and sanitation in rural communities and small towns. An underlying principle of the NCWSP is its emphasis on community ownership and management (COM), which entails effective community participation in the planning, implementation and management of the water and sanitation facilities in the belief that, as custodians, communities will ensure the sustainability of these systems.

In 1994, a Community Water and Sanitation Division (CWSD), was established within the GWSC to manage the NCWSP and cater solely for rural water and sanitation. In 1998, the Government transformed the CWSD into the Community Water and Sanitation Agency

(CWSA) by Act 564, charged with coordinating and facilitating the implementation of the NCWSP in District Assemblies. As part of policy measures to strengthen various State Owned Enterprises (SOEs), GWSC was converted to a limited liability company Ghana Water Company Limited, (GWCL) in 1999 to focus on urban water supply. In 2007, the National Water Policy of Ghana came into effect and focuses on the three strategic areas: water resource management; urban water supply; and community water and sanitation.

#### ***4.2 Ghana Water Supply Policy***

The National Water Policy of Ghana is intended to provide a framework for the sustainable development of Ghana's water resources. It is targeted at all water users, water managers and practitioners, investors, decision- makers and policy makers within the central Governmental and decentralized (district assemblies) structures, non-Governmental organisations and international agencies. The policy also recognises the various cross-sectoral issues related to water-use and the links to other relevant sectoral policies such as those on sanitation, agriculture, transport, energy et cetera.

The overall goal of the National Water Policy is to achieve sustainable development, management and use of Ghana's water resources to improve health and livelihoods, reduce vulnerability while assuring good governance for present and future generations. The policy focuses on addressing relevant issues under water resources management, urban water supply and community water and sanitation to achieve the overall goal. For each

broad area, a number of focus areas for policy considerations have been identified. Within each the main principles and challenges are listed followed by policy objectives and the corresponding measures.

#### ***4.2.1 Water Resources Management***

Current trends point to the fact that water resources management approach is needed to ensure that water does not become a constraint to national development. Under the policy, the main focus of water resource management are integrated water resources management; access to water; water for food security; water for non-consumptive and other uses; financing; climate variability and change; capacity building and public awareness creation; good governance; planning and research; and international cooperation (MWRWH, 2007).

#### ***4.2.2 Urban Water Supply***

Ghana is in a period of rapid urbanization. The rate of urbanization outstrips current levels of urban water supply. GWCL currently operates 82 urban systems with an average daily output of 572,012 m<sup>3</sup>/day as against a daily demand of 1,049,306 m<sup>3</sup>/day. Water is rationed to many consumers with only a few customers able to get 24-hour supply. In the peri-urban areas and the densely populated poor urban areas customers receive supplies once a week or none at all. The Government of Ghana is determined to halt the falling trends in water supply coverage and quality and resume a programme of expansion and

improvement. This requires consistent high levels of investment from public and increasingly, private (local and foreign) sources (MWRWH, 2007). Among the broad areas of focus of particular relevance to urban water supply are increasing and improving existing water sources; improving access to water; financing urban water supply; hygiene education and environmental sanitation; public private partnerships; capacity; good governance; research and development; monitoring and evaluation; emergency and extreme events; and pro-poor issues.

### ***4.2.3 Community Water and Sanitation***

Ghana's long term plans outlined in the Ghana Poverty Reduction Strategy (GPRS) and other related development priorities, give focus to improved rural water supply, sanitation, health and, the control and eradication of water-borne diseases. A significant achievement of the last decade is the development of the appropriate institutional structure to implement the National Community Water and Sanitation Programme (NCWSP). Among the broad principles, those of particular relevance to the community water and sanitation sub-sector are improving access to potable water to rural and small town communities; decentralised delivery of water and sanitation service; sustainable financing; hygiene education and sanitation; public private partnership; capacity building; gender mainstreaming and good governance; research and development; operation and maintenance; and monitoring and evaluation (MWRWH, 2007).

### ***4.3 Overview of Roles and Responsibilities of Key Water Sector Institutions***

Inter-institutional coordination and collaboration is an important aspect in ensuring the effective implementation of the National Water Policy. The institutions responsible for various water uses and services are divided into principal sector agencies and allied sector agencies. While the former deals with direct facilitation and implementation, the latter play supporting roles including regulation and oversight. The key agencies of MWRWH carrying out the ministry's water resources management and drinking water programmes are the WRC, GWCL and CWSA.

#### ***4.3.1 Principal Sector Agencies***

The following section summarise the key functions of principal water sector institutions and their roles:

#### **Ministry of Water Resources, Works and Housing**

The Ministry of Water Resources, Works and Housing (MWRWH), among other responsibilities is the lead government institution responsible for water. It has the authoritative function of initiating and formulating policies, coordination of budgeting, monitoring and evaluation to ensure the efficiency and performance of its specific sector. Specifically, the ministry formulates and implements policies and programmes for the provision of safe drinking water, and the development of infrastructure facilities in the area of water and flood control systems, sanitation, drainage and coastal protection works,



operational hydrology, for the benefit and improvement of all people living in Ghana (Water & Sanitation Monitoring Platform [WSMP], 2010).

The Water Directorate of MWRWH is the focal point for coordination of the water and water-related sanitation sector for policy harmonization, sector-wide monitoring and evaluation of GPRS outcomes and MDG targets as well as coordination of foreign assistance.

### **Water Resources Commission**

The Water Resources Commission (WRC), an agency within the Ministry of Water resources, Works and Housing was established by an act of Parliament (the WRC, Act 522) in 1996. Its main objectives are to regulate and manage sustainable utilization of water resources and to coordinate related policies. Among the WRC's major tasks are the granting of water rights and the allocation of water resources among various competing users (WSMP, 2010).

### **Ghana Water Company Limited**

The Ghana Water Company Limited (GWCL) as a state-owned company is responsible for producing and distributing portable water to the urban population in Ghana which constitutes about 40 per cent of the entire population.

### **Community Water and Sanitation Agency**

The Community Water and Sanitation Agency (CWSA) is a facilitating agency under the Ministry of Water Resources, Works and Housing. The community water and sanitation agency was established by an Act of Parliament (Act 564) in December 1998 with the mandate to facilitate the provision of safe drinking water and related sanitation services to rural communities and small towns in Ghana. CWSA also deals with household sanitation and the promotion of a hygienic environment. The agency is committed to effective facilitation of the provision sustainable portable water and related sanitation services as well as hygiene promotion to rural communities and small towns through resources mobilization, capacity building, standards setting and quality assurance with the active participation of all stakeholders (WSMP, 2010).

### **Ministry of Local Government, Rural Development and Environment**

The Ministry of Local Government, Rural Development and Environment is responsible for implementing the Environmental Sanitation Policy including management and regulation of solid and liquid wastes by local government bodies viz. Metropolitan, Municipal and District Assemblies (DAs).

### **District Assembly**

The District Assembly is the basic unit of Government at the district level and is the statutory deliberative and legislative body for the determination of broad policy objectives of the development process within their jurisdictions. DAs are responsible for the planning,

implementation, operation and maintenance of water and sanitation facilities and the legal owners of communal infrastructures in rural communities and small towns. The detailed functions and mandates of Metropolitan, Municipal and District Assemblies (DAs) are defined in Local Government Act, 1993 (Act 462) and establishment instruments (Legislative Instruments) of the Assemblies.

### **Ghana Irrigation Development Authority**

The Ghana Irrigation Development Authority (GIDA) under the Ministry of Food and Agriculture (MOFA) was established in 1977 by SMCD 85 to replace the Irrigation Department which started as a purely Water and Soil Conservation Unit and later expanded into Irrigation and Reclamation. GIDA focuses mainly on water conservation and irrigation and is responsible for the development of the country's water resources for irrigated farming, livestock watering and supports fish culture in irrigation ponds and dams. GIDA dams also serve as sources of water for domestic supplies in many rural communities.

### ***4.3.2 Allied Institutions***

The allied institutions in the water sector and their roles are as follows:

#### **Water Resources Information Services**

The Water Resources Information Services (WRIS) institutions i.e. the Hydrological Services Department, the Water Research Institute under the Council of Scientific and Industrial Research, and the Ghana Meteorological Agency. The WRIS institutions provide

data and other water resources related information and services to support planning and decision making.

### **Public Utilities Regulatory Commission**

The Public Utilities Regulatory Commission regulates the standard of services including the quality of drinking water provided by the GWCL and also the tariff set by the company for urban water supply. Other functions of PURC are provided in the Public Utilities Regulatory Commission (PURC) Act, 1997 (Act 538).

### **Environmental Protection Agency**

The role of the Environmental Protection Agency (EPA) covers among others protection of water resources and regulation of activities within catchment areas including setting effluent standards. The functions of EPA are set out in the Environmental Protection Agency (EPA) Act, 1994 (Act 490).

### **Ghana Standards Board**

The Ghana Standards Board is responsible for developing and setting quality standards drinking water including certification and other related uses.

### **Town and Country Planning**

The Town and Country Planning supports DAs in physical planning of towns and provides layouts of towns that give land-use and directs development of services like roads, drainage networks, electricity and water supply distribution lines. This is to guide DAs to regulate the grant of permits for various classes of buildings (housing, industrial, commercial, institutional) and control development.

### **Ministry of Women and Children**

The Ministry of Women and Children (MOWAC) is the lead agency responsible for implementing the National Gender and Children's policy launched in September 2004. The National Gender and Children's policy is the framework for gender equality issues. Policy issues on water that affect the well-being of women and children is within the mandate of MOWAC.

### **Parliamentary Committee on Works and Housing**

The Parliamentary Committee on Works and Housing and the Parliament of Ghana provides legislative oversight of the water sector.

#### ***4.4 Urban Water Supply Policies***

The basic policy issues guiding the new focus of the urban water project (UWP) include: mobilizing adequate financial resources for investment in refurbishment and extension of coverage of urban water systems; strengthening the Ghana Water Company Ltd. (GWCL) to

effectively manage service contracts and extensions; establishing a unit within the MWRWH to monitor provision of water to the poor; bringing tariffs to cost recovery levels to make the operations of urban water systems sustainable; providing direct state interventions in areas where there is a marked gap in service delivery; creating partnership programme with NGOs which have a comparative advantage in responding effectively to the needs of the vulnerable and excluded (WaterAid, 2008).

The ultimate goal of water sector development is to provide direct connections for as many consumers as possible, but this is a very expensive strategy. There are huge investment requirements in development of water resources and treatment to serve the much higher water use by consumers with piped connections. The Government of Ghana is bringing in the private sector in the hope that there will be greater efficiency and much needed investments for expansion of water supply coverage particularly in pro-poor urban centers. The introduction of the private sector imposes on key stakeholders of the urban water the challenge of ensuring that the needs of the urban poor and vulnerable are adequately catered for, at the same time recognizing the interests of the provider to make adequate return to ensure sustainable services (WaterAid, 2008).

Within the context of urban water systems management, the GPRS seeks to improve service delivery through the design of monitorable implementation plans for effective programming of linked activities with the GWCL (as utility), private operators (including SWEs) and the PURC (the regulatory body). The urban poor households' (and particularly

those living in compound houses) access to water will be promoted through a reassessment of the lifeline tariff (WaterAid, 2008).

#### **4.5 Gaps in the Understanding of the Institutional Framework of Actors Involve in the Water Supply**

In general, the majority of the institutional framework literature is focused on policy issues and delineating of roles and responsibilities of key water sector institutions. Despite the renewed interest of government in providing water, there is little discussion among water sector stakeholders on the adequacy or otherwise of the institution involve in water supply. Meanwhile, from the general literature, there is some limited recognition of water consumers in water supply decisions. However, this study is guided by Scott's three pillars of institutions. He opined that institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. The main assumption of the theory is that institutions are like organisms with many parts which function to maintain equilibrium. Scott's theory provides a basis to focus on the water consumers as integral in water supply decisions and a locus for locating intervention measures.

It can be argued that the consumer is at the cultural-cognitive pillar in water supply decisions, that is, in Scott's view the shared conceptions that constitute the nature of social reality. In other words, the collective decisions of the actors and institutions involve in

water supply in this case. Figure 4.1 shows that consumers are at Scott's cultural-cognitive pillar in the application of the theory to Ghana water sector.

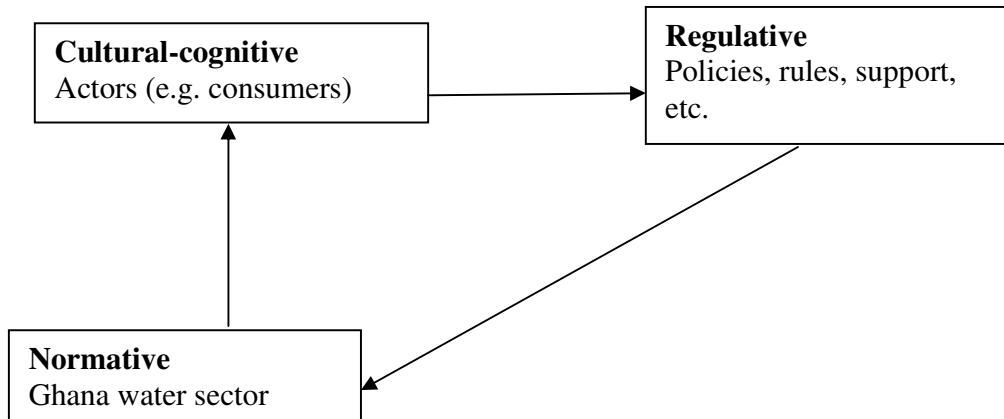


Figure 4.1 showing the location of water consumers in Scott's theory

From the problem formulation, Fuest and Haffner (2007) stated that water reforms in urban water supply did not sufficiently address the important issues of sector coordination in the face of weak national institutions and structural interdependencies based on patronage relations among the government, regulator, provider and clients, which in effect contribute to water shortage in the Accra metropolis and beyond. Meanwhile the main thrust of this study is how the inadequate institutional structure in the Ghana water sector contributes to the poor operations of the water supply in Accra.

One lacuna in the institutional framework of actors and institutions involve in water supply is the issue of water consumer neglect in decision making process. The institutional problem created by the non involvement of water customers in the process is monitoring,



which in turn led to unaccounted for water supply (“illegal connection”). In a nutshell, the insufficient research on how inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users; and ways in which the water supply institutions can be improved, and what can be done to make this happen demonstrate a need for further study on this topic and provides the rationale for this thesis.

## **5.0 Water Supply in Ghana**

Accra, the capital city of Ghana, has a population of approximately 3.2 million and accounts for about 25 per cent of the urban population. Like all other large African cities, Accra is experiencing rapid growth. Its population increased from 624 000 in 1970 to almost 1.2 million in 1984, to about 1.7 million in 2000 and is estimated to be 3.2 million in 2010. Currently about 44 per cent of the population can be found in the market city. About 58 per cent of urban water supply goes to domestic consumption, 24 per cent to commercial/industrial customers and 18 per cent to government and public institutions (GWCL, 2003).

The main sources of water for households are piped supply from treated water sources, untreated piped water from ground water sources including rivers, shallow bore holes, wells and ponds, lakes from Weija in the central region and Kpong lake in the Eastern region. Kpong waterworks is about 60 kilometres to the north and Weija Waterworks is also located on the Densu River and is located 15 km west of Accra. The raw water is drawn from the Densu River impounded by the Weija Dam. From the intake, the water is pumped to the treatment works via two pumping stations for further treatment (Rakodi, 1996).

## **5.1 Extended Demand**

Rapid population growth has caused the water supply system in Accra to operate below expectation with about 40 per cent of urban residents not served. The urban poor as defined by the Living Standard Survey are the hardest hit by the shortage in water supply. They are compelled to rely on neighbours and water vendors for their daily water supply needs. They pay about 20 times more than those connected and served by the GWC distribution network (Kofie *et al.*, 2008). This incidence is captured this figure.



Figure 5:1 Residence relying on neighbours and water vendors for their daily water supply

The growing incidence of slums in Accra occasioned by rural-urban migration, limited supply of land, and regulatory frameworks that are, at best, indifferent and hostile to the needs of the poor. In Accra, the poor are located in three key areas: along the beach (mostly indigenous people); at the central business district in makeshift structures, kiosks,

and discarded metal containers mixed in with commercial activities; and in the newly developing peripheral areas (Ghana Statistical Services, 2002). The consequence of this development is that the GWCL cannot map out strategy for service delivery. The slums are also the hub that sinks unaccounted for water. Currently, the water demand of Accra Tema Municipal Area (ATMA) stands at about 453,704 m<sup>3</sup>/d (GWCL, 2007), but only 320,000 m<sup>3</sup>/d of this demand which amounts to about 71 per cent is met by GWCL. Figure 5.1 shows the growing trend in the current population in Accra (SWITCH, 2007).

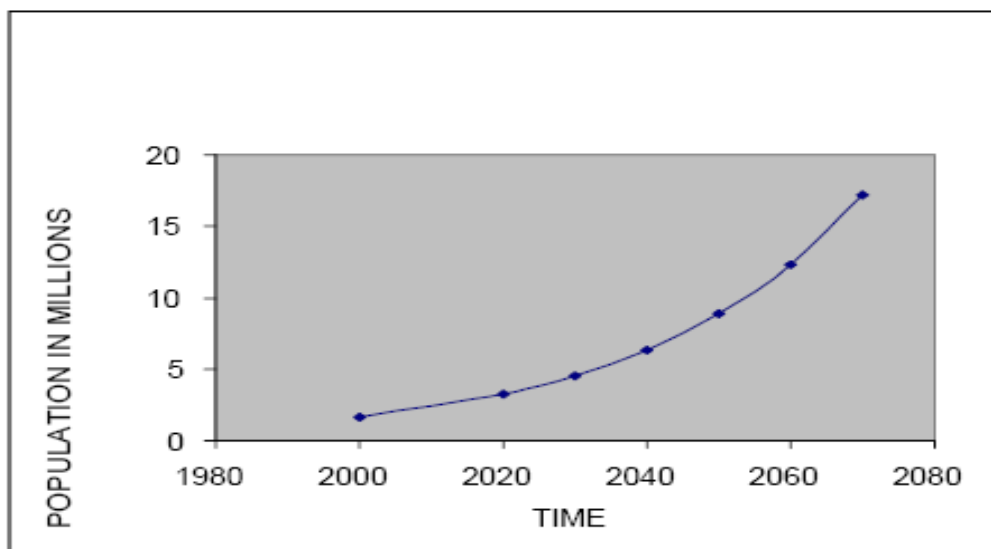


Fig. 2 A Graph Estimating Population Growth With Time in Accra

Figure 5.2 Graph Estimating Population Growth with Time in Accra

It is estimated that in the near future, if the growth rate remains the same, the population of ATMA will increase to almost 5 million by the year 2030 and increase in population brings along increase in water demand. So if the current water resources are not properly utilized, the water supply system is likely to collapse (SWITCH, 2007).

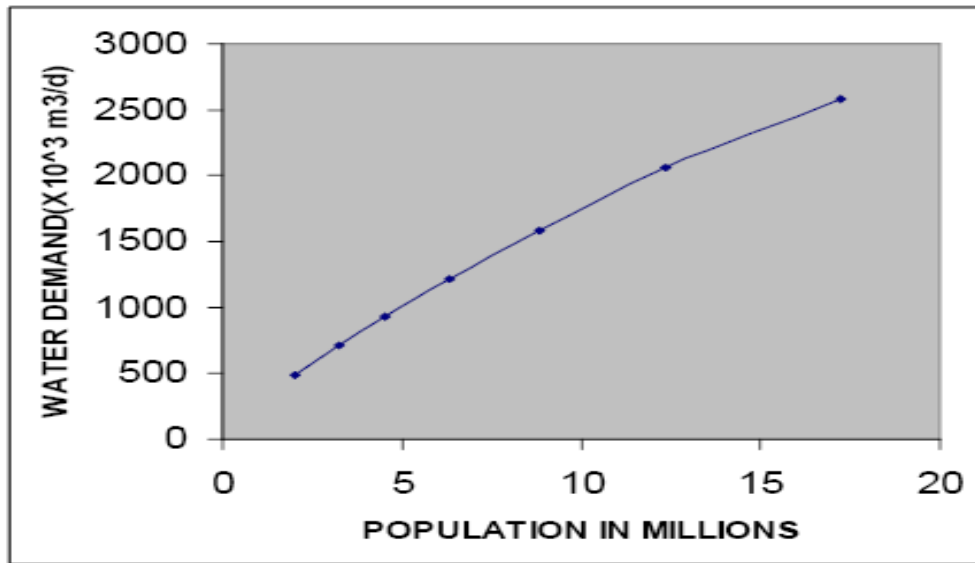


Fig. 3 Water Demand Estimates Against Population Growth in Accra

Figure 5.3 Water Demand Estimate Against Population Growth in Accra

The Figure indicates that at this rate of population growth, the water demand of ATMA will shoot from below 500,000 m<sup>3</sup>/d to over 1 million m<sup>3</sup>/d in the year 2030. These statistics depicts the seriousness of the situation and if measures are not taken to find a solution to the problem, then the city's water supply system will be under treat of collapse (SWITCH, 2007).

## 5.2 Causes of Gaps in Demand and Supply of Water

Several factors confront efforts to close the gap between demand and production. First, GWCL's unaccounted for water (UFW) stand at about 50 per cent of total output; the volume of water that is effectively sold is 280,000m<sup>3</sup>/day. This figure is about a third of the daily demand of 763,300m<sup>3</sup>. It is conceivable that a fair percentage of UFW (the

portion considered to be administrative leakage), is also used by urban residents. But as demonstrated by widespread rationing, there remain an acute shortage (Ghana Water Sector Assessment, 2005).

Another factor that explains the gap in urban water supply in Accra is that urban water is dependent on whether there is reticulation, availability and reliable supply, and how affordable it is to connect to the piped system. According to a survey by the Public Utilities Regulatory Commission (PURC), connection fees are indeed a barrier to access for low income households.

## **6.0 Institutional Analysis of Urban Water Supply**

This study set out to address the question of how has the inadequate institutional structure in the Ghana water sector contributed to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users. In order to realise this main question, the following sub questions were raised: How does stakeholder interest affect water supply? How does water institutional framework affect water supply? How does the political system manifest its willingness to support water supply in Ghana? How does urbanization in Accra affect water supply? In which way(s) can the water supply institutions be improved? In which way will the political system be able and willing to influence these institutions? Using in-depth interviews, data were obtained from various actors and institutions that participated in the study.

This chapter presents the findings in line with the important issues of the study including stakeholder interest in urban water supply, political willingness and institutional framework for water supply and urbanization and water supply. Transcripts of the interviews are adduced and blended for the analysis.

### **6.1 *Data Analysis and Discussion***

#### **6.1.1 Stakeholder Interest in Urban Water Supply**

Water provision is not the mandate of one actor or institution in Ghana. A review of literature shows that many actors and institutions are involved in the water supply sector.

However, the question this study set out to address was why the many actors and institutions, yet inadequate water. From the interviews with key sector water stakeholders, it was found out there is lack of stakeholder interest in the process and in another breath lack of involvement of some other stakeholder like the consumers. In a response to a question by the key informant from PURC as to whether the actors and institutions are working together or collaborating. According to him, there is total lack of interest and collaboration among the actors and institutions which stalled water supply in many parts of the country. Though a clear delineation of roles has been assigned to every actor and institution in the water supply sector, there exist collaborating problems. In order to address the issue of lack of collaboration among actors and institutions in the water supply sector, the interviewee said a Sector Wide Approach (SWAP) has been developed for stakeholders in the water sector. The following statement captures the frustrations of the interviewee with regard to stakeholder interest in water supply:

*It's clear that we're deficient as a nation. There is SWAP for the sector stakeholders in the water and sanitation sector. Within the sector wide approach we're looking for instance where there is a goal that we all agree to reach in some years. How do we get there? The sector from the Government's point of view, the individuals, the Institutions, the communities - these are all being streamlined by this Swap which has a timetable. During a workshop on Swap we drew a roadmap. Starting from sector policy direction, sector financing - I think we're two steps away. Currently, what is happening is that the Town and Country Planning has interwoven responsibilities, and so a clear definition of their roles has been assigned (i.e.*



*the EPA, Water Resources Commission etc) to them. Benchmarks are also given to them. Normally, when you go for connection to a new site you are asked to bring a Site Plan. How do we get people not counterfeiting Site Plans? These are holding up the SWAP. We've set 2015 as the year that we should be meeting those goals.*

The PURC key informant further said that prior to the SWAP; water supply approach was not streamlined. He said for instance, shortly after commissioning of newly constructed road, other stakeholders like Ghana Water Company usually begin to dig trenches to extend pipe lines. This more often put a newly constructed road in bad shape. This particular problem was one of the reasons for the SWAP.

The views of the Ghana water company key informant on the issue of stakeholder interest were not significantly different. According to him, collaborating among water sector stakeholders is at best problematic. For instance, he said a partnership that GWCL entered with ACQUA VITENS, a private water operator is faced with difficulties due to a lack of internal coordination. In a response to a question, as to whether GWCL could sustain the internal relationship with ACQUA VITENS, the key informant was of the view that the relationship could not sustained and risk collapsing. The following statement illustrates the problem of GWCL and ACQUA VITENS:

*The problem was about efficiency and coordination which ACQUA VITENS came to work on. And now there are about 5 to 6 months arrears which tell you that they have not done anything to change the situation. Before their arrival on the scene the production and distribution of water was okay, but when they came the performance started deteriorating to about 25 per cent.*

*We try to find out what they consume through metering, but when they came they said that the meters were malfunctioning which rendered the readings incorrect and unreliable. We actually do not have enough meters and our method of calculation contained errors, and so we need to continue to reduce the errors, but the system has been the main way of assessing our performance.*

From the analysis, it can be deduced that Ghana Water Company had problems with internal coordination. So, if internal coordination is problematic, then coordination with other external actors and institutions is more problematic. As for the consumers interviewed, they indicated they are not involved in water supply decisions. For instance, during the interview with the household consumer on the issue of GWCL commitment to give them water, he remarked that:

*"I think for our area in the Adenta Municipality their service is non-existent and so I would score them very low, but somewhere else like my workplace in Kanehie Municipality, if you report a problem (pipe burst) to them their response rate is low so I think maybe they don't have the interest, logistics or other technical men. They have a lot to do in the provision of water."*

The findings of this study supports the research findings of Fuest and Haffner (2007), Wateraid (2008) and SWITCH (2007) that actors involved in urban water supply lack important issues of sector coordination. From the theoretical framework view point, institutions consist of cultural-cognitive, normative and regulative structures and activities that work together to provide stability and meaning to social behavior. In other words, the actors and institutions in the water supply sector (GWCL, PURC, consumers, etc.) must work together to resolve the water supply problems in Accra and beyond. This is because it is quite clear from the findings that there is pronounced weak sector coordination among actors and institutions involved in water supply. Therefore, from Scott's theory, the inadequacy in water supply could be partly explained by lack of stakeholder interest on the one hand and water consumers neglect in decision making process on the other hand. This is evidenced in the empirical findings of this study.

### **6.1.2 Political Willingness and Institutional Framework for Water Supply**

The institutional framework supporting the provision of water supply is faced with many bottlenecks in terms of organisational resources and technical support infrastructure, regulations, and supply standards, norms and monitoring. In an interview with a key informant from PURC, the PURC regulates the standard of services including the quality of drinking water provided by the GWCL and also the tariff set by the company for urban water supply. However, the PURC cannot execute its mandate to the fullest owing to weak institutional support. For instance, in a response to a question regarding the biggest challenge regarding water supply. The PURC key informant remarked that:

*From my perspective, there are two major challenges. First, loans and funds for the water sector are being diverted into other uses. Second is the political will in that water sector policies are not being followed. In the event of change of government, policy direction also changes due to partisan concerns. The consequence is that massive projects started by previous governments are always abandoned by successive government. In addition, some people tend to defend the interest of the consumer, which is why no measures have been taken to manage water effectively for the waste to be reduced and to reach full cost recovery for the systems.*

According to him, this problem makes it difficult for GWCL to provide water for the entire population. He said, this gap in water supply is filled by Tanker Service Providers (i.e.,

unauthorized water vendors), but in a quick reaction to a question concerning how water tankers get water to retail to consumers, the key informant said:

*The Tankers get water from GWCL Hydrants (water collection points). From 2008 these activities have been streamlined because water must be treated before consumption. The WHO standard is taken into account. The end user as a consumer must also ensure that he/she is getting value for money.*

He further added that the water tanker business is becoming lucrative and many more people are converting their trucks to do the water business. The hydrant is also a reliable source of water. But the quality of the water is in question, as GWCL does not exercise any checks on the cleanliness of the tanker container used to carry the water. On the issue of who determines the prices at which water tankers retail water, he pointed out that the price depends on the type of consumer. Some consumers are poor, but water from the hydrant is sold at exorbitant price. Some areas are far so water prices depend on the tanker operator. According to him the poor consumer is protected. On the protection of the consumer, he indicated that:

*The poor consumer is protected. The price at which water is sold to Tanker Drivers comes from GWC. And so, GWCL controls the price from that point, for example, 100 gals is sold at GHc 100. But if the distance is far, the price would depend on the Tanker service. However, if*

*we find out that the pricing of a particular tanker service is above board, legal action would be taken against them.*

But the PURC would find it difficult to institute legal action against any tanker service operators because there is no specific charge per kilometer. Lastly, the PURC key informant was asked whether tanker service should be the sole distribution outlet since GWCL is not able to reach the consumers countrywide. He said the tanker service though unacceptable is good because they are able to supply water to the remote areas.

The Ghana water company key informant said the institutional problem that stalled water supply in the country is because most of the funds for expansion are partly financed by the company and the government pays the rest. He also said industries like Coca cola, Unilever, and Accra Brewery put pressure on the system, but they are considered bloc consumers and cannot be put off the system. However, discussions are on-going to create alternative sources of water for the bloc consumers. During the interview with a household consumer in the Adenta Municipality in the Greater Accra region on their source of water, it was revealed that throughout their 21 years of stay in the Municipality, they have never had water from Ghana Water Company. As the consumer aptly put:

*Our source of water is mainly by Water Tankers. We buy 2,500 gallons capacity Water Tanker every month. We store the water in the underground tank and use a pump lift to lift it up to the overhead tank. We have been living in this house for about 21 years and we have*

*never had water from Ghana Water Company. The only source is buying Tanker Water.*

The household consumer was asked from their perspective; whether there is any political will to provide them with water and whether there is the marginalization of people living in the Adenta Municipality. The interviewee replied that:

*Yes, sometime ago, households were asked to pay a levy of GHc50. They promised that once this amount was paid the water problem would be solved. We paid this amount but they have reneged on this promise.*

From the observations of the sampled respondents of this study, it is crystal clear factors such as lack of political will manifested in lack of continuity of projects of previous governments and diversion of water sector funds for other uses, and huge consumption from industries such as Coca cola, Unilever, and Accra Brewery fragment the supply situation. This finding agreed with the research findings of PURC (2005) and Wateraid (2008) that factors such as reticulation, availability, corruption, exorbitant connection fees, and unaccounted for water widen the gap between supply and demand for water.

Furthermore, the findings are incongruent with the view point of this study's theoretical framework. To reiterate the Scott's theory which underpins this study, for stable social behaviour to exist, cultural-cognitive, normative and regulative aspects must work in tandem. However, from the findings, there exist massive lack of political will to provide water manifested in lack of continuity of projects of previous governments and diversion of water sector funds for other uses. This cripples the GWCL functional wings to deliver on its mandate. The consumer who is the beneficiary of the water supply bears the brunt of the actions and inactions of the other stakeholders like the government. The gaps in the water supply process are in sharp contrast with Scott's theory.

### ***6.1.3 Urbanization and Water Supply***

From the problem tree in chapter one of this study, rapid urbanization was one of the explanatory variables that have given rise to the inadequate water supply. It was therefore important to investigate the basic details of this phenomenon and how it contributes to inadequate water supply in the Accra Metropolis. Interviews were held with key informant from PURC, GWCL and consumers to solicit their views on urbanization and urban water supply. According to the PURC key informant the upsurge in urban conurbation and most of these new areas are unplanned. According to him, GWCL losses about 60 per cent of its revenue due to unplanned settlements. In his view, many youth are migrating from the rural areas to Accra and often found in the central business district in makeshift structures, kiosks, and discarded metal containers mixed in with commercial activities; and in the



newly developing peripheral areas. The following transcription illustrates the impact of this phenomenon on GWCL:

*These youth from the rural areas often cut pipes to tap water for their use. This makes the company not being able to wean bloc consumers like Coca cola, Unilever, and Accra Brewery from the public system to get enough for the people of Accra*

The key informant from GWCL on urbanization said the phenomenon is one of the banes of the company's ability to supply water. The overall consequence of this development on the water company is that:

*GWCL cannot map out strategy for service delivery. The slums are also the hub that sinks unaccounted for water. Some even tapped and sell it in places like Nima and mamobi in Accra*

The views of the interviewee are consistent with the Kofie *et al.* (2008) that the growing incidence of slums in Accra occasioned by rural-urban migration, coupled with limited supply of land and regulatory frameworks makes water supply difficult.

## **7.0 Conclusion of the Study**

This study set out with the goal of understanding how the inadequate institutional structure in the Ghana water sector contribute to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic user. Empirically, it was found that there is a general lack of interest among actors involved in urban water supply process and non involvement of some actors in the process. It was also revealed that lack of political will manifested in lack of continuity of projects of previous governments and diversion of water sector funds for other uses, and huge consumption from industries such as Coca cola, Unilever, and Accra Brewery act together to suffocate urban water supply. Additionally, the findings show that uncontrolled urbanization exists on a massive scale and strangulates efforts to supply water because it makes it difficult for Ghana Water Company to map out strategy for service delivery and to wean bloc consumers. The findings are generally consistent with the theoretical framework of this study. Practically, the results obtained from this study enabled us to understand the broader context issues affecting urban water supply. The overall implication of the study is for the actors and institutions in the water sector regarding urban water supply.

### ***7.1 Ways the Water Supply Institutions can be Improved and what can be done to make this happen***

Having completed the main task of this study, this section reiterated the problems/findings of this study on urban water supply and provided recommendations/suggestions that give a foundation upon which relevant stakeholders can build in order to improve and sustain

water supply in the Accra metropolis in particular and the whole country in general. The recommendations/suggestions would also help the stakeholders to be more focused in directing their efforts and other support programmes.

### **7.1.1 Stakeholder Interest in Urban Water Supply**

The empirical findings show that there is a general lack of interest among actors involved in urban water supply process. The natural consequence is to suggest way(s) stakeholder interest in water supply can be improved. For this, it is recommended that the Sector Wide Approach (SWAP) put in place by the water sector to bring all stakeholders in the water sector to discuss issues of water is a good communicative tool. The SWAP should be speed up, decentralised and more resources committed to its implementation. It is only when the approach is fully implemented and responsive to arising challenges that water supply can be constant. Successful implementation of approach will enhance communication between stakeholders in the water sector. When communication is improved, water connection problems such as rampant pipe bursts caused by another stakeholder would be minimised or eliminated completely.

Additionally, it is clear from the findings that the consumers play marginal role in water supply, despite the fact that the consumer is the beneficiary of water delivery be it for household, business or agricultural use. Conscious efforts should be made to involve the consumer in the SWAP. The consumer involvement is necessary because they know the

problems they face with regard to the inadequate supply of water. When they are involved they will make inputs that will help direct efforts towards improving water.

### **7.1.2 Political Willingness and Institutional Framework for Water Supply**

From the observations of the sampled respondents of this study, it is crystal clear factors such as lack of political will manifested in lack of continuity of projects of previous governments and diversion of water sector funds for other uses, and huge consumption from industries such as Coca cola, Unilever, and Accra Brewery fragment the supply situation.

Both short term and long term measures must be put in place. As a short term measure, Tanker Service Guidelines should be established to regulate the activities of water tankers. For instance, they should be specific charges per kilometer. The hydrant should be sited at vantage point with identification to enable the consumer to know the distance to his/her residence. GWCL and PURC should put identification marks on water tanker containers, this would guide against operators using any container to convey water for consumers. However, they should be comprehensive programme to expand the water service lines with an aim of eliminating the water tanker operators. Remote areas where the services of water tankers are most useful should not be left out in the expansion of water service lines. Alternatively, mechanised bore holes could be dug in the remote communities provided the salinity level is acceptable.

The on-going discussion between GWCL and the bloc consumers like Coca cola, Unilever, and Accra Brewery to develop their own source of water should be hasten to ease pressure in the public system. When such huge consumers are weaned off, adequate water supply would be guaranteed. Connection fees for consumer use especially households should be subsidized and if possible be given for gratis.

### **7.1.3 Urbanization and Water Supply**

Findings of this study show that all the respondents canvassed agreed that uncontrolled urbanization makes it difficult for Ghana Water Company to map out strategy for service delivery and to wean bloc consumers. It is recommended that GWCL should institute community watchdogs committees in the affected areas to clamp down on water theft. Estate developers should work in collaboration with town and country planning and lands commission to have all lands service or developed before being sold out.

## **8.0 Limitations of the Study**

The results of this study are limited in several ways. First, the results are limited not only in relation to the research design adopted, but also the study population. Usually in order to prevent bias and increase the reliability and robustness of the data, a variety of methods are used in the data collection, which also enabled an element of triangulation to be built into the study design. Despite the virtues of methodology triangulation, only descriptive, qualitative design was adopted. In addition, the actors and institutions in the water sector are numerous, but only key informants from PURC, GWCL and consumers benefiting from GWCL direct connections-supply participated in this research. Hence, the findings of the study might limit their generalisability.

Second, Scott's (1995) Institutional Theory provided the framework within which this study was carried out. The assumption of Scott theory that institutions consist of cognitive, normative, and regulative structures is too restrictive and has no room for accommodating changes, but society is not static. As society changes new ways of dealing with issues are adopted. Hence, other theories such as Arnstein's (1967) Ladder of Public Participation could be applied to ascertain the level of involvement in the water supply situation in Ghana. Also, Structural Functionalism Theory originated in the works of Emile Durkheim, Talcott Parsons and Robert Merton stresses the consensual nature of society: institutions and rules exist in order to help society continue to the mutual benefit of its members. This theory could have been applied to do the institutional analysis of urban water supply in Ghana.

## **9.0 Suggestions for Future Research**

Future research can be conducted to explore further the perennial water problem in the Adenta Municipality in the Greater Accra Region. From the findings, the household consumer that was interviewed resided in the Adenta Municipality and indicated that for the past 21 years, the household have never had water from GWCL. A case study can be employed to gain insights into the contextual factors affecting the water situation. The case study method will provide an in-depth description of the subjective experiences of respondents and gives a clearer picture of the concrete household situation.

In addition, research can also be carried out to investigate the newly instituted approach dubbed Sector Wide Approach (SWAP) to bring together all stakeholders in the water supply sector. Emphasize should be placed on modalities of consumer involvement and its sustainability. Future research can also be undertaken to identify potential challenges of the SWAP and areas of improvements which can be used by the relevant actors and institutions to formulate policies to ensure adequate water supply.

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## Appendixes

### INTERVIEW GUIDE (A)

#### INTERVIEW SCHEDULE FOR ACTORS AND INSTITUTIONS IN WATER SUPPLY

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**Dear Respondent,**

This study is designed to do an institutional analysis of urban water supply in Ghana: The Case of Accra Metropolitan Assembly. The main research question to address is: **How the inadequate institutional structure in the Ghana water sector has contributed to the poor operations of the water supply in Accra as the main source of water for both industrial and domestic users? Thank for your participation.**

**Institution Type:** GWCL [ ] PURC [ ] Consumer [ ]

**Actors and Institutions affecting urban water supply in Accra**

How have the actors and institutions **affected** urban water supply?

**Institutions view of the provision of water in the context of their other mandates and goals**

How do the institutions view the provision of water in the context of their other mandates and goals? (Not all important; not important; somewhat important; very important)

What is the role of your institution in water supply?

What is the role of your institution in tariff control?

What would you say about your institution's performance?

How was institution performance prior to privatization of water?

In your opinion, if the Government had not involved the private sector, would your institution be able to improve its service?

### **Relationship among the institutions involved in the provision of urban water**

What relationship exists among the institutions involved in the provision of urban water?

How does your institution monitor the performance of other institutions in water supply?

What has been the biggest challenge for your institution in monitoring other institutions in water supply?

### **Effects of government regulation of institutions on the provision of urban water**

How does government regulation for the institutions support the provision of urban water?

Why did the Government have to ask the private sector to be involved in the provision of water?

### **Ways water supply institutions can be improved**

In which way can the water supply institutions be improved?

In your opinion, what are the main constraints faced by institutions of water supply in their operations in Accra?

Why have been strong oppositions to water privatization from the public and NGOs?

What are the plans for industries like Coca-Cola, Unilever and Ghana breweries among others in providing water for their own use?

### **Willingness of the Political System in the Provision of Water**

In which way will the political system be able and willing to influence the institutions?

Who is responsible in monitoring the private operator to fulfill their obligations?

What are the consequences if operator could not fulfill the obligations?

### **Interview Guide(B) to the Consumer**

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Number of household

How many gallons of water do you use

What is your source of water?

How frequently do you get water for your use?

How long does water run every day in your area?

Do you have difficulties getting water in your area? Can you explain why?



How much do you pay for water per month?

Do you have any problem with the water quality?

Do you use any other source of drinking water?

In your opinion do you think there is the political will to provide water supply in your area

Did you think that industries should supply water? Explain your answer

In general, what are the consequences of having water supply problems in your area?

**TRANSCRIPT OF THE INTERVIEW HELD BETWEEN MR. LAWRENCE YAO ADDO**

**AND MR. ISRAEL ADJEI OF THE GHANA WATER COMPANY**

Q. As part of my Study I am here to ask you a few questions. You're Mr. Israel Adjei, not so?

**How do you go about your Test performances?**

Ans. Test performances are very important. G.W.C is supposed to treat water, transport and distribute to households. Demand and supply forces come in here where GWC provides the water service. But, as a result of the GWC's inability to reach the entire population other people play complementary roles, e.g. Tanker Service. In certain areas like Teshie-Nungua there is an Association of Tanker Service Providers. And so, consumers can arrange for containers in order to benefit from that service. Some tractors have water containers mounted on them. We do not consider them as Tanker Service Providers.

**Q. How does your outfit monitor and control prices?**

Ans. By our mandate we are supposed to fix prices and there are interventions for the poor as a matter of social policy. What we have done so far is to categorize the consumers.

There are the primary, secondary and tertiary consumers. The Tanker service is put in the secondary and tertiary category.

**Q. How do the Tankers get water?**

Ans. The Tankers get water from GWC Hydrants. From 2008 these activities have been streamlined because water must be treated before consumption. The WHO standard is taken into account. The end user as a consumer must also ensure that he/she is getting value for money.

**Q. How sure are you that the supply is reliable?**

Ans. The reliable source is the hydrant. If you have to pay somewhere along the line DVLA (i.e. Driver & Vehicle Licensing Authority) comes in for licensing since they have specifications for vehicles carrying specific products.

**Q. Documentation has been covered but do you have any regulation to cover the rates?**

Ans. There are special rates for special reasons, e.g. GPHA (Ghana Ports & Harbours Authority) pays special rates.

**Q. Does the GWC own the hydrants?**

Ans. No. it's like the land tenure system. There is also the (GNFS) Ghana National Fire Service.

**Q. Are there specific charges?**

Ans. There are special rates in some cases like the hydrant service.

**Q. What determines the prices?**

Ans. It depends on the type of consumer. Some consumers are poor but water from the hydrant is sold at exorbitant price. Some areas are far so water charges depend on the tanker. But if we find out that your pricing is too high a report would be made on you.

**Q. How do you control it?**

Ans. Under our Institution water is directly charged. We want to maximize our service. We want to capture the whole (omission).

**Q. Let's say for example that someone at Teshie-Nungua is moving from that area to 4 - 5 km away, if I'm bringing water from that area how much is the person going to pay? How do you protect the poor consumer?**

Ans. The poor consumer is protected. The price at which water is sold to Tanker Drivers comes from GWC. And so, GWC controls the price from that point, for example, 100 gals is sold at

GHC 100. But if I call from Madina the price would depend on the Tanker service. And if the distance is far the Tanker would decide. However, if we find out that your pricing is above board action would be taken against you.

**Q. So surveys are carried out?**

Ans. Yes

**Q. How do the poor consumer get involved in the supply of water?**

Ans. In our GWC a Unit is there to take complaints in any form from the consumers and others. Currently, they form Consumer Committees where they act as watchdogs.

**Q. Membership?**

Ans. All communities.

**Q. Talking about Tanker Associations should that be the sole distribution outlet since GWC is not able to reach the consumers country wide?**

Ans. They supply the remote areas.

**Q. GWC makes losses of about 60%. How do you go about that?**

Ans. Yes that is true, but we have to determine the causes of this problem. And it will take another dimension. Technically, we have to find out if it is the transmission or the distribution. There are also the physical and commercial aspects involved. Different levels

are required. We are making efforts to solve these, e.g. coca cola consumption. For about 5yrs now we try to know your volume through means such as the installation of bulk meters which determine the exact volume of water used. People are encouraged to pay their bill if they know how much they consumed. Clamping down on water theft, e.g. Water Ministers helping by sometimes going round to identify the culprits. When you talk about physical losses bulk meters installed to care of them.

**Q. How about your recommendation on type of plans regarding pricing for the consumer?**

Ans. What we have done is to ... operationalise. Quality is at stake and so we're developing systems to (omission).

**Q. What efforts are you making to protect the consumer so that the consumer is protected from Water Tanker Service?**

Ans. Tanker Service Guideline is established.

**Q. What would you say is your Institution's performance?**

Ans. We've been there for 11 – 12 years. For every young Institution there is a level of dynamism. Where we have reached, looking at the trends and the economic justification for tariff adjustments which did not go down well with social advocates and the public ... government comes in to (omission).

**Q. How does your Institution monitor?**

Ans. Monitoring is done through the inspection of the facilities. After inspection wider annual report is issued. There are benchmarks that the Monitoring Team look out for.

**Q. How does Government's Institution for the provision of water account for policy direction?**

Ans. The owner is Government and ...

**Q. So what are the plans for industries like Coca cola, Unilever, Accra Brewery etc.? if companies like Coca cola have their own water supply would there be enough water for the poor consumer?**

Ans. If Government should get money to expand Weija to meet demand and supply ... the funding of the project and commissioning ... so talking about justice right now Real Estates and communities which are several kilometers apart if they can also have alternative water supply system it would be welcome. When you get a direct service in your house we need to encourage other players. In the case of Coca cola the tariffs would strike the balance. For specific reasons they are not considered as ordinary. Special rates are applied as obtained in the mining sector where energy consumed by that sector is similarly treated.

**Q. If they should come out with their own source of water?**

Ans. If they should do that it would lessen the pressure in the system. Look at the map that is the rationing of water to the consumer.

**Q. Okay, so what has been your biggest challenge regarding water?**

Ans. From my perspective there are two major challenges – funding which involves Government subvention and external funding. Second is the political. Whoever comes to power has a maximum lifespan of 8yrs during which policies are made and people have to follow the Government’s Agenda. Some people tend to defend the interest of the consumer, e.g in 2006 the then chairman of PURC came up with

You’d realize that we’ve taken a no of measures to manage effectively for the waste to be reduced and to reach full cost recovery for the systems. Some of the goals are long term and short term. There are social and partisan concerns. Some of these are tied to campaigns. But our Institution is not hindered by any of these since we have legal mandate.

**Q. The issue of Ghanaians obtaining water through middlemen. In how many years time would this use of middle men stop?**

Ans. I would say that if you’re going to solve this issue all of us must get involved. Look at the area called Accra. As we try to solve the problem there other peri-urban or semi-urban areas are fast developing into urban areas.

**Q. So are the Institutions working together or collaborating? For example, Town & Country Planning is it co-ordinating as expected?**

Ans. It’s clear that we’re deficient as a nation. There is Swap for the sector stakeholders in the water and sanitation sector. Within the sector wide approach we’re looking at SSDPE for instance where there is a goal that we all agree to reach in some years. How do we get



there? The sector from the Government's point of view, the individuals, the Institutions, the communities - these are all being streamlined by this Swap which has a timetable. During a workshop on Swap we drew a roadmap. Starting from sector policy direction, sector financing – I think we're two steps away. Currently, what is happening is that the Town & Country Planning has interwoven responsibilities, and so a clear definition of their roles have been assigned (i.e. the EPA, Water Resources Commission etc) to them. Benchmarks are also given to them. Normally, when you go for connection to a new site you are asked to bring a Site Plan. How do we get people not counterfeiting Site Plans? These are holding up the Swap. We've set 2015 as the year that we should be meeting those goals.

**Q. Any other comments?**

**Ans.** I'm looking at the other alternatives. Unfortunately, I'm an environmental advocate. Water from surface sources can be treated for the use of rural communities because over 50% (fifty percent) of our landmark is water although there are seasons and times. I want us to start the filtration, there is a lot of filtration therefore communities could design water bore hole facilities where the chemical and physical parameters are determined for the water to be disinfected. The urban water has several pollutants comprising industrial sewage, fishing and agro chemicals which make us buy lots of chemicals to treat it (i.e. the urban water). Therefore after treatment the water is expensive. The cost of treatment is so high that we may not reach there in the next 10 years.

## **HOUSEHOLDS**

**Q. I want to have interview about the water situation in your house. I'm starting with the no. of people in the family. How many are you?**

Ans. Five

**Q. How many gallons of water do you use in a day?**

Ans. I'm sure we'd use a barrel which is about 44 gallons, and this includes bathing, washing and others.

**Q. What is your source of water?**

Ans. Our source is mainly by Water Tankers. We buy 2,500 gallons capacity Water Tanker every month. We store the water in the underground tank and use a pump lift to lift it up to the overhead tank.

**Q. How much do you pay for the Tanker?**

Ans. We pay GHc 80 ( eighty Ghana cedis).

**Q. How long have you been living in this house?**

Ans. 21yrs.

**Q. And you've not had water from the Ghana Water Company (GWC), and only buying Tanker Water?**

Ans. Never.

**Q. And how often do you get it?**

Ans. Monthly.

**Q. Is there any difficulty in getting the Water Tanker?**

Ans. No, because the driver is a friend, so there is a standing order for the supply of water.

**Q. Any problem with quality?**

Ans. No, because of the friendship he gets good quality water normally from the main source. You know there is this story that the Weija water is a bit salty, and so I insist on water from Kpong.

**Q. So, with these 2,500 gallons of water, do you have any other source of water?**

Ans. Yes, there are the satchet water for drinking and the harvesting of rain water during the rainy season.

**Q. In your opinion do you think there is any political will in all this? Don't you think there is the marginalization of you people living here?**

Ans. Yes, we're living in Ashaley Botwe but we're under the Adenta Municipal Assembly (AdMA), a young Assembly carved out from the Ashaiman Municipal Assembly. Sometime ago households were asked to pay a levy of GHc 50. They promised that once this amount

was paid the water problem would be solved. We paid this amount but they have reneged on this promise.

**Q. Does it mean you were paying for pipelines to be laid near your house?**

Ans. Yes, exactly.

**Q. Have you made any follow-up?**

Ans. Yes, when you enquire about it they tell you stories. I say stories because they keep making promises but within the year nothing happens.

**Q. Any suggestion? How do you think the situation could be improved?**

Ans. The best source would be from the main pipelines where through the award of contracts by Government, GWC could connect us to the main (national) pipeline to enable us get our supply of water.

**Q. Do you think that private partners can help as the GWC is not able to supply you for the past 20 yrs?**

Ans. That would be a good idea because when pipelines are completed we can then have that as the main source.

**Q. Any suggestion you want to offer?**

Ans. Yes, water is important in every home so Government should help in order to have regular supply or they can institute a system where private Institutions would take part of the work.

**Q. What is your assessment of GWC which is mandated to give you service?**

Ans. I think for our area their service is non-existent and so I'd score them very low, but somewhere else like my workplace if you report a problem (pipe burst) to them their response rate is low so I think maybe they don't have the logistics or other technical men. They have a lot to do in the provision of water.

**Q. To confirm what you said you've never had any supply from the GWC for the past 20 years and you pay GHc 80 for the 2,500 gallons Water Tanker?**

Ans. Yes, that is what we do.

**Q. Any other thing to be said – final comments?**

Ans. I think Government should get more involved in the supply of water to the localities. At least from the newspapers I get the impression that low funding is affecting their work. Therefore more funding from the Government might help them to deliver. I'm sure when this is done there would be an improvement in the water supply.

**Q. Thank you.**

Ans. Thank you very much, you're welcome

