

**MANAGEMENT, USES AND VALUES OF  
DEMAND-ORIENTED DOMESTIC WATER  
FACILITIES IN THE AKATSI DISTRICT OF  
GHANA**

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**BY**

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## ABSTRACT

Community participation and management has been hailed as central to the provision of essential services like clean water facilities to underserved communities in developing countries. In Ghana, community participation and management is seen as the blue-print to water facility provision and management in both rural and small towns of the country due to the failure of the top-down approach to the provision and management of this essential facility. I argue in this thesis that the water sector reform in Ghana is being influenced by external forces like the World Bank (WB) and the International Monetary Fund (IMF) as such community management (CM) of water in rural areas of Ghana is not made to serve the interests of the poor but to relieve the government of providing good and affordable water to these people. It is argued in the thesis that the use-values people in rural and small towns attached to different sources of water are not properly enumerated in the water sector.

This thesis presents a comprehensive analysis of the bottom-up approach to water facilities provision in the Akatsi District of Ghana through the use of extensive field surveys, observation, focus group discussions, and interview with key informants in two communities- a rural community that benefited from a borehole (tube well) facility and a ‘small town’ where people use different forms of water sources like wells, boreholes, rain harvesting systems and pipe scheme (gravity fed borehole). The study assesses how the facilities are being managed and reasons why people use a particular water source at a particular time.

Findings show that whilst water has been commodified, remuneration given people managing the facilities have not been commodified. Women agreed to participate in water management but later leave the water and sanitation development boards (WSDB) because they derive little remuneration from this undertaking. Within the WSDB, there is no consensus of opinion among “indigenous” citizens of Akatsi and people from different towns serving in the board on how the facilities should be managed. Sustainability and replication of the facilities is at stake because institutions and bodies owe the WSDB arrears that could have been used to pay for the initial capital cost incurred by the DA or extension of service to new areas. The DA is also not assisting the WSDB to institute legal action against these defaulters to recover these costs because the water facilities in principle belong to the community. Indeed, the institutional pluralism in the construction and management of water facilities in rural areas and small towns of Ghana is de-motivating WSDBs and people in beneficiary communities to make additional contribution for the development of their water systems because some communities were assisted with water facilities without paying initial capital cost of construction. Even though distance people travelled to gather water has been shortened as a result of the provision of public stand pipes and boreholes in various locations in Akatsi, the new infrastructure associated with the CM strategy has increased time spent gathering water. The findings also show that people of Akatsi do not have demand for the water facilities being provided them because they refused to pay part of the initial capital cost of the facility provision and get connected to the piped network. They are also resisting CM of water facilities because they do not take part in the activities of the WSDB leaving the facilities to be managed by these selected few. Findings from the thesis shows that the use-values people attached to a particular type of water are very important in addition to the price they have to pay to use it. People use a particular type of water for a specific purpose base on the characteristics the water possesses. Borehole water does not replace rain harvested water or river use because of its taste and hardness.

The study reiterated that existing local water management strategies like rainwater harvesting should be incorporated into CWSP in small towns as well as villages for the people to use this water source for purposes like drinking or washing. This study fills a gap in development geography which often overlooks how gender is created through water resource interventions by concerning itself with how new meanings of community management is reinforcing gender inequality and spatial development through water facilities management and its commodification. It contributes to feminist and development geography literature by demonstrating that participatory approaches to water resource management act as a constraint to women empowerment and poverty alleviation. The study concludes that, community participation and management of water facilities is not benefiting the intended beneficiaries as such the whole concept of community participation and management should be given a second thought in the development geography literature.

**Francis Shine Gbedemah**

## **DEDICATION**

This thesis is dedicated to the loving memorial of my late mother Agnes Abla Seshie for her encouragement, assiduous support and care throughout my educational life. Without her encouragement and support, this work would not have materialised. I also dedicate this thesis to the loving memorial of my late father Daniel Dey Gbedemah and late sister Justine Edem Gbedemah, people who could not live to see the fruit of their labour.

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## LIST OF ABBREVIATIONS

ADA	Akatsi District Assembly
AVRL	Aqua Vitens Rand Limited
BOOT	Build Own Operate and Transfer
CDD	Community-driven Development
CM	Community Management
CWSA	Community Water and Sanitation Agency
CWSP	Community Water and Sanitation Programme
DA	District Assembly
DANIDA	Danish International Development Agency
DWST	District Water and Sanitation Team
EPA	Environmental Protection Agency
ERP	Economic Recovery Programme
FGD	Focus Group Discussion
GAD	Gender and Development
GoG	Government of Ghana
GSS	Ghana Statistical Service
GTZ	Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation)
GWCL	Ghana Water Company Limited
GWP	Ghana Water Policy
GWSC	Ghana Water and Sewerage Corporation
GPRS	Ghana Poverty Reduction Strategy
HIPC	Highly/Heavily Indebted Poor Countries
IDA	International Development Association
IDWSSD	International Drinking Water Supply and Sanitation Decade
IMF	International Monetary Fund
ISODEC	Integrated Social Development Centre
IWRM	Integrated Water Resources Management
KfW	Kreditanstalt für Wiederaufbau/German Agency for Technical Cooperation
LDC	Less Developed Countries
MDA	Ministry, Department and Agency
MDGs	Millennium Development Goals
MNC	Multinational Corporation
MWRWH	Ministry of Water Resources Works and Housing
NGO	Non Governmental Organisation
PAMSCAD	Programme of Action to Mitigate the Social Cost of Adjustment
PCS	Post Construction Support
POs	Partner Organizations
PPP	Public Private Partnership
PRSP	Poverty Reduction Strategy Paper
PSP	Private Sector Participation
PURC	Public Utilities Regulatory Commission
PWD	Publics Works Department
RWST	Regional Water and Sanitation Team
SAP	Structural Adjustment Programs
UNDP	United Nations development Programme
UNEP	United Nations Environmental Program
WATSAN	Water and Sanitation

WB	World Bank
WHO	World health Organization
WRC	Water Resources Commission
WSRP	Water Sector Restructuring Program
WSDB	Water and Sanitation Development Board
WWC	World Water Council

### **Local Languages Used and Their Translation**

Ewe	-	The local dialect spoken by people of southern Ghana, southern Togo and southern Benin
Akpeteshie	-	Locally brewed strong alcoholic drink
Torgbuiwo	-	Traditional rulers of Chiefs
Atitoeti	-	Black berry (Velvet tamarid)
So	-	Thunder
Ë fa	-	Something that has serene quality (cool)
Chop bar	-	Road side local food vendors
Koko	-	Porridge made from fermented corn flour
Gari	-	Cassava flour
Kenkey	-	Local food prepared from fermented grinded maize
Banku	-	Local food prepared from mixing fermented grinded maize and cassava dough

# CHAPTER 1 - RESEARCH PROBLEM AND AIMS

## *Don't Spit in the Well - You May Need to Drink from It*

### **1.1 Introduction**

The provision of potable water to communities and households has been a major developmental goal since the 1990s and has seen many conferences and declarations aimed at effecting changes in water sources and use. Some of these conferences like the 1992 Dublin Conference, the Water Supply and Sanitation Collaborative Council's Global Water forums, the World Water Council's World Water forums and the United Nation's (UN) Earth Summits led to a shift in water provision and management (Makoni et al, 2004). The shifts in water management are "*messy and full of contradictions*" (Ahlers and Zwarteven, 2009: 414) yet two management principles can be observed. The first principle is the involvement of the market in water management termed "water commodification" (Bakker, 2003; Harris and Gantt, 2007; Page, 2003; 2005). The second, which is being promoted and practiced in rural communities of developing countries like Ghana, is community management (CM) – which is defined here as the engagement of water users, or "communities" in the formulation, provision, management and use of domestic water facilities. In this thesis, using the case studies of two communities - Akatsi and Torve in Ghana, I argue that international development and donor (World Bank and NGOs) policies relating to CM of water cannot be the panacea for rural water provision on a sustainable basis.

Even though people pay for water in Ghana before the 1990s, major changes were made to the way people acquire water through the imposition of user fees or cost recovery principles (Bakalian and Wakeman, 2009; Harris and Gantt, 2007; Woll, 2008). According to Bakker (2007: 430), the shift from water use without payment to water as a commodity was initiated

at the Dublin Conference in 1992 but cemented at the Water and Environment Ministers World Water Forum conference in 2003 at Kyoto. Furious anti-water privatisation campaigns and protests occurred throughout the developing world over the past decade (Hall et al., 2005). In Ghana the anti-water privatization campaigns were led by a number of prominent anti-privatization campaigners like Rudolf Amenga-Etego through his movement called Campaigning Against Water Privatization in Ghana and the Integrated Social Development Centre, a non-governmental organization. These anti-privatisation campaigners and organizations campaigned vigorously for “community” management of water supply as an alternative or to compliment private-sector provision.

Indeed, CM in Ghana dates back to colonial and post independenc era (Kudiabor, 1986). However, CM principles were initiated on a large scale during the 1990s as complimentary to the neoliberal principles of multinational corporations (MNCs) managing water. The World Bank (WB) and International Monetary Fund (IMF) came to associate themselves with CM as a result of the stiff opposition by Ghanaians to MNCs management of water (Goldman, 2007; Yeboah, 2006). Also, the withdrawal of MNCs from managing water supply under neoliberal principles in developing countries like Ghana (Whitfield, 2006) made the WB and IMF perform a u-turn to support CM through their loans. Under the neoliberal reforms in Ghana called Economic Recovery Programme (ERP) or Structural Adjustment Programme (SAP), cost recover principles have been introduced to water management. Water therefore was commodified not only in the urban areas but also in the rural areas.

According to Harvey (2006: 145) neoliberalism is:

“a theory of political economic practices which proposes that human well-being can best be advanced by the maximization of entrepreneurial freedoms within an institutional framework characterized by private property rights, individual liberty, free markets and free trade”.

This neoliberal strategy was pursued and is still being pursued by the WB and IMF, the governments of the leading Organisation for Economic Cooperation and Development (OECD) countries and donor agencies (Harris and Gantt, 2007). The aim is to reduce public sector involvement in the delivery and management of essential public services like water (Agyeman, 2007; Bakker, 2007; Owusu, 2004; Yeboah, 2006). To this study, these neoliberal principles were introduced in order to safeguard the loans the WB and IMF have given to countries that borrowed money from them. Neoliberal reform is seen as a tool to meet the United Nation's Millennium Development Goals (MDGs) by 2015 (Balen, 2006; Castro, 2008). Under neoliberal reforms, water has been given a "price tag" termed "water commodification". Private MNCs are to be engaged in managing water services (Whitfield, 2006).

Throughout the world in the 1990s, water markets were created where individuals, communities and organizations can provide and sell water (Bakker, 2005; Spronk, 2007) that was previously provided without any payment being made for it. Indeed, this assertion does not mean that people in developing countries never pay for water. The price paid for water especially in urban areas was so low that people do not regard it. Even though it is possible to commodify a product without market principles being introduced into it (Bakker, 2008) as the case of water is, water commodification is said to be the "*use of market mechanisms for water management either by a public or private entity*" (Harris and Gantt, 2007: 5). It is important to distinguish between the object of water and the service of water supply when discussing the commodification of water. Page (2005: 295) pointed out that unlike other products, water supply does not tend to move very far between points of production and consumption because it is heavy and bulky which can increase the cost of its transportation. Secondly even though state agencies may be involved in the production of products through the provision of incentives, taxes and regulations by the government, the state is more

intensely involved in the production of water because it is regarded as a basic necessity of life. Also, water supply is at times regarded as a service instead of a good. This simply means that the consumer of water does not pay for the water that is delivered to his or her house rather the consumer pays for the delivery of the water to that house. Finally, unlike other products like flowers which have a discrete quality, water has a continuous quality. These characteristics of water make it difficult to distinguish it from other objects of commodification. Commodifying water does not necessary mean bringing MNCs to manage water in a country but can be seen in cost recovery mechanisms where costs incurred in the production of water has to be recovered through the imposition of user fees on users. These commodity agenda brought about increase in the price people have to pay for water (much discussion of this can be found in Chapter 2 of this thesis) which was hitherto regarded as a “a gift from God”.

The idea of paying for the production cost of water is however being promoted by the WB and IMF with the explanation that efficiency and sustainability will be ensured (Brown, 1997). By focusing the international community on water as a commodity, water is no longer seen as a public good. More so, people who hitherto were seen by governments as beneficiaries have been transformed into water consumers yet, women and poor rural people are expected to contribute free labour for the management of their water resources, which in the long run will arguably benefit the whole community (Bakker, 2003). Furthermore, according to certain commentators, the WB and IMF’s “*policies are gendered*” (Walby, 2009: 1) and “*unequal gendered access to resources is being perpetuated and legitimized by the introduction of market mechanisms in the water sector*” (Bennett et al, 2005: 57). This means it is not all within a community or society who benefits equally from development interventions, however the introduction of neoliberal principles in the form of cost recovery

principles in the water supply sector can have adverse effects on women and vulnerable groups like children.

Proponents of the use of cost recovery principles in water production and management point out that water is scarce and should be allocated like any other scarce commodity through market principles (Rogers, et al, 2002). Page (2005) points out that proponents of market environmentalism argue for market penetration into water management because by giving public water companies to private organizations to sell water at its full price of production, the product can arguably be produced, distributed equitably and conserved sustainably. The proponents argue that, poor communities stand to gain when water is commodified because subsidies would be removed from water that is enjoyed by the more affluent consumers and this would be used to develop more facilities in poor communities (Winpenny, 1994).

Critics of neoliberal ideas however argue out that, water has no substitute and is essential for life. As such it should be seen as a human right (McDonald and Ruiters, 2005). The critics of neoliberal ideas proposed states should take responsibility for managing water against private interest (Johnston, Gismondi and Goodman, 2006; Goldman, 2005; Laxer and Soron, 2006). The critics argue that bringing market principles into water management will make water more expensive to users than public sector systems (Estache and Rossi, 2002). CM was therefore proposed to compliment private provision and management of water.

As already said, CM dates back to colonial and post independence era in Africa however, opponents of neoliberal policies proposed CM as complimentary to water privatization (Ponniah and Fisher, 2003; Ponniah, 2004). Shiva (2005) is one of the many academics who assert that participation of local people in water management is important to conserve and manage the resource on a sustainable basis. Shiva (2005) in her “water democracy” pointed out that “*without water democracy there can be no living democracy*” (Shiva, 2005: 167).

She espoused how all people must be involved in the management of their environment and resources, with water no exception, so that both the environment and the community can be sustained by pointing out that water management should grow “*like a tree, from the bottom up*” (Shiva, 2005: 167). The World Watch Institute’s *State of the World* report also states that

“for decades we have been told that there are only two choices for the management of scarce resources: corporate self-seeking or the bureaucracy of the state. But there is another way. Commons management has worked for centuries and is still working today” (Rowe, 2008: 150).

CM has been defined as a system of resource management that is “*associated with ‘appropriate technology’, small towns and payment through grants or locally derived investments*” (cash contributions, voluntary labour and payment in kind) (Page, 2003: 484). The members of a community should be active in taking responsibility, deciding and maintaining services and facilities in their community (Schouten and Moriarty, 2003). The concept literally implies devolving power, authority and control from state agencies to communities with the ultimate aim of making the community the owners of the facilities (Page, 2003; Schouten and Moriarty, 2003). This thesis, however, argues that CM is a means of removing government responsibility for water provision and management because the managers of the community water devise their own strategy of collecting fees from water users (a form of water commodification) for daily operation and management of the system which, potentially drives the poor away from enjoying the facility. It can be seen from the discussion above that, proponents of CM are not entirely against water commodification but rather are against the management of water by MNCs.

In Ghana, International and local actors within the water sector are encouraging community participation and management of domestic water supply. The World Bank, through its assistance to the water sector in Ghana based its argument on division of responsibilities in the water sector where public institutions are deemed more appropriate for managing water in

a larger geographical area (urban setting) while the small geographical area (rural and small towns) facilities are to be managed by the community. The new CM concept is said to be demand-oriented or demand driven (Fuest, 2006).

Under demand-oriented CM, effective communication strategies, the use of market principles, social, technological and environmental considerations are employed by both government agencies and Non-Governmental Organizations (NGOs) for communities to manage their water supply facilities (Deverill et al, 2002; Fuest, 2006). In Ghana, demand-oriented water facilities are characterized by communities deciding to participate on their preferred service level based on the communities' willingness to pay. They contribute 5% of the capital cost of the facility provision in cash, and supply the normal operations, maintenance and repair costs of their facilities. This is contrasted with the supply-oriented approach that was applied before the 1990s where a government institution supplied water facilities and managed it with no community input. According to the CWSP of Ghana, water user communities are to be formed and community members have to

“make meaningful contributions to their project in the form of cash, labour or in-kind contributions under the demand-oriented water policy of Ghana. Finally, the communities must take responsibility for sustaining their systems” (Fuest, 2006: 5).

The idea behind the demand-oriented water policy in Ghana is that, water delivery should be based on community and institutional demand for water instead of the supply-oriented policies implemented by governments before the 1990s. The main features of demand-oriented water policy as propounded by the WB (1999: 3) and applied in Ghana are:

- The community decide if they want to participate in the project.
- The community decide on their preferred service level based on willingness to pay.
- The community contribute toward the capital cost of the facility (at least 5-10% cash contribution). And

- The community pay the normal operations, maintenance, and repair costs of their facilities.

The community formally owns the water facility and the District Assembly (District Assemblies (DA) are local government bodies responsible for overall development of a district in Ghana) acts as care taker in the event of a dispute in management. According to the WB (1999), through this policy, governments create an enabling environment by setting clear national policies and strategies for communities. The capacity of the community is to be strengthened through training and awareness creation in order to stimulate demand for the facilities.

I argue that in this study that even though water has been made into a commodity through cost recovery or cost sharing in rural communities, the Government of Ghana (GoG) and its development partners like the WB and IMF still expect water managers to undertake their work on a voluntary basis. In the long run, and contrary to the arguments put forward by the UN and Bretton Woods institutions, I argue that this is not empowering. In other words, whilst water has been commodified, the labour required for water management has not been commodified. This thesis therefore presents a fundamental awakening to the debates of remuneration to rural water managers to demonstrate whether they are happy with the remuneration being offered them for managing the water facilities of their communities. Empowerment here is defined in line with the World Bank's (2000/2001; 39) definition of:

“enhancing the capacity of poor people to influence the state institutions that affect their lives, by strengthening their participation in political processes and local decision making”.

Indeed, there are different sides to empowerment. The definition of empowerment by the WB relates specifically to states, which is ironic in the case of a debate about privatizing services to benefit women and rural people.

The contradiction can be seen in the definition by Moser that empowerment of people or women is:

“the capacity of women to increase their own self-reliance and internal strength. This is identified as the right to determine choices in life and to influence the direction of change, through the ability to gain control over material and non-material resources” (Moser, 1989: 1815).

I argue that empowerment is complex (Bhasin, 2001), but it is lack of financial empowerment that has driven public institutions out of water provision and management (Karikari, 1996; Yeboah, 2006) and community members are now being asked to take responsibility for the sustainable management of water purely on a voluntary basis.

## **1.2 Contextualizing the Water Problem**

Water is valued for sustaining life in both plants and animals. In the case of human beings, water is used for drinking, bathing, washing clothes and household utensils, and for cooking. In both developing and developed countries, a wide range of cultural, spiritual, and religious values are attached to water (Shiva, 2003). Because of the importance of water, the Ghanaian government, together with its development partners like the World Bank and International Monetary Fund effected changes in water management both in urban and rural areas. It is of importance to note that the management of water in Ghana after independence was the responsibility of the Ghana Water and Sewerage Corporation. However, reforms were initiated during the 1990s where two bodies were created to manage water. The Ghana Water Company Limited (GWCL) is to manage water facilities in urban areas of the country while the Community Water and Sanitation Agency (CWSA) was created to coordinate and facilitate the new water sector in rural areas and small towns.

Huge investments have been made in the water sector of Ghana during the last two decades by both the Government of Ghana (GoG) and “development” or “donor partners” like the WB/IMF and non-governmental Organizations (NGOs). Many communities have been assisted with potable water facilities. For instance, the strategic investment plan of Ghana pointed out that a total of 260,343 million cedis (£130, 171 million) have been invested by international donors and the Government of Ghana (GoG) in water facilities provision in 2006 alone. Also, the WB earmarked \$15 million to improve the small town’s water sector in 2009. Indeed, the number of rural people with access to potable water and sanitation facilities in the country is on the increase from 56% in 1990 to about 74% as at 2006 (GoG, 2007). This shows that the target of providing water to around 74% of the people of Ghana in order to attain the Millenium Development Goals (MDGs) has been reached already. However, given the current high level of donor assistance to the water sector as shown above, and the advantages of CM in water facility provision and management being promoted, more attention needs to be placed on how the facilities are being managed and the use-values people derived from the water facilities. Table 1.1 below shows the proportion of people in both rural and urban areas of Ghana with access to potable water from 1990 to 2006 and projections into 2015.

**Table 1.1: Access to Potable Drinking Water in Ghana, 1990-2015**

<b>Area</b>	<b>1990</b>	<b>2006</b>	<b>2015</b>
Rural Ghana	39	68	-
Urban Ghana	86	79	-
Whole Country	56	74	78

Source: Water and Sanitation Monitoring Platform (WSMP, 2009)

It can be seen from the table above that many people both in the urban and rural areas of Ghana have access to potable water sources. The most important catalyst to the achievement of the targets of water provision can be attributed to CM. as noted already, under CM in rural

areas of Ghana, communities pay 5% of the initial capital cost of the facilities and bear all other operational, maintenance and repair costs of the facilities (CWSA, 2003). The District Assembly also pays 5% of the initial cost of the facility whilst the development partner pays the rest (90%). Official government policy is for rural communities to pay towards the initial cost of water facilities and then to manage the facilities after they have been constructed for them. This policy contravenes the GoG officially stated water facilities construction project objectives of increasing service coverage to achieve the MDG of halving the proportion of people without access to sustainable sources of water. What is more, women have been assigned a vital role in the management of the water facilities. It should be noted here that, it was the management aspect of water delivery and not necessarily the provision that drove government from managing water in Ghana (Karikari, 1996).

Under the CM programme, members of a community were encouraged to form Water and Sanitation Development Boards (WSDB) in small towns and Water and Sanitation Committees (WATSAN) in villages to plan, construct and manage the water facilities (Lane, 2004). About 30% of all WSDB and WATSAN are to be made up of women. These women are supposed to work to serve their water boards and committees on a voluntary basis (CWSA, 2003: 2004) with little remuneration whilst water managers in cities or urban areas are paid wages. I argue in this thesis that this arrangement of paying remuneration to water managers is discriminatory and will not lead to improvement of the living standards of women in particular.

The reforms in the water sector in Ghana, according to Amenga-Etego (2003) and Hall et al, (2005) were not initiated by the Government of Ghana (GoG) but by the international financial institutions like the WB and the IMF. According to Amenga-Etego (2003: 2);

“bilateral and multilateral loans and grants, including Highly Indebted Poor Countries (HIPC) and Paris Club debt cancellations have been made conditional upon the privatization of essential public services such as water, railways, electricity and banking”.

The WB Country Assistance Strategy to Ghana in June 2000 pointed out that Ghana stands to gain from a loan commitment ranging between £150 and £350 million pounds, with the upper figure being given upon the demonstration of private sector participation in the country (Rahaman, et al, 2007: 642). A further £50 million concessionary loan for the development of water supply infrastructure in the Accra-Tema Metropolitan Area (ATMA) alone was promised by the Bretton Woods institutions (Amenga-Etego, 2003).

The injection of WB and IMF funds into water provision in Ghana led to improvement in water delivery as was shown in table 1.1. It was noted that about 25 – 45% of communities in the southern Volta Region of Ghana have improved water sources (GSS, 2003), however, Asante and Ansa-Asare (2001), Asante et al (2002), Engel et al (2005) and Gbedemah (2009) found in their studies that women hardly use potable water facilities for drinking even though they are available within their communities. It is important to understand the complex reasons why these water points are not being used by the people they are meant to serve. Also, the GPRS document states that:

“many rural communities continue to rely on ponds and streams as their main source of water, resulting in undue exposure to guinea worm, bilharzias and other water borne diseases” (GoG, 2005a: 71).

Due to the huge investment that was made in the water sector of Ghana by both international development partners and the Government of Ghana, people of rural communities and small towns in Ghana now have access to different sources of water like small town pipe water schemes, boreholes, rainwater, both lined and unlined wells, rivers, ponds and streams. It is important to understand the reasons behind the choice of use of one source of water as against the others and the use-values people attached to each water source. Each use of water is

supported by different user values (Marcoulier and Coggins, 1999). Domestic water users value water based on certain qualities the water possesses. Naturally, the use-value of a water source to a household will depend on income, wealth, taste, prices of other water sources, education of the household, culture and even customs of the people. In this thesis use-value refers mainly to the inherent or intrinsic qualities a particular source of domestic water possesses compelling people to use it for a specific purpose. The implicit argument being pursued in this thesis is that the use-values of drinking water will differ across the different water sources in the study area. A comprehensive water policy addressing the broader array of human perceptions, meanings and use-values related to water are needed. Rational decisions supporting domestic water supply development, allocation, and use require knowledge of the use-value of water. There is the need to understand the reasons behind the use of a specific water source.

The use-values people derived from different sources of drinking water are therefore ignored in water provision in Ghana. Valuing water should not just be an economic exercise but should also be based on the intrinsic qualities people attach to the consumption of water from a particular water source. This can reveal society's preference for a particular source of water. Moreover, knowledge is particularly scarce in Ghana about the changes in household's use-values of water as a result of the CM approach adopted in the country. This makes the dynamics and determinants of domestic water sources, management and use only partly understood which can affect the use of most water facilities (Asante et al., 2002; Bour, 2004; Lane, 2004). There is therefore the need to understand changes in household and individual water sources, management and use in this context of changes in water management over the last two decades.

Indeed, it is over 6 years since pipe water was introduced to the people of Akatsi District where the researcher undertook his national service. In the Akatsi District, which also serves as the case study area, water facilities are being provided however, it has been realized that issues are not just concerned with water facilities provision. It goes further to the maintenance of the facilities for sustainability (which is meeting the present and future use).

About 33% of the people of the Akatsi District do not have access to potable water and 50-60% of boreholes constructed are not functioning in the district (ADA, 2006). It is therefore important to understand the complexity of the reasons behind these water points not being provided, how they are being managed and used for good planning in the water sector. Also, it was documented that only 200 households are connected to the facility out of an estimated population of 30,000 (ADA, 2006). The study will therefore reveal what is preventing house owners and people of Akatsi from connecting to the facility. This study therefore serves as a good avenue to ascertain how community water facilities are being managed and used.

Linked to the low level of connection to the water network in Akatsi is a problem of different management approaches by different actors in the water sector of Ghana. For instance, it is not known how boreholes (tube wells) constructed by NGOs before the inception of the CWSP are being managed in the communities. Water facilities constructed by World Vision and Seventh Day Adventist Development organizations during the 1980s are still serving the people in Akatsi and other communities but little is known of who manages them and how they are being managed.

A lot of work has been done in Ghana on water reform (Agyeman, 2007; Bakalian and Wakeman, 2009; Eguavoen, 2007; Fuest, 2006; Fuest and Haffner, 2007; Nyarko, 2007; Whitfield, 2006) and on the impact of the introduction of CM of water resources (Doe and

Khan, 2004; Eguavoen, 2006; Eguavoen and Youkhan, 2008; Engel, et al, 2005; Entsua-Mensah, 2007; Komives et al 2007; Nyarko et al, 2006; Whittington et al, 2008). However little attention has been paid to the use-values people attached to the different forms of water available in their communities. It is important to understand the mechanisms under which the water sources constructed before and during the CWSP of Ghana are being managed for sustainable provision and management of the facilities.

The thesis investigates the reasons why community-based water supply management is not necessarily a panacea to water provision in Ghana at the community and household levels. Also, the thesis shows why CM is not a viable option for the attainment of the Millennium Development Goal (MDG) of halving the number of people without sustainable access to water. The study presents a fundamental reappraisal of the politics of water within and between communities, households and even between individuals managing community water. The politics of water management is important because it can hamper or promote sustainable management and use of the water facilities provided in the communities. The aims of the study are highlighted in section 1.3 below.

### **1.3 Aims of the Study**

The broad aim of the study is to examine CM and use of water facilities in two communities that benefitted from the bottom-up approach to water facilities management. This objective stems from the fact that the Ghana CWSP has been hailed as a success story of a “*client based model*” by the 2006 Human Development Report. The report pointed out that “*the decentralization of rural water supply in Ghana is a demand-responsive approach that is working*” (UNDP, 2006: 102-103). This claim will be investigated using Akatsi and Torve, two communities in the Akatsi District of Ghana that served as the pilot study of Ghana’s

CWSP. Under the CWSP, Akatsi a small town which also serves as the district capital was provided with mechanized tube-well herein called pipe-borne water, and borehole water facilities. The Danish government also provided Torve, a village with a borehole facility. The study will show how and why people in these two communities use different sources of water and compare it with stated objectives of the CWSP. Four specific aims are explored:

1. To assess how the water facilities are being managed and the benefits people of Akatsi and Torve are deriving from the demand-oriented community water programme. This aim will assist in pinpointing reasons for success and problems with water management at the community level. This will contextualize the case study research within national policies and declarations on water. Chapter 6 of the study will pursue this aim.
2. To determine the role of community politics in shaping community water management in Akatsi and Torve. Here, specific contexts will be analyzed to determine whether community management might result in worse access for poor people in a community. This will help determine whether giving autonomy to communities to manage their water supply can improve and sustain its management for the attainment of the MDGs. Chapter 6 of the study will assess this aim.
3. To determine the different sources of water, drawers of water and storage of each particular source of water by people from different income groups. This aim will form the basis of Chapter 7.
4. Finally, to examine the reasons why people use a particular water source and the different use-values people attach to the different water sources in the study area. This is because this thesis argues that policy makers only value water in financial terms.

This aim is very important because, place-based and personal attitudes attached to ‘old’ water sources like rivers and rain harvested water can conflict with the ‘new’ water points like pipe and borehole water. This aim will be examined in Chapter 7.

#### **1.4 Structure of the Study**

The thesis is organized into 8 Chapters. This Chapter forms the introductory Chapter and deals with the main research issues. It introduces the problems being investigated and discussed, the aims and rationale of the study. Chapter 2 involves a critical review of some important concepts and theories relating to this study, including neoliberalism, the policies of Structural Adjustment (SAP) and Highly Indebted Poor Countries (HIPC) initiative. The nature, practice and implication of water commodification are discussed. Complimentary water management to MNCs is also discussed under theory and practice of community participation and management of water. The Chapter also reviews the literature regarding the policies and programmes aimed at improving water management and use throughout the world and in Ghana in particular. It also shows how the research topic builds on and criticizes the present knowledge of CM of water.

Chapter 3 goes on to report, discuss and evaluate the case study research design and methodology together with how the data is analyzed and interpreted. Positionality and ethical issues involved in data collection are also discussed. Chapter 4 consists of a discussion of the genesis of water provision in Ghana, customary water management, Ghana’s water sector reforms and water policy. It also discusses how the private sector is to participate in water management in both urban and rural areas and the different stakeholders involved in water management at national - and local levels. The Chapter is concluded with a discussion on actual and planned water facilities constructed in the Akatsi District under CM principles.

Chapter 5 introduces the case study area of Akatsi and Torve. Whilst Akatsi is a small town, Torve is a rural community. The Chapter reviews issues of governance, land use, physical features, socio-economic characteristic, culture and religion of the people in these two communities and the whole district in general. The different water sources in Akatsi and Torve are also reviewed here. Chapters 6 and 7 provide detailed analysis of the results obtained from the field as pertains to the objectives of the study. These two chapters use both qualitative and quantitative empirical data. The difference between these two chapters is the fact that Chapter 6 assesses the management aspect of CM whilst Chapter 7 assesses the uses to which the water facilities are put by the people.

Chapter 6 analysed water management in Akatsi only by arguing that, the management of water facilities in Akatsi by local residents is not the panacea to water provision to meet the MDGs and thereafter. The chapter discusses the commodification of water in Akatsi Township and argues that CM of water facilities is reinforcing not only unequal gender relations but also reinforcing inequality of income between rural water managers and their urban counterparts. The chapter shows that the water facility is not generating sufficient revenue to re-pay the 5% initial contribution which the DA paid on behalf of the community. This is because institutions and organizations are enjoying free water since the water facility ‘belongs to the community’ yet, poor and disabled people are denied water and those who cannot pay for water were disconnected. On sustainable access to water to achieve the MDGs, the chapter points out that the number of hours water flows in the taps in Akatsi is not sustainable. Since members of the WSDB are nominated by selected group of people within the community, they do not feel obligated to seek the interest of the poor neither are they accountable to the community but to the DA. This does not promote “water democracy” being argued for under CM. The chapter also assesses ownership of water facilities in Akatsi

and it shows that most people do not know that the water facilities belong to their community.

Chapter 7 which assesses uses to which the water facilities are put points out that provision of clean water by the Community Water and Sanitation Programme (CWSP) and other development partners in Ghana does not lead to the water facilities being used by beneficiary communities for domestic purposes as intended. This is because policy makers assume that any new water facility (borehole or pipe borne water) is good enough. This chapter shows that water quality for specific purposes is more important for people in Torve and Akatsi - and shapes how water is actually used. The chapter argues that, rural people attached specific use-values to each water source and appreciating these use-values of water can not merely be an intellectual trick but rather has implications for the sustainability of the water facilities. It is argued in this chapter that the reliance on rural communities to manage the facilities for sustainability is fundamentally flawed because, the quality of the water points in these communities are not considered in the CM concept leading to people not using the water facilities. Chapter 8 summarizes and concludes the study with policy implications and suggestions for future research.

## CHAPTER 2 – LITERATURE REVIEW

*“Some Birds Avoid the Water but Ducks Seek It”*

### 2.1 Introduction

This Chapter forms the backbone of the thesis, therefore it critically reviews important current debates, theories and concepts accounting for, and having implications for CM of water resources. The argument in this Chapter is that the neoliberal principles of the WB and IMF have led to water management being given to companies to be managed as any other commodity (Goldman, 2007) in urban areas of Ghana. In rural areas where CM is being advocated as complementary to private sector management of water, neoliberal principles still find their way into water management under the label “cost recovery” or “cost sharing”. The Dublin Principles, which set the scene for incorporating the private sector into water management (Bakker, 2007) also called for active reliance on women to manage community water resources. Yet, the international community led by the WB and IMF turned a blind eye on CM policies that pays allowances for the services rendered by women even though cost recovery policies are being implemented under CM. The Chapter therefore reviews theories, principles and policies that impact on the management of water at the community level to set the scene for the case study research.

The Chapter is organized into 5 sections including this introductory section. Section 2.2 reviews the literature on neoliberal policies of economic liberalization of water management throughout the world and how it has affected people in Ghana, especially vulnerable people in rural and poor communities, women and children. I argue here that even though Structural Adjustment Programme (SAP) was labelled a success by the WB and IMF in Ghana

(Anyemedu, 1993; Leechor, 1994), existing literature suggests that its failures (Frimpong-Ansah, 1991) far outstrip its successes.

Section 2.3 discusses water commodification and shows that, even though critics of private sector involvement in water support CM - which has been accepted by the major financiers like the WB and IMF in their current HIPC policies, rural people still have to pay for water under cost recovery principles but the labour that is used in managing the commodity has not been commodified in Ghana. Women are still called upon to provide voluntary labour in managing water under CM in rural areas. I argue that environmental resources like water have become an appendage to market processes under cost recovery, where their values are expressed primarily in terms of money rather than use and intrinsic values. In line with Botchway (2001), section 2.4 argues that CM is mainly meant to relieve government from its duties of providing services to rural and poor communities. It is argued here that, those who argue for CM of water have to reconsider their argument based on current developments in the water sector where cost sharing is now the norm. In place of market principles in water distribution, elites set tariffs in the name of the community and cost recovery practices are carried out under both private and CM of water. The criticism of CM in this Chapter does not mean the private sector's management of water is the best option rather, one can observe shortfalls in communities managing their water against state or private sector managed water (Bakker, 2008). The Chapter is concluded with a summary in section 2.5.

## **2.2 Neoliberalism**

This section discusses neoliberal policies, especially Structural Adjustment Programmes (SAP) and the Highly Indebted Poor Countries (HIPC) initiative. These programmes and initiatives are discussed here because it was their implementation that led to the wholesale

initiation of the Private-Public-Partnership debate (PPP) and CM in developing countries like Ghana. In order to examine CM, one needs to know how the old principles (SAP) fared and how the new HIPC initiative will theoretically help propel the country to achieve the MDGs.

### 2.2.1 Meaning and Principles of Neoliberalism

Neoliberal theories can be described as a combination of policies aimed at curbing the power of states, and the deregulation of agriculture and extractive industries in order to liberate the financial sector of an economy (Harvey, 2005). The period after the 1980s witnessed the widespread practical implementation of neoliberal principles with trade liberalization, the curtailment of the public sector in the economy and the imposition of free market principles by major lending and financial institutions (Heron, 2009). According to Harvey (2005: 2) *“deregulation, privatization, and withdrawal of the state from many areas of social provision have all been common”*. Some areas of social provision that the government of Ghana withdrew or curtail subsidies to include communication, energy and mining, health care, agriculture, education to some extent, housing, to mention and few. Many countries throughout the world, including countries with well developed welfare states like New Zealand and Sweden, are all in some ways practising neoliberalism. However, some states in developing countries were forced to accept the policy and “adjusted” their economies as dictated by the WB and IMF (Harvey, 2005). Harvey continues to argue that neoliberalism is a policy that economic elites try to use to increase their wealth and income, to achieve political and economic freedom by rolling back redistributive reforms. Neoliberalism:

“is a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. The state has a role to play and this is to create and preserve institutional framework..... In situations where markets are not present, as can be found in land, water, education and health care, they must be created by state action if necessary” (Harvey, 2005: 2).

In the 1980s and earlier part of the 1990s neoliberal macro and micro practices around water management were imposed on developing countries by the WB and IMF in response to a perceived crisis in the provision and distribution of services like water with the following features:

“privatization of services formerly provided by and through the state; liberalization of state regulations specifically governing trade and investment across international borders, though in uneven and contradictory ways that reflect not only the ideology of free trade, but also the political interests negotiating often highly selective and confusing blends of liberalization and protectionism; emphasis on state austerity and fiscal retrenchment with an associated de-funding or outright cancellation of a wide array of social services” (Heynen et al., 2007: 5).

In terms of water, the state is to be relegated from water provision and the private sector and communities themselves are to be encouraged to provide water. Neoliberal reforms have been seen as part of the “*emergence of a new global economic order designed to deal with the crisis in the post-war capitalism that occurred at the beginning of the 1970s*” (Mohan et al, 2000: 21). It has been projected to create a borderless world where distance will not matter (Friedman, 2005). However, the real place it can be felt and where it is working is the local economy of the nation states of developing countries. Indeed, the nature and policy of governments throughout the world has changed most drastically in developing countries as can be seen under SAP and HIPC policies. Today governments are being seen by their citizens as actors in the midst of other “*subnational and supranational governments*” (Herod and Aguiar, 2006: 115). Other authors have announced the “death” of the nation-state, especially those in Africa (Jessop, 1999) as a result of neoliberalism but I think a failed state is the right word to be used in place of a death of the African state. This is because there is no need to deny the fact that the influence and reach of governments in developing countries has been reduced by their dependence on international financial institutions like the WB and IMF.

Easterly (2005) and Kaseke (1998) argue that neoliberal ideas do not help countries develop, rather they are the main cause of poverty and suffering in countries today. The effect of the decline of the powers of the state, according to Kaseke (1998) is the “fragmentation” of governments’ responsibilities leading to the distribution of social responsibilities over different actors at different administrative and geographical levels, often labelled “partnerships”. Citizens become confused as to who is responsible for managing social problems in their localities (Uitermank and Duyvendak, 2008). A major programme that was imposed on countries in Africa by the Bretton Woods institutions is SAP. SAP is discussed here because it was through its imposition in developing countries like Ghana that the role of the private sector and communities became more important in water management. Also, SAP is reviewed here because it was under SAP and HIPC that complimentary or alternatives to the private sector participation in water management like CM became prominent. This does not mean there was no CM during colonial and post independence era. The rate at which they have been applied is the differentiating factor. Above all, there is the realization by water professionals that, the importance given CM coincided with the introduction of SAP, which incidentally also coincided with the International Drinking Water and Sanitation Decade (IDWSD) in the 1980s (Schouten and Moriarty, 2003; UNDP, 1990).

### 2.2.2 Structural Adjustment Programmes (SAP)

This section discusses the meaning, application and impacts of SAP in countries throughout the world, but with special emphasis on developing countries like Ghana. This review is done to show how WB and IMF austerity policies affected the life of people in countries where it was practiced and how the lessons learned are being incorporated into the current policy of HIPC.

In Ghana, the Department of Social Welfare and Community Development, an operative arm of the then Ministry of Labour and Social Welfare (now the Ministry of Employment and Social Welfare) was responsible for welfare programmes (Boateng, 1986). Even though the government's social welfare programmes were few, some areas that people benefit from include housing, school feeding programmes, electricity, education, water and health. The provision of amenities was the responsibility of the various arms of government and the provision of water in both rural and urban areas was squarely placed in the hands of the Ghana Water and Sewerage Corporation (GWSC).

Laird (2008: 378) writing on the withdrawal of social welfare and social amenities provision points out that:

“Lending conditions included not only the introduction of charges for welfare provision, but also the circumvention of the state sector in favour of service delivery by a myriad of voluntary and private sector organizations in the context of wholesale de-regulation and weak enforcement of care standards.

Self help projects were pursued vigorously in most rural and urban areas before SAP. These self-help projects manifest in infrastructure projects like water facilities provision, health centre and clinics, roads, electricity, post office, schools, markets, community centres to mention a few. These facilities provision were the felt needs of the people and were planned and executed by the communities themselves with technical assistance given by the officers of the Department of Social Welfare and Community Development. Self-help community development projects in Ghana are local behaviors that are expressed in the Akan word “Nnoboa”. These self-help projects identified Ghanaian rural folks as free societies where people are ready to volunteer to provide services in the form of labour and cash for the benefit of their towns and villages. Whitfield (2006: 442) opines that the:

“clash of models must be understood within the history of structural adjustment and Ghana’s experience with privatisation, as well as the contemporary global movements for and against water privatisation which have produced these rival models”.

The genesis of SAP in Ghana can be traced to the high inflation in the country during and after the 1979 coup by Flight Lieutenant J. J. Rawlings’ led Provisional National Defense Council (PNDC). According to Weissman (1990), Ghana’s exports declined to about 52% and Ghana’s Gross Domestic Product (GDP) was at its lowest in the early 1980s. Also of importance to the decline in Ghana’s economy was the major drought between 1983 to 1985. This drought, together with other factors like bush fire, the repatriation of millions of Ghanaians from Nigeria led international donors to reform their development assistance to Ghana (Weissman, 1990). In Ghana, the international economic assistance during the 1980s was labeled Economic Recovery Programme (ERP) or Structural Adjustment Programme (SAP). The programme was aimed at stabilizing the economy through adjustment of domestic demand to the reduced level of external resources, and ensures a sustainable long term growth by making changes in the price of goods and services in order to make the Ghanaian economy more efficient than it used to be (Weissman, 1990). SAP in Ghana was to reduce internal and external deficits, achieve a more efficient allocation of resources to productive sectors through import quotas, and eliminate subsidies and price controls. The private sector was to be encouraged to acquire and run services previously managed by state enterprises and changes to taxation among others were made (Crisp and Kelly, 1999). Mensah-Kutin et al (2000: 4) points out that:

“SAPs were carried out in the context of the promotion of increased production of commodities (exports), the reduction in government expenditure known as cost recovery, non-protection of critical social services and the liberalization of the vital inputs in agriculture”.

The World Bank notes that:

“while the programs are almost always jointly designed by international donors and recipient governments, it is recognized that the local government role has been “weakest” in sub-saharan Africa’ (World Bank, 1988: 94).

As a consequence of the factors mentioned that led to the decline of the Ghanaian economy since the late 1970s, the PNDC led government increasingly made use of loans from the IMF and WB as a solution to the balance of payments crises that the country was experiencing. Ghana was “*increasingly led to implement the set of policy measures advocated by these institutions*” (Kraev, 2004: 3).

SAP policies were administered by the WB, IMF, other multinational financial institutions and governments in response to the global financial crisis of the 1980s (Kim and Weaver, 2003; Maderick, 1998). SAPs have been defined as:

“A non-project lending to support programmes of policy and institutional change necessary to modify the structure of the economy so that it can maintain both its growth rate and the viability of its balance of payments in the medium term” (Stern, 1993 cited in Milward, 2000b: 41).

Milward (2000a: 24) also points out that SAP is a process through which the WB and IMF base their lending programmes to underdeveloped economies on pre-determined conditions and these countries have to “*draft and implement economic policies that are acceptable*” to the WB and IMF. In a sense, SAP aimed at reshaping the economies of borrowers from the bank towards a market orientation. SAPs aim primarily at “stabilizing” and “adjusting” the economies of these countries (Zack-Williams, 2000) in the wake of the debt they have incurred. Table 2.1 shows Ghana’s domestic and external debt from 2003-2010.

**Table 2.1 Ghana's Debt Stock-2003-2010**

<b>Year</b>	<b>Domestic (Millions US \$)</b>	<b>External (Millions US\$)</b>	<b>Total Debts Stock (Millions US\$)</b>
2003	1,540	7,200	8,740
2004	1,868	7,398	9,266
2005	1,997	7,396	9,393
2006	3,133	6,999	10,132
2007	3,969	3,546	7,515
2008	3,662	3,990	7,652
2009	4,195	5,007	9,202
2010	5,117	5,320	10,437

Source: Compiled from the Ministry of Finance and Bank of Ghana

Table 2.1 above shows that Ghana's public external debt declined from 2007 and 2008 due to debt relief however, its domestic debt increased to \$3,133 million in 2006 from \$1,997 million in 2005 as a result of governments policy to finance the rising fiscal deficit internally through the issue of bonds of longer maturity (IMF, 2008). According to the Bank of Ghana (2010) the provisional total public debt stock of Ghana stood at \$10, 396 million at the end of June 2010 from \$9,202 million at the end of December, 2009. Ghana's increasing debts can be attributed to increase in borrowing after the discovery of oil in commercial quantities. However, Ghana's debt stock is low compared with other countries like Kenya, Sudan, Cote D'Ivoire and Nigeria.

It is claimed by Shah (2007) that the debt crisis is country specific but can be explained with reference to both external and internal factors. In Africa, the WB (1981) in the Berg Report attributed economic stagnation of countries to poor government policies rather than external factors. According to (Krueger, 1987), some of the causes are the mismanagement of funds by African leaders and high population growth rates. Some of the external factors are legacies of colonialism, over-lending by official creditors, negative interest and exchange rates which are based on the US dollar which depreciated during the 1980-90s, ill advice by the International Financial Institutions (IFI) and official creditors and protectionism in the

markets of the industrialized countries to mention only a few (FONDAD, 1992; Krueger, 1987; Mistry, 1988; Shah, 2007). Milward put it simply that, the International Financial Institutions (IFIs):

“recognized that deficiencies in national policy making processes in underdeveloped economies and structural weaknesses in their economies were significant, contributing factors to their worsening economic performance” (2000a: 24).

In addition to SAP, the ‘Washington consensus’ in which market principles have been presented as the only path that countries can take to develop and interact economically has permeated development thinking during the last two decades (Beneria, 2003). A “consensus” was reached “*that the market led strategies of neoliberalism represent the most appropriate form of economic management*” (Mohan et al, 2000: 20). This consensus led to the imposition of market driven ideologies of development on poor countries of the south, Ghana without exception. Beneria (2003) states that the consensus attacked Keynesian theory and led to the withdrawal of government intervention in the economy; the market was also deregulated with cuts in government spending on essential services patronized by the poor; government properties were sold to individuals and groups, these countries were opened to foreign economies under the rubric of trade liberalization whilst the markets of advanced and rich countries remained closed to developing countries. According to the WB, SAPs targeted wise and judicious financial management of borrowing countries to curtail the ill effects of subsidies and financial support on the economy of countries (Greenberg, 1997). By doing this, the WB claimed countries will become flexible and adaptable to external shocks (Streeten, 1987).

The neoliberal policies pursued under SAP have been criticized on the grounds that they assume unrealistically that full employment of resources used in the production of goods and services like land, labour and capital will be possible in African countries (Milward, 2000a).

Milward also argues that the terms of trade between countries are not equal as such SAP will not be successful generally in all countries. These flawed assumptions, coupled with the failure of the market to deliver the “goods” as envisaged by the IFIs arguably underlies the increasing gap that is being experienced between the national income of the developed and the developing countries today (Barro, 1991).

The effectiveness of SAP as a macro economic strategy in developing countries has generated intense debate within the development community (Addison, 1996; Anyemedu, 1993; Harvey, 1996; Lensink, 1996; Mosely and Weeks, 1993; Mosley et al, 1996; Riddell, 1992; Loxley, 1990). It should however be made clear here that there have been a number of problems attributing success or failure to SAP. Some of these problems include inadequate data and difficulty of disaggregating the social consequences of SAP from other crises like modes of accumulation based on colonialism (Crisp and Kelly, 1999). However, some researchers use before and after methods to show the impacts of SAP (Maasland, 1990) while others use adjusting countries and non-adjusting countries (Kakwani, 1995) to measure the impact of SAP.

The effects of these policies on the economies of the practising states, its people, both men and women is not the subject of this thesis however, some obvious effects on rural and vulnerable people like women are worth mentioning to set the scene for a further debate on water services. In Ghana, one obvious impact can be seen in the cuts in social spending on essential services like water facilities (Amenga-Etego, 2003) where the state institution was rolled back in water provision and private sector is to manage the service. Chapter 4 of this thesis discusses in detail the impact of private involvement in water management in Ghana’s urban areas. The impact of SAP on poverty is a major debate.

Loxley (1990) regarded Ghana as a success story for the WB and IMF at the initial stages of structural adjustment. Specifically, he noted that the stabilization of Ghana's exchange rate was considered a success due to external support for the balance of payments in addition to prudent budgetary controls. Demand and supply determined the exchange rate in 1989 rather than the fixed rate by the government (Sowah, 1996). Sowah argue that, the Ghanaian economy grew at a growth rate of about 5% between 1984 and 1989 with a budget surplus being experienced for the first time in the history of the country. This surplus, critics argue, was due to the increased foreign aid in the country at the time (Anyemedu, 1993). Aid therefore supports claims about the positive impacts of SAP. In the words of Whitfield (2006: 441)

“regardless of the degree of disagreement over the content of SAP and regardless of arguments about whether such economic reforms are necessary to improve the economy and general well-being of Ghanaians, many Ghanaians view the process of structural adjustment which involved the externalisation of policymaking as illegitimate”.

The literature on the impacts of SAP shows that women in Ghana became poorer leading to the saying that SAP led to feminization of poverty in Ghana couple with poorer access to women of essential services like education and health (Mensah-Kutin et al, 2000). In terms of agriculture, these authors pointed out that the promotion of export agriculture discriminated against women who mainly produce food crops. SAP led to massive labour retrenchment within industrial and government sectors. Even though gender differentiation figures were not available to show the proportion of male to female workers retrenched in Ghana, women were said to be worse hit because the retrenchment exercise was carried out within lower rank levels of industrial and government institutions where women predominates (Mensah-Kutin et al, 2000).

A measure to achieve a reduction of government deficit in Ghana was to reduce or cancel government programs such as input procurement and input subsidies for agriculture which is the major employer of rural people in the country. This policy can be said to create a positive impact in terms of revenue generation on the economy by reducing spending. An enabling environment was to be created for the private sector, including NGOs to fill that niche instead of the government. The bad aspect was that:

“the policy has achieved the reverse of its intended purpose. First of all, the private sector has apparently not sprung up to fill the gap left by the government because most of the poor in Ghana are food farmers, and most of the food farmers are poor, reduction in government support of agriculture has directly hit the poorest segment of society” (Kraev, 2004: 25).

A damaged was done to the agricultural sector by curtailing government support to it. Laird (2008: 379) also pointed out that:

“within the social sector criticism has centred on the low priority given to poverty alleviation and the moulding of social policy by developed countries through financial leverage rather than by nationally determined imperatives on the African continent.

Kraev (2004: 29) reports that:

“there was no basis for a sustainable growth in the agricultural sector, and local food supply became increasingly scarce. Shortage of locally produced food crops directly contributed to a larger import demand and thus to balance of payments worsening. Capacity utilization of some industries in Ghana was said to be around 50% in 1990-1993 when SAP was at its peak”.

The concern for the social impact of SAP on disadvantaged groups like women and the poor led to the formulation of Programme of Action to Mitigate the Social Cost of Adjustment (PAMSCAD). This programme was also criticized because it failed to alleviate poverty because most of the intended beneficiaries could not be reached (Clark and Manuh, 1991). In other words, the facilities meant for the disadvantaged did not reach them. They were hijacked by the well to do in society. The policy that replaced the negative impacts of SAP is the Highly Indebted Poor Countries (HIPC) initiative, which it is argued, is SAP in disguise (Whitfield, 2006).

### 2.2.3 Highly Indebted Poor Countries (HIPC) Initiative

In the later part of the 1990s and entering the year 2000, the criticism leveled against the WB and the IMF on the high social cost of their SAP policies on poverty and on the economies of countries led to a change in their approach to lending (Bradshaw, 2008). However, others argue that the HIPC initiative, with its attendant conditionalities does not constitute a change from past initiatives like SAP of the WB and IMF (Goldman, 2007; Whitfeild, 2006). A form of the conditionality being argued here is what Goldman (2007: 790) pointed out: *“these days, a HIPC cannot borrow capital from the WB or IMF without a domestic water privatization policy as a pre-condition”*.

Conditionality has been defined as *“the application of specific, pre-determined requirements that directly or indirectly enter into a donor’s decision to approve or continue to finance a loan or grant”* (Bull et al, 2006: vi). Some of the conditions that countries must meet include a range of reforms on public expenditure management, governance, health sector reforms, education targets, privatization or removal of subsidies on water, electricity, industries, and trade and financial sector liberalization through removal of tariffs or deregulation. Cabello et al (2008) points out that, four types of conditionalities are imposed on countries that borrow from the international financial institutions. The first is fiduciary conditionality. This relates to the financial management and public accountability of the funds that have been allocated by the donor. Its purpose is to ensure that the money given is used efficiently and for the intended purpose and not used on any other thing.

The second type of conditionality is process conditionality. The focus here is on the management of the funds, which includes planning and implementing policies. This type of conditionality is to ensure that some institutions necessary for the disbursement of the funds

are put in place for transparency and the representativeness of the governance of the funds. The third type of conditionality is policy conditionality which includes conditions necessary for the implementation of policies that will facilitate the achievement of the development goals spelt out for the acquisition of the loan. In this type of conditionality, the funding is not directed at the areas of policy but on the establishment of necessary conditions for success. The final type of conditionality is outcome conditionality. This focuses on the measurable outcomes (such as GDP growth or poverty reduction) rather than on the type of policies implemented to reach them. An example of conditionality in Ghana can be seen under IMF and WB HIPC initiative. A loan of \$400 million was extended to Ghana to rebuild its water system in urban areas but under a condition that the Ghanaian government must stop the practice of subsidizing the cost of water enjoyed by wealthy and industrial customers in urban areas (Rahaman et al, 2007). Also, Ghana was forced to engage private sector in urban water management before a decision point was reached for the country to enjoy the HIPC status (Rahaman et al, 2007).

Eurodad (2006) noted that about 52 conditionalities were imposed on Ghana under HIPC. It is not certain whether HIPC initiatives are detrimental or beneficial to water provision but Harvey's (2008: 127) comment that there is:

“limited attention to water and rural development in relation to other sectors and urban development indicates that access to water in rural areas is given low priority in reducing poverty”.

Under HIPC initiative, the budgetary resources of countries will no longer be used for debt servicing but rather will be used for the provision of poverty reduction infrastructure (Burnside and Fanizza, 2004). The leaders of the eight highly industrialized countries (G8) proposed to cancel WB and IMF and other debts of countries that have reached, or which were expected to reach the HIPC decision point - the point where a country is deemed

eligible to enter the debt relief process under the HIPC initiative. Countries have to submit a Poverty Reduction Strategy Paper (PRSP) which has to be assessed by creditors (the same WB and IMF) before they can qualify to reach the decision point. The Multilateral Debt Relief Initiative (MDRI) is expected to provide over £20 billion of debt relief for over 14 African countries (Dessy and Vencatachellum, 2007: 202). Ghana reached the decision point in February 2002 and completion point in July, 2004 (IMF and IDA, 2004). The aim of HIPC is for countries to put in place structures for the achievement of the MDGs (Bradshaw and Linneker, 2003).

Critics point out that the debt relief package did not specify any time period within which this is to be achieved (Jessee, 2007). What is more, analysts and commentators are pessimistic as to whether these initiatives will help the African continent to curb poverty through the provision of clean water, schools, and health centers as outlined in the HIPC package (Harvey, 2008). HIPC countries like Cameroon, Uganda, Mali, Tanzania, the Gambia and Ghana are using their share of the HIPC fund to provide education, health, transportation, water and sanitation facilities in deprived areas. Harvey (2008: 118) however, argued that the water and sanitation sector does not enjoy much recognition in the PRSP and budgetary processes in comparison to sectors like education and health. Most PRSPs pay little attention to the provision of water facilities with the exception of Ghana. But in Ghana, more emphasis is laid on CM.

Chauvin and Kraay (2005; 2) computed the extent to which debt relief from creditors has been used successfully to provide resources in the provision of infrastructural services in some 62 countries during 1989-2003 and argue that estimates:

“can be very different from reported data on nominal amounts of debt forgiven which do not reflect cross country differences in the degree of concessionality of the debt

eliminated, and also do not capture reductions in the present value of debt due to concessional rescheduling”.

These authors go on to point out that there is strong evidence that increased spending on health and education has occurred with respect to the share of total spending from 1999 to 2003 in these 62 countries. Water, the most basic need of life which also affects people’s health is thus left out. I think water should be given priority because water is life, without potable water, people would not be able to live to attend the schools. Also, potable water would curb most of the diseases that take people to the hospitals. This thesis feels water is also not accorded the due recognition it deserves in Ghana because poor rural communities who want potable water facilities in their communities are being asked to contribute a share of the cost of the facility provision.

The reason for debt relief as argued by donors is to create fiscal space for governments’ to provide social resources to important sectors which have been deprived as a result of SAP over the years in order to reduce poverty. Dessy and Vencatachellum (2007: 214) concluded that:

“debt relief does not have a positive impact on the share of government’s revenue allocated to public education. However, countries which benefited from debt relief and improved their institutions allocated more resources to social services”.

It can therefore be said that water provision will benefit from debt relief indirectly. However, the debate on debt relief has of late been extended into good governance with critics pointing out that debt relief penalizes countries that managed their economies well in comparison to corrupt regimes (Bird and Milne, 2003; Dessy and Vencatachellum, 2007; Freytag and Pehnelt, 2009). Critics of debt relief argued that debt relief should be tied to institutional quality and good governance in order to ensure prudent use of HIPC funds for growth and development. As of now, good governance has not emerged as a yardstick for debt relief even though these principles have reached international dimensions like decentralization,

participation in decision making, and transparency (Freytag and Pehnelt, 2009). The donor community implicitly takes into account governance and institutional qualities in the debtor countries, which is a response of WB and IMF to integrate good governance principles into HIPC initiatives but more needs to be done to ensure the funds are used judiciously.

Proponents of good governance argue that decentralization and people's participation in decision making can halt unnecessary spending by central government (Crawford, 2004; 2008). It is true that high debt burdens are not conducive to economic growth for poverty alleviation however due to the crucial role played by good governance and institutional prudence in developing countries, it is not certain if debt relief alone in its current form will lead to water facilities being provided to lessen people's suffering (Freytag and Pehnelt, 2009). For instance, Baumann (2005) estimated that about 35-50% of the rural water facilities in African countries are not functioning and the major reason assigned to this high failure rate is mainly due to low demand for the facilities. Demand here is a function of what people are willing and able to spend on water at a given price (Besanko and Braeutigam, 2005). The willingness and ability of people to pay for water facilities also depends on the peoples' income and expenditure on water. Effective demand has to be backed by the ability to pay for the facility. The demand for a facility will lead to it being sustained because people pay for its construction. Because of the unavailability of demand for water facilities by people in rural and small towns in Ghana before the 1990s, the facilities were provided by government agencies without the people's involvement or demand for its provision. The people therefore expect the government to repair the water facilities when they are broken (Karikari, 1996). Due to this realization that demand for water facilities leads to their sustainability, the government decided to convert the provision of water facilities under supply-driven to demand-oriented provision as discussed in Chapter 1 of this thesis.

What makes the future bleak as far as the attaining of the MDGs in the HIPC initiative is concerned is the finding that only 30% of the 20 HIPC initiatives of African countries focus on water and some do not even have:

“a single paragraph specifically on water...and the 30% of the PRSPs which had sufficient focus on water, all emphasized the importance of CM of rural water supplies....the water and sanitation sector has been poorly integrated into PRSP and budgetary processes, contrasting sharply with sectors such as education and health that are lent greater priority in PRSP documents” (Harvey, 2008: 118-120).

Fortunately, adequate potable water supply provision has been made explicit in Ghana’s PRSP. A whole section was devoted to poverty and access to water and sanitation. It pointed out that *“using access to water as an indicator of poverty showed that, coverage of potable drinking water varies substantially across the country”* (GoG, 2003: 19). In big cities just as in the rural areas, having access to water is a problem thus priority would be given to the water sector. It should be noted that this is not the only document in Ghana that is promising provision of adequate water infrastructure which turns out to rely heavily on the community’s own initiative. The Ghana Water Policy (WRC and MWRWH, 2007) is a policy document which also demands CM in water provision and management.

The HIPC initiative in Ghana provides indicators on what government’s plans are for delivering improved rural water facilities however, the initiatives failed to address the barrier to access of this essential facility - the demand-oriented water policy in rural areas. For instance, the 5% capital cost contribution required of rural communities towards the provision of water service is unfair and discriminatory against the rural communities. Also, the insistence in the HIPC documents for full cost recovery in the water sector of Ghana is inconsistent with government’s declared commitment to half the number of people without sustainable access to potable water as spelt out in the Ghana Water Policy of 2007. Indeed, the imposition of IMF and WB policies on water was not without opposition in Ghana.

The National Coalition Against the Privatization of Water was formed by Amenga-Etego to campaign for safe and affordable drinking water to all Ghanaians by 2010. The strategy adopted by the National Coalition Against the Privatization of Water involved community “Right to Water” protest rallies in urban centers like Accra and Kumasi - Ghana’s second largest city-as well as public forums. These developments compelled the IMF and WB officials to demand a debate on water privatization in Ghana (Yeboah, 2006). These protests and fact-finding missions in Ghana favour alternative or complimentary water management models like public-private partnerships with local businesses and communities.

The IMF and the WB insisted that the Government of Ghana is too poor and highly indebted to subsidize water services to its ever increasing population (Rahaman et al, 2007). These donors pointed out that the private sector should be encouraged to provide more efficient and cost-effective water services to Ghanaians. Despite this insistence by the IMF and the WB, Amenga-Etego’s protests and debates yield dividend. In 2003 the Ghanaian government and its partners bowed to pressure from pressure groups like the National Coalition Against the Privatization of Water, Integrated Social Development Centre and Christian Council of Ghana and the privatization agenda in Ghana was suspended.

Amenga-Etego noted that:

“current reforms aimed at privatizing water and electricity have been designed to meet reform schedules agreed with the World Bank and the IMF. For instance under the terms of the 1999 enhanced structural adjustment facility (ESAF), the government was required to proceed with privatization of a number of state corporations, including the Ghana Water Company” (Emenga-Etego, 2003: 2).

The practice of bringing private sector to participate in the provision of water in Ghana has generated concerns about the good judgment of privatizing a vital resource like water. Some of the concerns range from lack of transparency in the privatization process and the impact

which privatization will have on the poor and marginalized segments of Ghanaian society (Amenga-Etego, 2003). Opponents of water privatization in Ghana also argued that water is a basic requirement of life as such it should not be left in the hands of private entrepreneurs (NCAP, 2005). This thesis also argues that the policy in Ghana which requires communities to contribute towards the installation of capital cost and bear all the recurrent costs, including repair and maintenance is beyond the means of rural communities in Ghana. A common feature under both SAP and HIPC is turning water, which hitherto was accessed free or at subsidized rates, into a marketable commodity where cost recovery principles are applied is discussed in section 2.2 below.

## **2.3 Water Commodification**

### **2.3.1 Economic Instruments Used in Water Management**

There are various administrative, regulatory, technical and economic policy instruments available for the management of water supply systems (Chettri and Venkatesan, 1983). However, economic policy instruments are commonly used (Jensen and Schulz, 2006). A combination of pricing policy and proper tariff structuring yields best results (Chettri and Venkatesan, 1983). Hubbell (1978) points out that pricing policy of water supply should be based on four objectives;

- raising a given level of net revenue sufficient to provide an adequate service, proper maintenance of the supply system and future expansion,
- equitable distribution of cost,
- promoting efficient use and conservation, and
- water rate does not reflect its real production value.

Different categories of strategies are employed in water tariff imposition (Boland and Whittington, 2000; OECD, 2003). Some are fixed, flat or uniform water rates; decreasing block tariff; increasing block tariff; average cost pricing, marginal cost pricing, two-part tariff and seasonal pricing. In developing countries, four of these water pricing strategies are generally used (Boland and Whittington, 2000). They are:

- Uniform Pricing: Here, the price per unit is not changed but it remains constant no matter the level of consumption.
- Seasonal Pricing: This is practiced mostly in developing countries where income is seasonal. Here each household is charged water price during the harvest season because people sell their produce and earn income at this time.
- Increasing Block Tariff (IBT): This tariff strategy provides two or more block of prices for water used by a customer. Each price applies to a customer's use of water within a defined volume. The price paid on water consumed therefore rise with each successive volume consumed. The tariff structure therefore has many blocks with each block having different price. Increasing block tariff however penalize high water consumers and provides lifeline water for the poor.
- Block Rate Scheduling: Under this pricing strategy, the price per unit decreases as the consumption increases. This policy is used to induce people to use water thus serves as a reward strategy for poor households. This strategy is yet to be practiced anywhere in the world.

Increasing Block Tariff and uniform pricing structures are mostly used to effect payment for water services in developing countries (Boland and Whittington, 2000; Jensen and Schulz, 2006; Moilanen and Schulz, 2002) but the question has to do with affordability. With regards to affordability, Fankhauser and Tepic (2007) point out that a water price is considered "affordable" when the cost of potable water to a household does not exceed 5% of the household's total expenditure. Any expenditure above 5% is seen as too expensive to be borne by poor households. OECD (2003) proposed two types of affordability indicators. They are macro-affordability and micro-affordability. Macro-affordability indicators are developed

by relating national average household water charges to either average household income (disposable or gross) or average household aggregate expenditure. Micro-affordability indicators disaggregate macro affordability by income groups, family types or regions. A problem with macro-affordability indicators is that water services may not be distributed equally across income groups or neighbourhoods. A lower income household will end up paying a higher proportion of its income for water services than a higher income household does (OECD, 2003). With the use of these economic instruments, water has been commodified in some countries with Ghana no exception. Water commodification is one of the contested policy debates of the past 20 years (Cocq and McDonald, 2010).

### 2.3.2 Meanings and Criticisms of Water Commodification

The word “commodification” is dynamic in its meaning. Castree (2003: 278) sees it as “*a process where qualitatively distinct things are rendered equivalent and saleable through the medium of money*”. A commodity can be said to be an object that can be bought and sold with money therefore, the commodification of a thing “*is the process which a thing that is previously circulated outside monetary exchange is brought into the nexus of a market driven by the accumulation of capital*” (Page, 2005: 295). In clarifying commodification, Castree (2003) argues that the commodity status of a thing, object idea, creature or person is not intrinsic to it but assigned to it. To Bakker (2007: 450)

“commodification entails the creation of an economic good through the application of mechanisms to appropriate and standardize a class of goods or services, enabling them to be sold at a price determined through market exchange”.

In Ghana, water was treated as a commodity before the structural adjustment policies. However, most treated water was sold in urban areas where incomes of people are stable compared to rural areas. In rural areas, huge subsidies were placed on water whilst some

people do not pay for it at all because they see water as a gift from God (Eguavoen, 2007). SAP however brought a stop to the treatment of water as a free good.

The genesis of treating water as a commodity can be traced to the Dublin Conference of 1992 which led to the enactment of the Dublin Principles (Bakker, 2007). The fourth principle states that water has an economic value in all its competing uses and arguably should be recognized as such (Solanes and Gonzalez-Villarreal, 1999). Managing water as an economic good according to this analysis would therefore result in its efficient and equitable use, and encourage conservation and protection of water resources (WMO, 1992). This claim by the Dublin Conference that water is an economic good and has to be treated as such led the WB and IMF to champion the shift from treating water as a public service to a commodity which users have to pay for in order to use it (Bakker, 2003; Budds and McGranahan, 2003). The increasing role played by the Bretton Woods institutions in promoting water management policies and reforms to increase people's access to water cannot be enumerated here however, the key point is that the role of the WB is consistent with its interpretation of the treatment of water as an economic good (Budds and McGranahan, 2003; Budds, 2004). In this light, the WB's policy has reduced water to an economic good without due consideration being given to the natural and social qualities of water (Budds, 2004) which are foregrounded in this study.

A number of critical geographers also argue that the shift toward market governance is by no means unique to the water sector "*but is rather part of a broader extension of global capital into social and environmental spaces in the interest of capitalist accumulation*" (Roberts, 2008: 536). The introduction of market principles into water management led analysts to point out that commodification of water will soon lead to water being seen "*as precious and as war-provoking as oil*" (Goldman, 2007: 790).

The implication here is that water management is being transformed into capital good. To the WB and IMF, commodifying water will ensure that water flows into its most productive uses for efficiency, its highest value use and with minimal waste (Bakker, 2007; Budds and McGranahan, 2003). Cost based pricing of water is the most dominant means of commodifying water however, in reality, it ignores the benefits the poor derive from water use (Budds and McGranahan, 2003). These authors points out that water provision and use in rural and poor communities in its current form raises a number of economic and governance issues that can not be resolved by leaving water management with private operators or public operators. When the demand for water is perfectly inelastic, water use does not change even when the price is increased, however where demand for water is not perfectly inelastic, an increase in price of water decreases water use (Israel, 2007). Water demand is usually found to be inelastic with respect to income (Rietveld, 2000; Herbert and Kempson, 1995). Indeed, this can be said to be good for the environment however, in rural areas where potable water use is being encouraged by the international community led by the UN as can be seen in the MDGs, the imposition of water tariffs in the form of cost recovery need to be looked into because the health implications for people also need to be considered. The main tool used to demand payment for water in urban areas and more recently in small towns of Ghana is water metering.

Jaglin (2002) argued that water meters are a form of commodifying water and under this method, customers pay for the amount of water they consume calculated in cubic metres of water. To Loftus (2006), metering is a way of rationally disciplining households into economically defined consumption norms as envisaged under neoliberalism, whether it comes from the state, water companies or communities.

Research findings suggests that only the affluent in society, especially in urban areas of developing countries, benefit from subsidies placed on water, instead of the poor who are not connected to the networked water system (Thobany, 1995) therefore metering is good to the poor. Thobany argued that commodifying water can lead to development because the management of water by the state tends to favour the rich who can afford the cost of installation and that, secure water rights can be used as collateral for credit, which is really not a social development agenda. Other proponents of water commodification argued that, by making water a commodity, incentives would be provided for the private sector, through the high cost of water to invest in water infrastructure which in the long run will benefit the poor (Serageldin, 1994). Gazmuri (1994) also calls for water commodification on the grounds that through realistic pricing of water, revenue generated by the state through taxation of multinational companies (MNCs) can be used in poverty reduction programmes.

Critics like Shiva (2002) counter the proponents of water commodification by arguing that even though water is very scarce, it should not be commodified. Barlow and Clarke (2002) argues that by focusing on water as a commodity, water is no longer seen as a public good and people who hitherto were seen as beneficiaries of water supply have been transformed into water consumers. The argument here is that even though water has been commodified through cost recovery principles, women and rural people are expected to contribute free labour to the management of their resources for the benefit of their community (Bakker, 2003). Other critics of water commodification in Ghana (NCAP, 2005) however call for subsidies either from the state or by means of cross-subsidies between different water consumers to resolve these problems but Brocklehurst (2002) criticized cross-subsidization on the grounds that its application does not reveal the true cost of water provision. Swyngedouw (2004) points out that by commodifying water and placing it in the hands of MNCs, the world is witnessing a process whereby local waters are being transformed into the

global economy which will lead to higher costs for the poor and greater profits for the producers. The higher cost will come from the attempt to recover the overhead costs that have been invested in the water infrastructure. Also, the MNCs will try to increase cost in order to pay dividends to their shareholders.

Despite the different views expressed by the proponents and critics of water commodification, it has come to light that commodifying water comes with a number of problems like water supply having characteristics of being a public good therefore should be managed by the community; water supply cannot be allocated through the market because people can not be excluded from its consumption; in some countries it shares common property rights with communities making it an “uncooperative commodity” (Bakker, 2004). Page (2005) argues that water is different from most of the objects that geographers interested in commodification have dealt with because it is expensive to transport leading to its production near its consumers to minimize the distance between the source and its users. Also, water supply is characterised as a service rather than a good because it is not the water that the user pays for rather, the consumer pays for the delivery of the water to the household and that, water has a continuous quality unlike items like furniture which has a distinct quality (Page, 2005: 295). These characteristics of water make its management by both the public and private sectors problematic. Other critics claim that:

“water is a public trust rather than a commodity and that the management of water services must not only remain in public hands, but be enhanced to include community and worker participation in order to democratise decision-making processes and ensure transparency and accountability” (Whitfield, 2006: 429).

Commodification of water is discussed here to show how water is being commodified and how other services like labour used in water production has not been commodified. Because of the criticism levelled against the treatment of water as a commodity by the Bretton Woods institutions in their neoliberal policies, and how its management by MNCs will affect rural

poor and poor communities, many argue for collective management of water by communities as an compliment or alternative to MNCs (Assies, 2003; Bond, 2008; McDonald and Ruiters, 2005; TNI, 2005). The arguments for and against community participation and management of water facilities are discussed in section 2.4 below.

## **2.4 Community Participation and Management of Water Supply**

This section discusses theories and practices of community participation and management of resources together with principles under which CM of water can be achieved. This is to set the scene for assessing how the facilities are being managed in Chapter 6 of the thesis.

### **2.4.1 Theory, Rhetoric and Reality of Community Participation**

“Community” is a word that means different things to different people. Kunfaa (1996) defined it based on social groups that inhabit a common territory and having one or more additional ties. Kunfaa stated that a community is often used synonymously with a village. In this way it is conventional to view a community on a geographical basis such as village or city (Doe and Khan, 2004). Ghana’s rural water provision deals with communities on a geographical basis. However, community can also refer to a group of people with similar characteristics such as the youth, disabled or aged. Willmott (1986), and Crow and Allen (1995) looked at community as a group of people with a common background that share a common interest with an agenda to take collective action to achieve a shared aim.

Since the meanings of community are not uniform, the attempt by the Government of Ghana (GoG) and its development partners to put the management of water into practice through emphasis on community participation can lead to competing interpretation by water managers

and users. This is because the community based approaches assume homogenous communities without due regard to conflicting interests, perceptions and livelihoods (Mehta, 2000). Some people will see the facility as belonging to the community (“us”) and all those who do not hail from such a community will be seen as outsiders (“them”). Identity and belonging may overshadow the benefits to be derived from the facilities because small towns are made up of people from different tribes and locations in a country (GSS, 2002a). To this study, referring to a community as a geographical entity in water provision can lead to problems because in rural areas of Ghana, people mainly refers to a community as where they are born but not on the distribution or provision of resources. This thesis will therefore use people managing the water institutions and water users to analyse diversity (ies) within the study area in managing the water facilities.

Also, it is easier to develop the participation of people when they share certain traits like culture, religious ideas, similar socio-economic status, belong to or come from the same locality or organization. A community, in the sense of water supply management is a group of water users who live in the same area and have access to, and use the same service (Anschütz, 1996). This practical definition of community avoids the tendency of being caught in the definition of community that embrace social and cultural meanings of the concept which can be problematic in the Ghanaian situation.

Some academics and development professionals point out that the most effective way to provide facilities in communities is to involve them directly (Watts et al., 2000). In the same way, many works have been written exploring issues of community involvement and user participation in the planning and the provision of services that benefit them (Barnes and Shardlow, 1996; Cooke and Kothari, 2001; Hart et al, 1997; Hickey and Mohan, 2004; Page, 2003; Warren, 1997).

All these authors point to the idea that participation is a way of involving beneficiaries to contribute more fully in services that meet their needs. Issues of participation and empowerment in planning require:

“local voices to be heard. Local perceptions and priorities must be listened to and addressed, and participation by ‘beneficiaries’ ensured early and meaningfully in decision-making at policy, programme and project levels. Sustainability in policy-making demands that those in power disempower themselves” (Holland and Blackburn, 1998: 1).

Various writers and development organizations have their own definitions of participation, be it groups or communities. Pearse and Stiefel (1979) for instance defined participation as:

“the organized efforts to increase control over resources and regulative institutions in given social situations on the part of groups and movements hitherto excluded from such control” (in Chambers, 2005:103).

In a similar way, the WB also defined participatory development as:

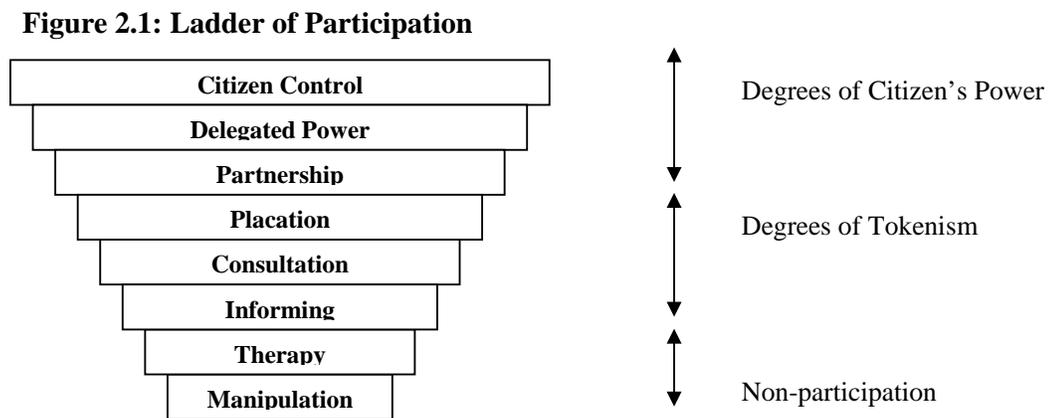
“a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them” (WB, 1994: i).

The concept of participation can be related to the rights of people to exercise their democratic right within the social arena and within the community in order to provide social amenities like water and sanitation facilities (Gaventa, 2004). Participation, arguably has given voice to ordinary citizens by including them in decisions that affect their lives, households and communities throughout the world. Community participation, like other concepts such as development, has been changing but a common thread that runs through all the definitions is that people have ideally been given their democratic right to participate and present their views.

Participation has evolved over the years in meaning and scope and is still evolving (Chambers, 2005). Chambers (2005: 87) analyzed participation in three ways: who participates, institutions involved, and the objectives and functions of participation. To

Chambers, those who participate can be local government staff, inhabitants of an area or a mix of both. The institutions involved range from local government authorities, development committees, self help groups, local interest groups, town or village development committees or women’s groups. Chambers (2005) sees the main functions of participation to include making wishes known, generating development ideas, providing local knowledges, serving as a laboratory for testing proposals for improvement, developing the capacity of communities to handle and exploit their environment and affairs. Other functions according to Chambers are means of demonstrating support for a government in power, and undertaking what governments want to be done. Other reasons for community participation include extracting, developing and investing in local resources like labour and finance. Lastly, it is to promote desirable relationships between people through cooperative work (Rose, 2003).

Arnstein (1969) devised the ladder of participation which has served as a useful model for showing community participation in development projects. The model has eight rungs as shown in Figure 2.1 below.



Source: Arnstein (1969)

At the bottom of the ladder are manipulation and therapy where people never take part in decisions that affect them but the decisions can be said to be imposed on them. The stages of

informing and consulting are just telling the people that this and that facility will be provided in their community. The beneficiaries have no voice here. At times project financiers or governments consult beneficiaries on projects but they do not participate for their voices to be heard. Placation is a higher level of participation where the poor suggest, but powerful power holders decide what should be done. Partnership is the least form of empowering people however, the highest form of participation according to Arnstein is citizen control (Watts et al, 2000: 121).

Choguill (1996) criticized Arnstein's ladder on the grounds that power is not all that people, especially those in developing countries, seek to attain. Even within the developed country (USA) where the ladder was applied, residents of low-income communities want more than just power to make decisions. For instance, Hyman and Shingler (1999) noted that citizen participation is not only related to power within a community but can be closely associated with economic, social and political factors.

Arnstein's ladder can be said to combine the views of ordinary citizens of a community with those of rulers or elders in society to show the divisions between them, however this rarely occur in real life especially in developing countries where elders often have more say in decision making than ordinary citizens. Even within elders in a community, there is division between groups who have their own interests and cleavages. The ladder seems too simple because it assumes that the elders in a community will try to seek the interest of everybody in the community, which does not happen in real life. Also, the ladder's emphasis "*on the transfer of power assumes that power has a common basis for users and providers (or policy makers)*" (Tritter and McCallum, 2006: 166). Divisions like gender, ethnicity and income at times introduce differences. Organizing representatives who will be accountable to ordinary citizens can also be a problem with Arnstein's ladder. Even though Arnstein's model has

been re-interpreted, refined, and revised, most of the new typologies retain a “*hierarchical approach and uncritically embrace citizen control as the pinnacle of involvement*” (Tritter and McCallum, 2006: 157-158).

Due to the criticisms levelled at Arnstein’s ladder of participation, other authors such as Reij (1988); Cernea (1991); Uphoff (1991), Scoones and Thompson (1994) and Pretty (1995) also redesigned a typology of participation based on Arnstein’s model. They point out that a citizen’s participation is a critical component of success in irrigation, livestock, health, water, sanitation and agriculture (Pretty et al, 1995). The authors point out that success is achieved when people’s ideas and knowledge is valued. In addition, power should be given to them to make their own autonomous decisions without an external agency’s input. Pretty et al’s (1995: 61) typology of participation involves passive participation, participation in information giving, participation by consultation, participation for material incentives, functional participation, interactive participation and self-mobilization which are said to be in line with issues that concern people in developing countries (Pretty et al, 1995).

The criticisms leveled against Arnstein’s ladder and the emergence of other concepts like that of Choguill, (1996), Burns et al, (1996), Pretty et al, (1995) and Wilcox (1994) led to Chambers (2005) to come to the conclusion that writers devise the ladder or typology to fit their particular situation thus there is no right or final ladder. Community participation:

“asserted the importance of placing local realities at the heart of development interventions and the need to transform agents of development from being directive ‘experts’ to ‘facilitators’ of the collection of local knowledge and the ‘enablers’ of capabilities.....the power transformations required between ‘uppers’ and ‘lowers’ could be achieved through participatory roles to the subjects of development at each stage of development interventions” (Hickey and Mohan, 2004: 11).

Cooke and Kothari (2001) also re-enforced the criticism that participation benefits people with voice and influence more than poor people. They argued that it also benefits men more

than women, and it is gender blind. Cooke and Kothari (2001: 3) argued that participation has become the new tyranny:

“because the manner in which participation have been critiqued, and the language with which this has been done, has clearly thus failed to affect, qualitatively and quantitatively, the apparent inexorable spread of participation in development”.

These power dynamics of participatory development and its failure to engage with the implications of the underlying processes of development was the main criticism leveled against community participation by its critics (Hickey and Mohan, 2004; Mohan and Skokke, 2000).

Citizen control which is at the top of the ladder:

“can mean manipulation; collective action can mean compliance; and empowerment can mean licence to gender discrimination and petty tyranny. Participation can concentrate power and benefits in the hands of men and of local elites. Ladders of participation are not enough. They need to be qualified by ladders of equity. And this may require, authoritative, non-participatory interventions to ensure that those who are poor and weak gain and do not lose” (Chambers, 2005: 107).

Citizen control of power and empowerment apart, Page (2003: 485) points out that community participation is employed because of the belief that:

“people only respect something they have paid for. So communities who build, operate and pay for the water supply are considered to appreciate its value more than those who are merely recipients of government largesse or international aid. People only respect what they sense they own”.

It should be noted here that participation of people who are to benefit from a development intervention can be found not only within the water sector but also in forestry, information technology, education, health agriculture to mention a few. However, its increasing use within the water sector is unrivaled.

Professionals and writers on community participation within the water sector argue that it is beyond governments of developing countries to provide water through national networks to rural communities, hence the call for community participation (Page, 2003). This author also

argues that the technology (spare parts of boreholes) that is used to run water facilities in rural communities in developing countries can technically be managed by rural communities rather than a sophisticated and expensive pipe-borne infrastructure leading to the reliance on boreholes as a source of water for rural settlements. Finally, the advantage of relying on labour, cash and local raw materials provided by community members is cheaper when one compares the limited resources at the disposal of African governments leading to the reliance on community participation.

As a result of the realization of what participation can do to poor people and how it affects men and women disproportionately, it has come under scrutiny, especially its promise of empowerment and transformative development (Cooke and Kothari, 2001; Hickey and Mohan, 2004). As can be seen, the debate on power has moved a step further to empowerment. Empowerment, in this thesis is defined as:

“enhancing the capacity of poor people to influence the state institutions that affect their lives, by strengthening their participation in political processes and local decision making” (WB, 2000/2001; 39).

Empowerment can be achieved violently as can be seen with some guerilla movements however; liberals argue that marginalized groups can bring about change through the mobilization of people to convince the power holders of the need for change (Parpart et al, 2002). Women’s empowerment has been brought to development debate. This is however a dynamic process which includes their ability to change the existing ideologies subjecting them to a subordinate position to men (Bhasin, 2001). Empowerment therefore aids women to gain access to resources, control over their lives, independence and decision-making. Here, women are to be given the chance to develop confidence in running their own lives (Cornwall, 2007).

Development planners, scholars, and activists have come to the viewpoint that empowerment of poor women in the third world is the key to solving some of the problems of poverty, hunger and environmental degradation (World Resources Institute, 1994). However, the obsession with how empowerment can be measured by agencies that fund NGOs points to the problematic way in which women's empowerment has been accommodated into development thinking.

In Ghana as in other developing countries, some of the major themes under which women were to be empowered include; the provision of health facilities especially for women's reproductive health, finance to generate income, and education for the reduction of child and maternal mortality, to improve child nutrition and health, to lower fertility rates, to enhance women's domestic role and their political participation, and to improve women's economic productivity and growth (Tembon and Fort, 2008). Of late, the provision of water near the house is being stressed in women and development literature (Ivens, 2008; Verschoor, 2008) to enable men to assist in water provision so that women can have time to do other income earning activities or take part in community activities and decisions that affect them. The UN and many NGOs are working to facilitate the empowerment of women in developing countries, with initiatives focused mainly on income generation promotion to reduce poverty especially in rural areas where the majority of women are poor (Botchway, 2001). In Ghana, NGOs are playing an active role to empower women in order to move them from current dependency on men. Water provision is identified as one such activity which can empower women.

There are different sides to empowerment however, Moser's definition entails:

“the capacity of women to increase their own self-reliance and internal strength. This is identified as the right to determine choices in life and to influence the direction of change, through the ability to gain control over material and non-material resources” (Moser, 1989: 1815).

In a similar way, economic empowerment has been described by Moyle et al (2006: 246) as taking “*into account the economic strength of the individual or group*”. Rissel (1994) on the other hand pointed out that there are two dimensions to empowerment; psychological empowerment which involves an increased sense of self-determination within individual or groups; and community empowerment which involves political actions with active participation and redistribution of resources or decision-making that is of benefit to the community. Friedmann (1996: 164) also defines psychological empowerment as a “*consequence of participating in collective action and gaining greater control over the means to one’s livelihood*”. Rappaport (1984) also points out that empowerment does not have a single definition and needs to be defined by the people concerned. As can be seen empowerment is a complex phenomenon with many dimensions and elements within it and these dimensions are directed at individuals, among individuals, within a household, the community or society and nations.

Rowlands’ (1995; 1997) assertion that empowerment should be understood and experienced in different ways by different people, and that empowerment should embrace agency about decision making and choice to get rid of discrimination becomes important in analyzing how water provision brings about change in peoples’ livelihoods. Feminists from Ghana and other developing countries and women’s organizations around the world started to use the concept of empowerment to frame and facilitate social justice and women’s equality in diverse issues such as deprivation, subordination and exploitation (Awumbila, 2007; Mana, 1996). They therefore call for transformations of economic, social and political structures at the local, community, national and international levels for the betterment of women, their households and the world in general. The above changes would entail a “*redistribution of power*”

between nations, classes, races, women and men, or individuals in general and not at the local level alone (Batliwala, 1994).

Using water provision to achieve empowerment in rural areas is very important because the reliance on untreated water facilities coupled with the long distances covered to fetch water shows how women at the local level are suffering (Ivens, 2008). Water provision will to some extent have impact on improved water supplies and can *“be translated into tangible benefits for women: better health, time freed up for other activities and more productive potential”* (UN, 2005: 5).

There are debates on the methods by which women can be empowered. Whilst some see it as being achieved through their participation in decision making processes, others like Phillips (1999) argue that participation can bring about differential burdens on women as they will still be responsible for major works at home even after being empowered in decision making in community affairs. It is argued by Moyle et al (2006) that time is not available to women to enable them to participate more fully in decision-making both at the household and community levels. Moreover, the cost is too high and works against women in the sense that they are not helped by men even after participation in development activities. This study seeks to extend the debate to show how the new form of participatory approach of CM can lead or not lead to sustainable solution to water provision in rural communities. CM is discussed in section 2.4.2 below.

#### 2.4.2 Community Management of Water Resources

Community management (CM) of facilities is not only restricted to the water or environmental sector of Ghana and other countries but can be found in other areas like health, agriculture and education (Schouten and Moriarty, 2003). Communities are being involved in

managing resources like lands, forestry and mines, and facilities like education and information communication technology. In Ghana, the management of resources and facilities by communities aims to “*maximize community involvement, especially women, in sustainable land, forest and wildlife resources management*” (GoG, 2005a: 91). CM of water resources even though not new in Ghana and other developing countries emerged as a dominant paradigm within the last decade as a result of:

“large scale break down of water supply systems and failure of governments either to provide clean water themselves, or to devise a system where other agencies supply it reliably and consistently” (Schouten and Moriarty, 2003: 1).

Anschütz (1996: 13) defined CM:

“as a situation, in which a community takes the responsibility for, gets authority over and carries out control on operation, management and maintenance of a service benefitting its members”.

Schouten and Moriarty (2003: 2) also described CM as a situation where communities make strategic decisions regarding the level of service they want, how they want to pay for it and where they want it; they are also involved in the day-to-day operation and maintenance of the system; the community also collect money from users and buys spare parts, but they do not have to do this if they can delegate professionals to do this for them. Bell (2001) on the other hand argues that communities are involved in the management of water resources because of the need to use indigenous knowledge (IK) as well as people’s vital opinion for the management and preservation of environmental resources like water. CM is effectively carried out when the group is small (Anschütz, 1996). CM is about power and control of water facilities.

In developing countries like Cameroon, Ghana, Nigeria, Kenya and Tanzania, before CM was applied as a major development strategy in the 1980s, water supply facilities were planned and operated by the central government or its agencies on behalf of the people (Page, 2003).

However, budget constraints, low revenues, and weak operation and maintenance have led to the degradation of facilities whilst demand for water has increased (Engel et al., 2005; Karikari, 1996). NGOs advocated for CM of water facilities especially in the rural areas (WaterAid, 2008) due to the withdrawal of government from providing and managing these facilities. Proponents of CM however do not recommend the full acquittal of water facilities to the communities but point out that they should be under government guidance (Altaf et al., 1993; Brookshire and Whittington, 1993; Munasinghe, 1992).

Even though CM is not new within development circles, some major antecedents can be traced to its popularity these days. At the ‘Global Consultation on Safe Water and Sanitation for the 1990’s’ conference held in New Delhi in the 1990, some failures that were identified during the IDWSD from 1981-1990 includes weak or inadequate involvement of communities in water facility provision. The third principle of the New Delhi Statement points out that:

“community management is a key to sustaining services for the rural poor and is a viable option for poor urban settlements. Governments should support community management, through legislation and extension, and give it priority in national sector strategies for the 1990s” (UNDP, 1990: Principle 3).

Donors and governments built water schemes to serve large numbers of people without potable water facilities based on the IDWSD’s target of providing 100% coverage of potable water facilities by 1990 (Smout, 2000). Water facilities were constructed during the IDWSD in most countries but most of them could not be sustained after the donors exited because sustainability issues were not considered (Woods, 1994). During the IDWSD, participation of beneficiaries in managing the water facilities was seen by donors as a “time wasting” and time consuming exercise in providing resources to project staff to organize meetings with chiefs and elders before meeting the community (Woods, 1994). According to Woods (1994) the water facilities were not sustained because people were not trained to manage them and

resources needed to maintain water points were not available. In Ghana, for instance, simple tools that could be manufactured locally in case of breakdown have to be bought in the city or imported, leaving the people with no choice other than to revert to the use of their traditional water sources, thus undermining the new water facilities (Karikari, 1996; Kendie, 1993).

Bah (1992) through a detail analysis of the impact of improved water supplies within one integrated rural development scheme - Plan International Project in the Bombali District, Northern Province of Sierra Leone argues that:

“rural communities are willing to meet some of the cost incurred by participating in the programme not because of the need for an improved water supply system per se, but because they are interested in the associated benefits of the integrated package” (Bah,1992: 31).

After analyzing the water situation in the project communities in Seira Leone, Bah (1992) concluded that the communities where about 12 boreholes were constructed still depends on traditional water sources such as swamp pits and hand-dug wells because of their local knowledge for the construction of such sources. Development agencies providing water facilities in rural communities therefore need to appreciate the local knowledge of rural people and use it for the development and sustainability of rural water facilities. The success of rural water and sanitation programmes in delivering sustainable rural water services in Africa has been extensively documented by the works of Carter et al (1997). Also, Carter and Rwamwanja’s (2006) assessments of the effectiveness, impact and sustainability of the rural water programme in Uganda shows that the services provided through community initiatives were sustainable.

Critics argue that CM has been adopted as a “*convenient mechanism to ‘pass the buck’ when it comes to the complex issue of ensuring sustainability*” (Harvey, 2008: 126). Botchway (2001) argues that the main reason for the increase in CM in development projects is to

relieve the state from classic state functions like the provision of basic needs such as water as is being promoted by the WB and its other agencies under their policies of SAP and HIPC. There is no justification for government assistance in providing pipe-borne water to urban people who have regular sources of income and who spend less than 1% of their income on water, while the rural poor have to provide and manage their own water (Botchway, 2001). If a major factor in their poverty status is the lack of water, forcing them to contribute to the provision and management of their own water cannot help in achieving the MDGs.

Further, asking poor communities to manage the facility and women who have been identified as vulnerable in all aspects of income inequality (GSS, 2008) to make decisions and manage the water facilities without remuneration needs consideration. This criticism of CM was eloquently put forward by Botchway:

“a focus on local participation and empowerment can provide the state with a legitimate opportunity for shirking its responsibilities by dumping them on local areas even though those areas lack the resources needed” (Botchway, 2001: 136).

In line with the criticisms above, it is argued in this study that CM of water facilities in Ghana’s small towns will bring about collective action problems. Collective action:

“refers to any situation where several or many individuals cooperate in order to produce some collective good. A collective good on the other hand is any good or service provided to the members of such a collective group through the efforts of some or all of its members” (Smith, 2010: 232).

Collective action problems are faced by all species. According to Olson (1965), people face “social dilemmas” in achieving cooperation when the best move from a selfish point of view of an individual does not produce the best collective outcome that is desired. Human beings are however best at solving their collective action problems and in the long run avoiding the “tragedy of the commons”.

Collective action problems have been an important factor that hinders not only the management of environmental resources but resources in general. Different models and metaphors have been used to describe the collective action problem such as Samuelson's (1955) underprovided public goods concept. Hardin (1968) also brought the tragedy of the commons and Hume (1978) brought the free-rider problem whilst Hobbes (1991) postulated state of nature. In general, collective action problem is a situation where individuals, acting in a group share a common output. They however all individually have choices for actions based on their own expectation of benefits they hope to derive from the undertakings.

Various models have been developed and applied to resolve the collective action problems of resource management (Hobbes, 1991; Smith, 1981; Ostrom, 1990). However, collective action problems increase as the size of the group increases. Other variables that affect the organization of collective action include physical proximity, homogeneity, language and the charisma the leadership of the group posses (Glasbergen, 2010). Under these conditions, the costs of coordinating the group become higher and collection action is less likely to occur (Carlsson, 2000). There is therefore the need for an external force to regulate the group and solve the collective action problems (Glasbergen, 2010).

Even though collective action problems exist within CM of water facilities, the United Nations Development Programme (UNDP, 1993) pointed out that CM is a strategy that empowers those affected by a development project to take responsibility for initiating, implementing and maintaining the project for sustainability. This does not involve just participation in the construction of the project. Other supporters of CM see it as an alternative path to development that will mitigate the ills of neoliberal policies of state withdrawal from the provision of basic services to the people (Korten, 1990). The proponents point out that the strategies have to be flexible and locality-based for communities to take control of their own

destinies (Burkey, 1996; Chambers, 1997). Bell and Franceys (1995: 1177) points out that *“attractive slogans like voluntary initiative and the role of women, both of which underpin much development work, raise many searching questions”*. This exposed the flaws in the social and moral concepts of community on which the water and sanitation decade of the 1980s was based.

Caution was made by Bell and Franceys (1995: 1177) that;

“communities lacking the modern management skills, those which do not conform to the new “model community” image or who do not display the necessary consumer individualism, will once again become obstacles to development to be excluded on grounds of their irregular incomes and weak institutions”.

Some proponents even reject any form of partnership with the state or the private sector as espoused under neoliberal principles of private-public-partnerships and instead, advocated for communities to undertake all development efforts by themselves (Escobar, 1997; Esteva and Prasad, 1997).

Schouten and Moriarty (2003; 2) noted that CM:

“is about communities making strategic decisions of: what level of services they want, how they want to pay for it, where they want it. The community may also be involved in the day-to-day operation and maintenance, in collecting money from users and in buying spare parts - but they do not have to be. They may choose to hire a professional to do this for them. CM is about empowering and giving control”.

These characteristics can be said to match “citizen power” on the rungs of participation and is a particular form of participation that is being promoted by critics of neoliberal policies (Escobar 1997).

Also, Schouten and Moriarty (2003) point out that various communities and countries adopt their own method of managing their water points and some form of uniqueness is said to be present in all communities. Harvey (2008) however disagrees with the idea of uniqueness in CM in countries and argues that, CM has been implemented uniformly throughout the

developing world. He further argues that, the policy did not have the much needed impact due to problems like sustainability of the facilities. He calls for a number of “checks and balances” within communities themselves to sustain the water infrastructure even though he did not say what these checks and balances should be. Some of these checks and balances can come from different interest groups within the communities, like chiefs and assembly members asking for accounts to be audited. Otherwise, governments can claim in future that they were not responsible for rural water services since these are ‘community managed’. These checks and balances of CM as followed by the international community are what the discussion turns on in the next section.

#### 2.4.3 Principles of Community Management of Water Supply

According to the International Water and Sanitation Centre (IRC) (2004) there are four fundamental principles under which CM of water facilities works throughout the world. The first principle is that CM should be a social process in which communities own the facility in contrast to government ownership. The upkeep of the water resources is left to the care of the community itself. In a sense, CM is a process that places a large share of responsibility for construction, operation and maintenance of water supply systems in the hands of the user community. They should then be empowered to assume the role of managing it.

The second principle is about a long-term partnership between communities and donors. It revolves round capacity building between and within all the key stakeholders within the water sector and the communities for sustainability. The third principle is based on transforming the roles and responsibilities of the water and sanitation agencies and all supporting agencies. The supporting agencies are relieved of their roles as providers and turned into facilitators of services to enhance the system. The final principle is based on local

circumstances. Here, each community is to evolve its own management structure that can bring the best out of the system using the available resources at their disposal. This requires support from the government agencies, non-governmental organizations (NGOs), the private sector and the international donor community (IRC, 2004). There is thus no fixed formula in CM. Lammerink and Bolt (2002) point out that partnership in CM is likely to be abused especially by elites in society which can lead to both successes and limitations. Indeed, these principles are just one set of ideas circulating around CM of water facilities.

Because the IRC's principles are not the blueprint to CM, Lockwood (2002) came out with core components that are important and should be identified in the design of a successful CM of water and sanitation systems throughout the world. They are technical assistance, training, monitoring and information collection, coordination and facilitation with external assistance. Box 2.1 shows the roles and functions of institutional support that the government, private sector and NGOs have to provide to community water managers for their sustainability.

**Box 2.1: Roles and Functions of Institutional Support Mechanism to Community Management**

- **Technical Assistance:**  
Providing advice and guidance on a range of topics in support of the community management structure, as well as providing independent advice in cases where some form of arbitration may be necessary;
- **Training:**  
On-going training of the relevant committee members in a variety of disciplines, from physical operation and maintenance to bookkeeping and hygiene promotion; capacity building at the community level;
- **Monitoring and Information Collection:**  
Regular monitoring of system performance and feedback of information for remedial action;
- **Coordination and Facilitation:**  
Helping to establish linkages between community management structures and external entities, either from the state or private sector.

Source: Lockwood (2002; 22)

Other CM experts like McCommon et al., (1990), Evans and Appleton (1993) and Laryea (1994) point out that for CM to be effective, communities have to be responsible and take control of the resources at their disposal. Responsibility puts ownership and management of the project squarely in the hands of the community. Evans and Appleton (1993) specifically point out that for CM to be effective, there should be efficient community mobilization of resources; community decision making processes; the community should be backed by external support and legitimate authority with effective control; and the state water agency should provide management capacity and facilitate the CM effort for self-sufficiency. Carter and Rwamwanja (2006) also suggested based on the findings from a study of community water supplies projects in Uganda that, a wider framework should be considered when analysing water supply projects in developing countries. This call was made due to the fact that after the installation of the water supply system, there was a steady decline in the institutions formed to manage the water facilities and these authors argued for the consideration of not only the water supply project but also on a wider framework like the political constraints involved in water facilities management in rural communities. This thesis is taking similar line to access how the water institutions are managing the water facilities.

The rationale behind CM is to empower communities to take control of their water infrastructure. As previously discussed, empowerment entails a lot of ingredients (Bhasin, 2001) and financial empowerment is the major ingredient that has driven the state out of water provision, with the result that communities are being asked to take this responsibility. Studies like that of Anschütz (1996) point out that CM can only succeed if the population is not large. Cotton and Taylor (1994) and Doe and Khan (2004) also points out that large populations in a town can generate different interests which can hinder successful operation of the system. This argument is similar to collective action problems discussed already.

Criticising CM, Harvey (2008: 126) points out that CM actually disempowers communities in managing their water facilities because they are “*given no choice as to how their water services are to be managed and sustained*”. All decisions regarding technology are determined at the national level with little room for local needs. According to Harvey (2008) the policy of CM is not flexible to cater for the uniqueness that is being propagated by IRC and donors like the WB and IMF. If the policy is to be flexible, communities should be provided with choice as to how best the system should be managed for empowerment and the achievement of the MDG. Technology used in CM in Ghana is inflexible because most of the facilities are imported with little local content. Where there are local content in the facilities, they are made in urban areas like Accra, Tema and Kumasi leading to the dependence on these centres for parts when there is a break down of equipment in the rural areas.

In Ghana, the nationwide introduction of CM of water supply facilities during the 1990s led to the establishment of Water and Sanitation Development Boards (WSDB) in small towns and Water and Sanitation (WATSAN) committees in villages (CWSA, 2003; Hunter, 1997). These institutions developed their own management structures with guidance from the CWSA (see chapter 4.4.2 for more discussion). The committees and boards have been said to be successful in mobilizing funds within and outside their communities for the maintenance of the systems (Jackson and Gariba, 2002; Nyarko et al, 2006). Studies have been conducted on water systems in the rural and small towns of Ghana.

Nyarko et al, (2007) pointed out that recovering the cost of water services is a major obstacle in achieving a sustainable drinking water supply in developing countries. The study was conducted in five out of 30 community-managed piped systems in the Ashanti region of Ghana. Their study assesses the levels of cost recovery, household willingness and ability to pay for the full supply cost of water services, and financial management. They pointed out

that the existing tariffs are not sufficient to recover the full supply cost of the service based on the guidelines of the CWSA. Using 5% of household income as the ability-to-pay criteria, the study pointed out that 67–87% of the households in the five communities they studied could pay the full supply cost of water provision. The study concludes that the poor recovery of the supply cost threatens the long-term financial sustainability of the small towns' water supply sector.

Whittington et al, (2008: 714) reporting on a three-country research project designed to develop a better understanding of the performance of community-managed rural water supply systems in developing countries including Ghana found out that that:

“the demand-driven, community management model, coupled with access to spare parts and some technical expertise, has come a long way toward unravelling the puzzle of how to best design and implement rural water supply programs in developing countries”.

This study posits that in Ghana, 90% of all the boreholes in villages surveyed were still working and almost all the households in these communities surveyed were pointed out to be using at least some of their water from the systems whilst other households were using water from other sources. Siabi and Tambro (2008) also writing on Ghana pointed out that about 75% of the people in the country are expected to have access to potable water supply for domestic use however, a key factor that is likely to derail the attainment of this goal in rural areas and small towns of Ghana is the high cost of water to these communities.

Doe and Khan (2004) reviews the concept of CM in Ghana by pointing out that a central part of community development has gained acceptance among service providers as a result of the failure of the top-down approach to community development. Ghana government's policy on water therefore aims at cementing a bottom-up approach in water delivery without adequate critique of the circumstances under which the services are delivered. The authors pointed out

that operationally, the extent to which CM can be said to be important as a development strategy remains elusive. Strict examination of the concept needs to be undertaken to help service intermediaries in the application of CM in communities larger than rural villages. Eguavoen and Youkhana (2008) reviews the outcome of drinking water sector reforms in Ghana, and pointed out that three different management options are possible under the small town water sector. The authors discussed the water sector generally in small towns of Ghana and pointed out that many piped systems remain centrally managed by the Ghana Water Company Limited even though a policy of community-based management is favoured. The paper also reviews and compares two of the options being pursued in the country: public-private partnerships and community-based management. Eguavoen and Youkhana (2008) concludes that none of the management options offers a solution to the prevalent problem of failing water systems even though the potential of doing so exists if a system of continuous support and supervision for managing communities could be established. Engel et al, (2005) examined access to, use of, and participation in decisions on improved water supply in the Volta basin of Ghana and pointed out that while 71% of the households interviewed have access to improved water, 43% of the people interviewed continue to use unsafe water sources as their main domestic water mainly due to the quality of the water sources. The findings shows that water supply characteristics such as the location and pricing system affect household decisions to use the improved source.

Lane, (2004) by using Ghana, Lesotho and South Africa contributes to the learning process on scaling up poverty reduction through a description and analysis of rural water and sanitation programmes in these three countries in Africa. The author pointed out that the new water sector programmes have made significant progress towards poverty elimination through improved water and sanitation access and concluded that: top-level political commitment to water and sanitation is essential to sustain the system over a long period of

time; the devolution of authority from national to local government and communities improves the accountability of water and sanitation programs; and the involvement of a wide range of local institutions. Social, economic, civil society and the media empowers communities and stimulates development at the local scale; and the sensitive, flexible, and country-specific support of external agencies can add significant momentum to progress in the water and sanitation sector. Eguavoen (2008) pointed out that Ghanaian civil society actors more often than not refers to a globally defined human rights to water than to existing local rights. This study shows that the political discourse around drinking water in Ghana is shaped by a neo-liberal agenda which were based on three major targets: poverty alleviation, cost-recovery and equal access. However, there are more than one policy approach to water provision and management and various water right regimes co-exist in the country. The paper suggests that the global definition of the human right to water was fuelled by the debates on the privatization of metropolitan water supply as well as by the need for more efficient legal tools to stop water pollution. The paper questioned whether the current formalized and properly regulated private sector participation in water could help the poor in urban areas of Ghana, especially in Accra because poor people in Accra already depend on small or bigger local water entrepreneurs for their water sources.

Fuest in her (2006) report on Ghana's water reform discuss the implications of policies of the so-called demand-driven approach of community water supply in rural and small urban areas of Ghana. The author pointed out that Ghana's water policies were directed at providing sustainable drinking water supply to rural and small towns in order to ensure community ownership and sustainability of facilities. Also, the reform provided that beneficiary communities are to contribute towards capital cost of the facilities, private sector participation is to be pursued, and cost-recovery of water tariffs undertaken. After ten years of programme implementation, a multilevel analysis of interrelationships between

institutions, policy instruments and actors revealed that a variety of inconsistencies in programme planning and implementation are present in Ghana's water sector. These problems put the long-term sustainability of water supply at stake because the capacity and resource constraints at national, district and local levels were not amenable to reaching the ambitious objectives of the programme. Akari (2003) in his study on Ghana's small towns water management also argues that the Water and Sanitation Development Boards (WSDB) *"were deficient in designing adequate systems and procedures for efficient operation and maintenance, planning, budgeting and rational tariff setting"* (Akari, 2003: 7) forcing people to abandon the use of the water facilities. The sustainability of the water systems is thus a problem.

Regarding sustainability, the Bruntland Report defined sustainable development as *"development that meets the needs of the present, without compromising the ability of future generations to meet their own needs"* (WCED, 1987: 43). The Bruntland report goes further to describe environmentally sustainable economic development as:

*"a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations"* (WCED, 1987: 46).

Studies have been done to show specific parameters of sustainability like economic, environmental, social and aesthetic ones (Bithas and Christofakis, 2006). Finco and Nijkamp (2001) in their work 'pathway to urban sustainability' point out that urban sustainability is comprised of physical (natural and built environments), social and economic elements. The authors brought out factors that effectively support the three main objectives of sustainability as environmental equity (intra- and inter-generational), long term allocative efficiency and distributive efficiency (Finco and Nijkamp (2001)).

Critics of sustainable development point out that the concept is very elusive and comes with different interpretations (Castro, 2004; Solow, 1993). Others argue that sustainable development is too multifaceted, complex and dynamic to be captured by any single framework (Lyytimäki and Rosenström, 2008). Other authors like Bagheri and Hjorth (2007) call it a “reductionist” principle that has led to an increasing polarization of the world. Lele (1991: 613) criticizes the sustainable development movement:

“in its inability to develop a set of concepts, criteria and policies that are coherent or consistent-both externally (with physical and social reality) and internally (with each other). The mainstream formulation of sustainable development suffers from significant weaknesses in its characterization of the problems of poverty and environmental degradation; its conceptualization of the objectives of development, sustainability and participation”.

Lele (1991) points out that development itself is difficult to define thus sustainable development needs critical consideration. It is true that no one knows the preference future generations will be expressing for resources. What the current generation sees as a resource may actually not be seen by future generations as such due to changing forms of technology and the discovery of new natural resources that act as a better substitute for what is being used. Therefore, making room for things that is uncertain is depriving current generations of what they need to develop themselves.

Despite these criticisms, it is important for this study to show how water facilities can continue to serve the communities for a period of time with or without external support but with positive results after the development partner has left the scene (Bakalian and Wakeman, 2009). Achieving sustainability is concerned with the long-term preservation of environmental resources like water facilities for future use. Community water systems are said to be financially sustainable when revenue:

“is collected to replace infrastructure when it reaches the end of its economic life or expand system capacity to accommodate population and economic growth” (Whittington et al, 2009: 714).

One thing that emerge from the definitions and interpretations of sustainability is the fact that there is no consensus regarding its operational meaning. In this regard, it is not far-fetched to say that the requirements and definitions of sustainable development are not uniform. However, this study uses the concept of sustainability of community water supply facilities with a focus on the long term functioning of the water systems. Sustainability here means how facilities will continue to serve the people even beyond the MDGs without wishing to imply that, continuity is the only sustainability dimension of community water systems (Bithas and Christofakis, 2006). Nicol (2000) for instance analyses water, using sustainable livelihood approach in the context of poor households and pointed out that greater emphasis should be added to livelihood improvements in order to ensure wider uptake of the demand-responsive approach to water management for the water facilities to be sustained by the poor. Nicol argued that water should be treated as an asset and a good; institutional linkages should be developed; sequencing and time for rural people to access water supplies should be taken into consideration; and there is the need to understand the role knowledge plays in poor household's decision-making regarding water. This thesis however takes a different but similar stand by taking into consideration the management and uses to which the facilities are put for sustainability of the facilities.

The foregoing discussion has mainly centered on structures and principles that proponents of CM argue will lead to water facilities to continuously serve the population. The debate about obstacles and successes of CM of resources is yet to be concluded. This study will therefore make a practical contribution to the CM debate by using Akatsi and Torve water systems in Ghana as case studies to ascertain the success or otherwise of the application of the principles of community participation and management of water supply.

## 2.5 Conclusion

With the onset of WB and IMF sponsored SAP in developing countries, the application of cost recovery principles was advocated to manage water facilities in order to recover costs associated with water production and distribution. The WB and IMF point out that the best form of policy is to adopt neoliberal principles to manage water. Under this principle, water is to be treated as a commodity for sustainability, efficiency and conservation.

The critics however argue that, water is a human right and, as such, it should not be denied people. By making water a commodity, people stand to be excluded from its use. The proponents of water commodification also argue that, a human right to water does not mean people should not pay for it in the same way they pay for food and shelter. The proponents however argue for the imposition of a “lifeline” to water supply through which every citizen can access water (UNWWAP, 2006).

Even though community involvement, participation and management of resources at the local level which is also known as bottom-up approach exist during the 1960s and 1970s (Agrawal and Gibson 2001; UNICEF, 1999; Volger and Jordan 2003) it was not until the 1990s that it was popularised in Ghana’s water sector mainly due to the decentralization of governmental activities. UNICEF (1999: 14) pointed out that “*community participation arose as a concept in the mid-1960s*” however, not until the mid 1980s and early 1990s that the bottom-up approach to water supply management became a priority issue throughout the developing world. A major catalyst that led to the acceptance of the bottom-up approach to resource management can be found in the Brundtland Report of 1987. As a complimentary to the management of water by MNCs and private companies, water experts like Schouten and Moriarty (2003), Shiva (2002) and TNI (2005) called for CM. In the latter part of the 1990s,

NGOs started to embrace CM and constructed facilities to be managed under the CM concept due to the ill effects of state withdrawal of water provision and management.

Providing water supply to people is different from many of the objects that are produced for sale because it is a heavy and bulky commodity far too expensive to transport like any other commodity (Page, 2005). Engineers therefore strive to produce water near its source of consumption. Also, states tend to engage in water production because it is considered “*a key element of national infrastructure and considered a service rather than a good. This implies that it is not the water for which a consumer pays but the delivery of the water to the home*” (Page, 2005: 295). Due to the divergent opinion on water management and the realization that water “*commodification is fraught with difficulty*” (Bakker, 2007: 442) the Bretton Woods institutions (called development partners in Ghana), together with the GoG, agreed on community participation and management of water in rural areas and “small towns”. Private-public-partnership (PPP) is however to be practiced in large urban areas. I argue that appeals for CM of water run the risk of condoning the “cherry picking” of more profitable water markets in the big cities (Page, 2003) and leaving rural areas to fend for themselves. I argue that community participation and management is a strategy which tries to transfer costs from the central government to rural and poor communities. The question that is being asked is that is CM being called for in areas where the market and the government institutions are not able or willing to manage water? Is it being proposed under CM that this means of providing and managing water is more responsive to community needs, can empower women, and can be more effective and cost-efficient than other methods of water provision and management like the state? The next Chapter will be used to detail the methods that were used to gather data for the study.

## **CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY**

**“It is the One who fetches water that breaks the pot”**

### **3.1 Introduction**

Different methods which yield both quantitative and qualitative data are used in this study. In other words “triangulation” or a mixed methodology to gather data for knowledge generation is used. Since the overall aim of this thesis is to contribute to new knowledge on water management and use, both qualitative and quantitative methods are used. This introduction discusses the general methods used to acquire data for the study. Section 3.2 gives a brief introduction to the study area of Akatsi and Torve. This is done to keep readers abreast with the location of the study and the rationale for selecting this site for the study. In section 3.3, the methods used to acquire data are discussed. This includes both primary and secondary sources of data. In terms of primary quantitative data (3.4), questionnaires were administered to 200 respondents in Akatsi and Torve. In section 3.5, emphasis is generally placed on qualitative methods of data collection. The three most important methods employed here are participant observation and Focus Group Discussions (FGD) in Torve, and interviews with household members in both Akatsi and Torve. Elders were interviewed in Akatsi and Torve to discern efforts being made to improve the current modes of water delivery. Water managers in both Akatsi and Torve were also interviewed. Public pipe attendants were interviewed in Akatsi as well.

The secondary sources of data are discussed in section 3.6. Although emphasis is laid on primary sources of data, it is not possible to rely solely on these primary sources for the study. These secondary data sources are very important, as they serve as a yardstick in evaluating the performance of the Community Water and Sanitation Programme (CWSP) and the current practice of water provision, management and use in the study area. Data analysis

and presentation techniques are outlined in section 3.7. The main level of analysis for the study is the household and community levels as adopted by Marston et al. (2005) and Murray (1998) (albeit in different contexts). This is important because the research will have a bearing on the individual in a household, the community and the district. The Chapter also discusses the ethical and positionality issues in section 3.8, while the Chapter is concluded in section 3.9.

## **3.2 Site Selection**

Akatsi and Torve are the study communities. Details of the communities including a map are discussed in Chapter 5. These two communities can be found in the Akatsi District of the Southern Volta Region of Ghana. The total land area of the Akatsi District is about 1,077 km<sup>2</sup>, with a total population of about 93,477 (GSS, 2002a). Akatsi is the capital of the Akatsi District and is the hub around which all activities revolve in the district. It has 19,017 (2000 census data) inhabitants whilst the population of Torve, a village near Akatsi has 1,028 (2000 census data) (GSS, 2002a). Akatsi water facility is chosen for this study because the facility is part of the modeled “small towns” water facility being provided within the Volta and Eastern Regions by the CWSP. It is selected for the study based on the fact that it is the major centre in the district where the growth pole and decentralization concepts are being applied by the government of Ghana (GoG) and its development partners. Facilities are being provided by the GoG and NGOs in Akatsi and other small towns in Ghana to reduce polarization. Under the growth pole concept of regional development, economic, industrial, and infrastructural activities are concentrated in small towns which are also the district capitals (Owusu, 2005). The aim is to stimulate rural development and curb rural-urban migration (Thomi and Yankson, 1985). In terms of water infrastructure provision, a pipe

borne water scheme (mechanized borehole) is provided in Akatsi by German Technical Cooperation (GTZ) to “spread” and “trickle down” pipe water facilities to its neighboring smaller communities like Torve. Also, Akatsi is one of the modeled small towns in Ghana where the CWSP was started calling for its use in this study.

Torve was also chosen for the study because it is a village where a borehole was constructed by the Danish International Development Agency (DANIDA) as part of the pilot CWSP in the Akatsi District. This community is expected to develop structures in place for a modeled rural water provision in Ghana but initial study shows that the borehole is not being used even though the facility is working. Torve is also chosen because a river (Tordzie) passes through the community which serves as a basis for studying comparative water use. The river is a very important source of water to the community and can serve as a basis to determine which water the people use mainly for their daily activities and use-values they derive from each source. Also, this village is linked to all parts of the district and country with a good motorable road. These two settlements are chosen to show differences in water management and use between a village and a small town.

Farming is the predominant occupation of the people of Akatsi and Torve. The main staples for subsistence and for the market include maize, cassava and cowpeas, and other crops such as vegetables and fruits (ADA, 2006). Other activities that generate livelihood for people are subsistence livestock, fishing, petty trading and the distillation of alcohol (locally called *Akpeteshie*) which is mainly carried out in Torve. There is minor employment in the public sector for teachers and health workers.

The Tordzie River is the main source of drainage (see Chapter 5 for map of the study area) and is the only river that is not seasonal in Akatsi District. Other less important rivers are

*Agblegborloe, Wowoe, Lotor and Kelo*, all of which have a north to south trend. Detailed discussion of the study area can be found in Chapter 5; the discussion now moves to the methods that were used to acquire data for the study.

### **3.3 Research Design and Methods**

The study employed a number of different data collection methods, called a “mixed methodology” (Bogdan and Biklen, 2006; Tashakkori and Teddlie, 1998) or the “methodological triangulation” technique (Frankfort-Nachmias and Nachmias, 1996). The mixed method as used in this study is a method that combines the collection of quantitative and qualitative data. Even though Creswell (2003) took a strong stance against mixed methodologies because they had stood the test of time, others point out that the goals of triangulation are for convergence and completeness (Teddlie and Yu, 2007). In other words, the useful qualities of both methods could substantiate the reliability of the results. Also, by combining both qualitative and quantitative data, rigor in the research process is enhanced (Teddlie and Yu, 2007). Since the main goal of triangulation is to comprehend and confirm research results by using the strengths of both qualitative and quantitative methods, and based on the good conclusions made by Creswell et al., (2003), Morse (2003) and Newman et al (2003) on combining both methods, this study finds it appropriate to use both qualitative and quantitative methods to gain a better insight into water management and use in the study area.

Also, research methods and methodologies have changed over time and multiple methods are now being employed such as doing, hearing, seeing, recording, writing and reading in different ways in order to uncover different people’s experiences. The position of this study is

to use the methods that are appropriate to the problem at hand (Shordt et al, 2004). The type of data generated depends on the objectives of the study as summarized in Table 3.1 below.

**Table 3.1: Aims, Methods and Analysis of Research**

<b>Aims</b>	<b>Methods Used to Acquire Data</b>	<b>Analysis</b>
<b>1.</b> To assess how water facilities are being managed and the benefits people of Akatsi and Torve are deriving from the demand-oriented community water programme.	Administration of questionnaires, focus groups, observation, in-depth interviews with water managers and attendants in Akatsi and Torve.	Qualitative and Quantitative
<b>2.</b> To determine the role of community politics in shaping community water management in Akatsi and Torve.	Administration of questionnaires, focus groups, observation, in-depth interviews with water managers and attendants in Akatsi and Torve.	Qualitative and Quantitative
<b>3.</b> To determine the different sources of water, drawers of water, storage and uses to which each particular source of water is put by the people.	In-depth-interviews with water users, observation of people, focus group discussions and administration of closed and open ended questionnaires in Akatsi and Torve.	Qualitative and Quantitative
<b>4.</b> Finally, to examine the reasons why people use a particular water source and the different use-values people attach to the different water sources in the study area.	Focus groups, observation, in-depth interviews, informal meetings in Akatsi and Torve and secondary data.	Qualitative

The use of both quantitative and qualitative methods is very important because some objectives require the use of qualitative research and others require quantitative research. The first and second aims of the study rely mostly on the use of primary data and interviews with District Water and Sanitation Team (DWST) members, policy makers within the District Assembly (DA), Water and Sanitation Development Board (WSDB), Water and Sanitation (WATSAN) committee members and water point attendants. The third aim is achieved through the administration of both closed and open-ended questionnaires in the two study communities together with analysis of the qualitative and secondary data. The fourth aim is

achieved through analysis of detailed qualitative and secondary data gathered specifically on Torve.

Discussions on environment and resource use, and in this case water resource management and use call for the use of the household as the basic unit of analysis. The reason for this is discussed under section 3.4. In this study therefore, the main unit of analysis are the selected households in the study area. However this is extended to the community level as outlined below. One can thus identify three levels of analysis from the objectives of the study. These levels are:

- Level 1        District level focusing on the two locations.
- Level 2        Neighbourhood, suburb and settlement levels of Akatsi Town and Torve.
- Level 3        Household level using water management, collection and use.

Income of a household becomes important because it may determine which water source each household will use for a specific purpose (Israel, 2007). Income differentiation was therefore used during the participant observation and analysis of the quantitative data to undertake a comparative analysis of water sources and use. Based on levels of analysis outlined here, and based on the objectives, the study uses ‘beneficiary assessment’ as used by Cracknell (2000) and Patton (2002) (listening to the people, talking to them using their own language and living with them to know their water management, sources and use) to identify what works and does not work. Table 3.2 below provides a summary of the mixed methodology approach used in the study.

**Table 3.2: Summary of Fieldwork**

<b>Method</b>	<b>Akatsi</b>	<b>Torve</b>	<b>Total</b>
<b>Quantitative</b>			
Questionnaire (Households)	146	54	200
<b>Qualitative</b>			
Household Participant Observation	-	6	6
Semi-Structured Interviews	13	7	20
Focus Group Discussion (Households)	-	6	6
Meetings (With Individuals)	6	4	10

The problem of measuring change and impact between the two communities was encountered due to the lack of inadequate baseline data. This was overcome by asking the project beneficiaries to show the impact the water intervention has made on their lives and what they did before the water point was constructed. In short, the before and after methods of the beneficiaries' own assessment (Bamberger et al., 2004; Schindler and Eppler, 2003) were used.

Even though this study uses both quantitative and qualitative measures, qualitative measures are mostly relied upon because quantitative measures are more often than not misleading in giving greater objectivity than qualitative measures of real life situations (Sumner, 2004: 1). Some quantitative measures used are distance walked and frequency of gathering water; time used in gathering water; hours water flow within a day etc. Some of the qualitative measures are uses of water; use-values derived from water sources; gender differentiation of water use; reasons for the use of a specific water source and quality perceptions. In the next section (3.4), consideration is given to the main quantitative method used in the research.

### **3.4 Primary Quantitative Methods**

The study uses primarily a quantitative questionnaire method as an entry point to the research prior to undertaking detailed qualitative methods. Combinations of open and closed-ended questions were used in the questionnaire to gather basic background information on the two communities therefore yielding both quantitative and qualitative data. This method was found useful to show what the respondents actually said for easy analysis. The quantitative method was first used to gather data for the study because Madge et al. (1997) stress the need for questionnaire administration to be used as a prelude to gain a general understanding of a research problem and pave the way for further in-depth qualitative study. This guide was very useful in gaining insight into the general issues of water management and use in the two settlements under study.

The questionnaire was piloted in Akatsi and Torve and corrections were made before the main data-gathering started. The final questionnaire was divided into four sections (See Appendix 1 for questionnaire). Section ‘A’ comprised questions on basic socio-economic data, section ‘B’ solicited answers on the impact of the CWSP, section ‘C’ involved questions on water sources, uses and management and the final section ‘D’ gathered data on alternative water sources such as rain water harvesting. Table 3.3 below shows the population of the two communities and their sample size. The data was generated from the latest population and housing census of Ghana (2000).

**Table 3.3: Sample Size of Communities**

<b>Community</b>	<b>Male Population</b>	<b>Female Population</b>	<b>Size of Sampled Communities</b>	<b>Percentage of Total Sample</b>
<b>Akatsi</b>	8,940	10,077	146	73.0%
<b>Torve</b>	470	558	54	27.0%
<b>Total Population</b>	<b>9,410</b>	<b>10,635</b>	<b>200</b>	<b>100.0%</b>

Source: Generated from GSS, 2002a: 2000 Population and Housing Census.

The original idea was to assign a quota of 100 to each community and administer 200 questionnaires in total. This will give a uniform number for comparison in each of the two communities. However, it was realized that Akatsi's population was much larger compared to Torve. In response to this large difference, the sample size in each community was adjusted to the relative size of the total adult population. In other words, weight was assigned to each settlement for the administration of the 200 questionnaires. The total adult population according to the 2000 population and Housing Census was 52%. It was decided that the sample size should be at least 1% of the total population of each community. Two-thirds of the questionnaire was therefore administered in Akatsi and the rest in Torve. To this end, 146 questionnaires were administered in Akatsi and 54 administered in Torve.

Households were selected and a questionnaire was administered to a member of that household. A simple systematic sampling technique was used to select the houses (Babbie, 2007). The first-three houses at the outskirts of the town were labelled 1, 2, and 3 and so on. Ballot tags corresponding to the labels were made and one was picked at random and the number picked formed the basis for selecting the other houses. Administration of the questionnaire stopped after the required sample size was reached. By using this method, every third house in each settlement was chosen for the administration of questionnaire. The households themselves were given the leverage to identify the person to whom the questionnaire would be administered. This person should be the one who makes decisions about water to be used in the house on a daily basis. The questionnaire administration was narrowed down to an individual in a house due to the difficulty of defining a household, particularly in Ghana. For instance, many of the definitions assume it to be a harmonious, homogenous unit of production, consumption and reproduction (Hill, 1986: 78 in Madge, 1991). This was found to be more complex in reality. In Akatsi, one can find about 4 to 6 households in the same house. These types of houses are referred to as "compound houses" in

Ghana. Even though each individual within the house may have specific reasons to use a water source, which might be different from that of the household heads reasons (Jones, 1986 in Madge, 1991), it was considered most appropriate to use an individual in the house for administration of the questionnaire even where multiple households are present. The household selected for administration of the questionnaire is either the caretaker of the house or the most senior person in that house. Since the household as a unit of analysis often obscures women’s viewpoints and perspectives in developing countries and men’s viewpoints are predominantly used in research as household heads, this deliberate method of selecting an individual that decides on water sources to be used on a daily basis gives a greater chance of women being included in the study, a strategy that worked well as shown in Table 3.4 below. Women’s population is greater than men by about 3.2% in Akatsi and Torve, indeed, the whole of Ghana according to the GSS (2002a). It is believed that this method would help the research to gather qualitative data for water management and use.

**Table 3.4 Sex Composition of Administered Questionnaires**

<b>Community</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Akatsi	38	108	146
Torve	10	44	54
<b>Total</b>	48	152	200
<b>Percentage Total</b>	<b>24%</b>	<b>76%</b>	<b>100%</b>

The questionnaire was administered throughout the day and where the decision maker on water sources to be used was not available, the house was noted and an appropriate time was fixed for the administration of the questionnaire. A research assistant was recruited to assist with the administration of the questionnaire and the focus group discussion (FGD). The research assistant is a teacher in Akatsi as such he did not encounter problems administering the questionnaires. Where he did, he consulted me and the issue was resolved promptly. The

questionnaire was administered personally to the respondents. It was not given to them to fill in. A more detailed discussion of qualitative data generation process is done in the next section.

### 3.5 Primary Qualitative Methods

The qualitative methods employed are summarized in Table 3.5 below and discussed in detail in the following section.

**Table 3.5: Methods Used in the Qualitative Research Process**

<b>Tools</b>	<b>Sample in Community</b>	<b>Issues discussed/observed</b>
<b>Participant Observation</b>	Torve: 6 households, two from low income, two from medium income and two from high income groups were observed in Torve. Focus was placed on all members of the household to learn on the day-to-day activities of water collection and use for a week in each household. N=6.	The observation centred on: water use by each household member, who collects it, who gets what water, for what, amount, type, location, distance, and frequency, time used to collect water, preference of water among the households, ways of storing, time used, the one who pays for water etc.
<b>Semi-structured Interviews</b>	These were done in Akatsi and Torve. People aged 18 years and above were interviewed (7 in Torve and 13 in Akatsi). N=20	Questions asked about: water use, relations with water authorities, forms of participation, livelihood strategies, benefits from hygienic water points, why certain people collect water, issues affecting them such as economic, socio-cultural, and environmental etc.
<b>Transect walk to water sources</b>	6 of these were done in Torve- 3 with men and 3 with women, to ascertain efforts being made by each to improve or get water at specific area of the water source. N=6	Sources of water, why people use specific water at that source, problems with water collection and use, etc
<b>FGD</b>	Torve: these were conducted to complement the responses from in-depth interviews and to act as a crosscheck for reliability of data. Data was gathered from all 6 households observed. N=6.	This involved general issues on water and ways being sought to improve water availability for improvement in the living condition of the people in the community.
<b>Informal Meetings</b>	These were conducted with chiefs, community elders, a government official, water point attendants and members of the water board.	General issues on water discussed

After the administration of the questionnaire in both communities, time allocation studies (Johnson, 1990; Srinivasan and Athuru, 2005) were undertaken in Torve by means of observation and respondents' own time calculation to determine how much time each member of a household took to collect water. A week was spent in six households and these households were observed from morning till evening. This method was used based on the view that ethnographic research is particularly suited for understanding an activity like water collection and use which is seen as women's domestic activity in developing countries (Duelli-Klein, 1983; Stanley and Wise, 1993). Even though, observation was done in Akatsi Town itself, it was not as intensive as done in Torve because there is no river in this community to serve as alternative water and to give reasons why people use the river compared to the borehole or pipe. Also, detailed participant observation was undertaken in households in Torve only because all the different sources of water like borehole, rainwater harvesting, sachet water and hand-dug wells can be found in Torve apart from the pipe borne water which is actually pumped borehole water. Also, since the thesis is divided into management and uses of community managed water, I decided to observe in detail the management part in Akatsi and observe the use part in Torve.

The person who collected the water, the reason for collecting the water and what the water was used for by each member of the household in Torve were all recorded. Questions were asked about why certain people did not collect water. At the end of the week, family discussions were undertaken with all the different households studied to generate ideas for clarification.

Six income groups were determined and used in Torve based on the people's own assessment of who is poor in the community or through the use of participatory wealth ranking (Campenhout, 2007; Scoones, 1995). This assessment is similar to the wealth

indicator/ranking used by Cleaver (2005: 896) to determine income groups. In Torve, a poor-income household is seen in the community as someone who lives in a mud and thatched house with no electricity in the house. All people who live in a mud and thatched house and whose rooms are not screed or plastered with cement are therefore labelled poor in this study. A medium-income household lives in thatched house but their house is made of bricks without electricity and cement floor. A rich person or high-income household lives in a painted cement house with a corrugated iron sheet-roof. Some amenities like electricity, radios, TV etc can be found in a high-income household.

Participatory wealth ranking enable this study to apply this alternative poverty measure to identify poverty indicators that are locally valid (Campenhout, 2007). This method also enables community members to rank each household according to their own perceptions of well-being. A poor household does not engage in a steady job, does not wear good clothing, is less likely to be educated and send children to school, have small farm size and less likely to enjoy good food. A medium income households experience these factors but are better off compared to poor households and high income households are able to meet all these requirements. Houses are used because they are the major differentiating factor that can easily be seen to show the differences between all the three groups. It can be argued that some households or families might be poor but live in a painted cement house because they inherited it. These people are still included in the study because they can be said to be rich through inheriting the property.

In all, participant observation, administration of semi-structured interviews, FGD and informal discussions were used to gather the primary qualitative data. The Chapter now turns to discuss in detail how the qualitative data was generated for the study, starting with household participant observation.

### 3.5.1 Participant Observation

Hammersley (1992: 2) defined participant observation as a research method where the researcher:

“participates, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions; in fact collecting whatever data are available to throw light on the issues with which he or she is concerned”.

Ashcroft (1987) also pointed out that ethnography is based on the direct observation of, and reporting on people’s way of life, thus it is a form of participant observation which attempts to gather data, “on location”, which helps in the understanding of a particular social group.

The researcher stayed in Torve and Akatsi for eight months and observed the people’s daily experiences in the context of water management, collection and use. The necessary rapport was first established through the chief in Torve who deployed a member of the community to take the researcher round the community and introduced him to the members of the community. Without this rapport being established, people would not entertain the researcher because of the politics involved in water provision and management in Akatsi and Torve. Some people refused to answer questions until they were told that permission had been granted by the chief. The observation guide to the study can be found in Appendix 2.

This method of data collection was chosen because of its inherent characteristic of directly observing what is going on in the field, unlike questionnaires and interviews, which are based on what the informant says to the researcher. Also, data was collected from real life situations in the field, making it one of the most reliable empirical methods for data collection (Denscombe, 2003). This method enabled the researcher to go and search for the information

rather than relying on what the respondents say in quantitative methods. Another characteristic of participant observation that calls for its use in combination with quantitative data in this study is the need to observe things as they normally happen, rather than relying on what happened under artificially created conditions. The intention is to keep the “naturalness” of situations intact. During the participant observation, the whole day was spent in each household observed. The dwelling was not shared with the household but the researcher rented his own accommodation. The households were visited early in the morning and till dusk when all water related activities were completed. This routine activity was done for a week in each house under study.

Six households were selected randomly at the riverside in Torve based on the six different wards and also based on income for observation. Information was gathered on the total time that each individual spent on water collection and what it was used for, including a count of the frequency with which water was collected during the day, and the water collection processes of households. The use-values derived from each water source such as- drinking, washing the body, clothes or plates- etc, and when the next water was collected, were noted. The age and gender of people involved in water collection was noted within all households. In a nutshell, the differences in water management and use were noted and reasons for performing such a role were ascertained. After spending a week with each household, the researcher moved to another household.

A rota of activities was prepared for each household and events and observations were written down. What happened during the water collection process was also noted. How the water was collected - either by the individual or in groups, and the equipment used to collect the water by gender, was noted. Data was also collected on what the water was used for, who used it, reasons given for using a particular type of water at a point in time. Even though

seasonal variation of water use is not being used in this study, observation was undertaken in February, the peak of the dry season and March-April, the beginning of the rainy season. Three households in each income group were observed during the dry season and three during rainy season. This was done to know the differences in water use and collection at the two seasons of the year since people might behave differently with water use during the dry season than they do during the rainy season. Due to time and financial limitations, the observation could not be done on all the six households during the rainy and dry seasons.

It should be noted that participant observation has posed the problem of inter-subjectivity (Lindsay, 1997) as the term itself poses conflict between the roles of participant and at the same time an observer. This research can be called observation because the researcher did not actually take part in water collection for the household. The participant observer however has the advantage of recording attitudes and behaviours, unlike interviews and FGD, which are “artificial” situations where individuals can decide to satisfy the researcher with what s/he wants. Another problem with participant observation is that the researcher needs integration into the host community to know individuals well enough to understand how they interact with one another.

The people being observed at one stage or the other also get to know that they are being observed and thus might act to influence what the observer is interested in finding out. However, its demerits are not as artificial as administration of questionnaires and interviews. In addition, the people saw the researcher as one of them; someone who speaks the same language as them; and hails from a town that is only 20km from Torve. This characteristic made the researcher acceptable to the participants, while a researcher from a different country might face different conditions. These credentials enabled the researcher to undertake overt household observation in Torve.

It could be argued that spending a week in a household is not enough for ethnographic study. However, one needs to take into consideration the status of the researcher as an Ewe (the people from southern Volta Region of Ghana) who had previous contact with the research area. Also, a total of more than eight months was spent in gathering both the quantitative and qualitative data for the study. Moreover, one week in 6 households proved to be sufficient time to gather enough material to answer the research questions. Further, other methods were used to complement the problems associated with each method as discussed under semi-structured interviews below.

### 3.5.2 Semi-structured Interviews

After administering the questionnaires in the two communities, twenty key respondents were interviewed in both communities to serve as a prelude to the acquisition of the other qualitative data. Based on the population of Akatsi and Torve, seven people were interviewed in Torve and 13 in Akatsi. This was done to help gain insight into what needs to be investigated more deeply as the research progressed. The information provided by these informants generated insight into questions asked during my observation. Also, these interviews gave data based on emotions, feelings, experiences and sensitive information like ethnic tension which cannot be generated at times through observation.

A simple systematic sampling method (Babbie, 2007) was used to select every 25<sup>th</sup> person who came to a specified water point to gather water. This sampling method was employed based on Torve and Akatsi's total populations (GSS, 2002a). Some people refused to participate in the study so the next available person was selected for the study. Some of the questions include, sources of water, factors influencing choice of water, major water collectors, vending activities, perceptions on water availability, quantity and quality of water

used, coping strategies in the wake of scarcity, assistance given by husbands/partners in water collection, why men assist in water collection, advantages derived from existing water facilities, water handling practices and qualities of water to mention a few. Members of the community indicated themselves what changes had taken place, and what has remained constant in their water use over time. A detailed agenda of topics to be covered was put on paper for discussion, however the researcher used his knowledge of the research objectives, the information gained from other methods such as the questionnaires, secondary data and the comments of the respondents themselves to select which parts of the dialogue to explore further. Cue was taken from Johnston et al's. (2002: 660) argument that:

“the aim is not to collate typical responses to pre-defined questions from a random sample or to generalize about the views of a population, but rather to record in complex detail the opinion and ideas of a relatively small number of individuals or groups”.

Also, England's (2006: 288) point out that “*how we develop a particular research approach and what research questions we ask and what we see when conducting research*” was taken into consideration especially during the focus group discussion.

### 3.5.3 Focus Group Discussion

Focus Group Discussions (FGD) were undertaken in the people's houses in Torve. Due to the merits of using focus groups in research, they are now widely accepted and used as a research method by human geographers in exploring various qualitative social and spatial events (Hopkins, 2007).

FGD has different definitions however; some of its common features include an organized discussion, social gathering, interaction and collective activity (Goss and Leinbach, 1996; Kitzinger, 1994). FGD has become a common method of data acquisition due to these key characteristics especially the insight and interaction generated between the participants. All

members of the households observed automatically qualified to participate in the FGD making in total 6 discussion groups. Table 3.6 below provides details of the participants in the FGDs and Appendix 3 is a sampled FGD guide.

The rationale for holding the FGD was to gather attitudes, feelings and experience of the groups which could not be derived from the other methods of the mixed methodology employed. It was also a useful method to speak to diverse community members on water use and management. It was also meant to inform the group of my observations for clarification. This method of data acquisition becomes very timely in knowing consensus or disagreements within the household on water management and use. Children and men’s inputs are also used during these FGDs.

**Table 3.6: Members of the Focus Group Discussions Held in Torve**

<b>Income Group</b>	<b>Members of the Discussion</b>
Low Income	
1	Head of household, wife and three children
2	Head of household, wife, four children and 1 male and 1 female relative
Middle Income	
3	Head of household, wife, three children and a female relative
4	Head of household, wife, three children and a grandfather
High Income	
5	Head of Household, Wife, two children and a male relative
6	Head of household, Wife, three children and a male relative
<b>Total</b>	<b>33</b>

Even though FGD has inherently useful characteristics, it is also limited in terms of providing generalization from the findings to the population that it was derived from due to the small

number of people that participate in it (Gibbs, 1997). However, it was found during the FGD that small family discussions led to greater participation and interaction of all members, including some wives who were initially not ready to speak in front of their husbands, but who started to talk as the discussion intensified, making it a good method to be combined with others. What is more, it serves as a back-up to responses from the questionnaire method.

#### 3.5.4 Discussions and Transect Walks

Finally, discussions were held individually with two chiefs, two elders, local government officials, water point attendants and WSDB/WATSAN members in the two communities (see Appendix 4). This method was also very important for the research since it allowed people to give informed views on water issues. The meetings were recorded on tape for easy transcription. It was discovered during this discussion that some water point attendants are not aware that their activities are actually a form of community participation and management of water facilities. This is because, most of them see their work as a source of income and not participation to sustain the facilities, as being disseminated in official government and NGO documents. This method enabled some of the water point attendants to become involved in the research. Acknowledgement was made by Booher and Innes (2002) that a good dialogue requires both formal and informal interactions and this was put to use in the research. In Ghana where formal activities are seen by government officials as disclosing information that have to be paid for (in kind or cash), informal discussions, meetings and interactions is very important as a launch pad to establish rapport and trust to gather data for studies.

Transect walks were done in Torve with three men and three women to ascertain how water was acquired by men and women at different areas of the water source. The transect walk

was done only in Torve because the detailed participant observation was done here. Also, the transect walk was undertaken in Torve alone due to the river which is not present in Akatsi. The transect walks form part of the rapport-building between the household members being observed and the researcher. The method assists to gain understanding of barriers to water gathering as used by Motteux et al. (1999). This method was very useful in integrating the local knowledge in water collection at the water point (Dunn, 2007; Glantz and McMahan 2007). Even though informal and transect walks have been used in this study, they are not a reliable means of gathering facts on which might hinge policy. As such the method was only used as a supplement and as a rapport building process for other reliable sources like observation, FGD, interviews and secondary sources which are discussed in section 3.6.

### **3.6 Secondary Sources**

Secondary data helped to gather insight into the whole study and specifically assisted in interpreting the primary quantitative and qualitative data gathered from the field. It gave a broader picture of what the data generated means in the context of other existing developments in the water sector. In other words, it provided a source of comparative information to check on the reliability of the data gathered from the primary qualitative research (Clark, 2005) and assisted in providing data on changes occurring in the water sector at the national policy level which is not available in the field.

Today, organizations are duty bound to organize all areas of their activities mostly due to the development of modern administration characterized by the principle of documentation (Carman, 2007; Carman and Millesen, 2005). Documents relating to planning, policy, evaluation and management are important sources of data for evaluating development projects especially those on water. The records of organizations like the Water Research

Institute, Akatsi District Assembly (ADA), the CWSA and the WSDB were consulted. These records are available for the public to consult and access upon request and they form an integral part of the study. Their release by public officials in Ghana is however a different ball game because public officials feel they do researchers a favour by giving them information that they have at their possession and often expect favours in return.

The researcher is aware of the partiality of some of these records. Some of them may try to hide the true events and reflect a particular interpretation of what actually took place. Such critical insight was put into the interpretation of the data for the study. These records are not taken on their face value but rather serve as a basis for evaluating what the qualitative data brings forth.

Government publications and official statistics are authoritative sources of data in Ghana in the absence of a vibrant private sector and these publications, especially those of the DA, are used for the study as they are produced by experts from the field and therefore they carry some credibility. This Chapter has discussed all methods used to gather data for the study. The next section (3.7) discusses methods used to analyze the data. First, details of the process of data analysis are outlined.

## **3.7 Data Analysis and Presentation**

### **3.7.1 Quantitative Data**

The analysis of the data from the questionnaires was performed using frequencies of the various responses worked out, interpreted, and explained in terms of the general trends that emerged with the aid of the Statistical Package for the Social Sciences (SPSS). Because of

the intention of showing qualitative reasons for the use of a specific water source, statistical techniques are not used to test significance or relationships between variables. The use of mainly qualitative methods in this study is not a missed opportunity based on Denscombe's (2003: 236) observation that:

“provided the researcher has a vision of the pros and cons, and appreciate the limitations to what can be concluded on the basis of the data collected, good quantitative research need not require advanced statistical knowledge”.

To easily input and analyze the data from the questionnaire, it was coded before it was administered. Categories of responses were sorted, built into numbers and integrated into the questionnaire in advance for easy classification. Through this, elementary aspects of quantification in the form of simple descriptive statistics were generated to compare and contrast responses and analyzed accordingly.

After administering the questionnaire, the data was “cleaned”. This process comprised deleting obvious errors like double entries and entries that could not be taken as valid responses due to poor data logging through administration. After this procedure, variables were aggregated for easy categorization. After completing aggregation of variables, they were re-coded in order to remove “outliers”. These are uncommon or unexpected responses which can lead to misinterpretation of results (Field, 2005). The open response questions were analyzed using subject headings for the most common responses on the basis of the coding. Those that were difficult to initially categorize have been placed in “other” column and interpreted after data inputting was complete. The “refined” data was then inputted into the SPSS software and transformed into percentages, tables, graphs and charts for easy visualization and interpretation. The advantage of using simple percentage, tables and charts is that it can easily be understood by ordinary readers.

The study mainly uses percentages to show responses to questions. An advantage of using percentages in the form of graphs, charts and tables is that some of the questions were put in closed and some in open-ended format. In some instances, direct responses from the questionnaire were used to show answers to questions which in a way can be called qualitative responses. This was done to give a qualitative flavour to the responses and not only present responses in percentages or ratios which are characteristics of most studies on water management and use in developing countries like Ghana. Indeed, the detailed qualitative method employed in this study records what participants say in their own words issues that matters to them and why. Also, it provides a forum for the participants of the research to express their views for meaningful understanding of each household and community's needs and expectations. It is felt that without qualitative insight and expression of participants own feelings, an incomplete view of water management and use may be formed.

### 3.7.2 Qualitative Analysis

In order not to forget things observed and to provide useful description of information gathered from the field as well as important analytic issues, the researcher wrote down reflections of meetings, interviews, events, informal interactions, ideas and problems right after their occurrence. Identified themes were noted early enough to undertake a follow up visit should the need arise. Interviews/discussions were recorded with a tape recorder and transcribed manually even though qualitative data analysis software (QDAS) such as N5, Ethnograph, NUD\*IST and NVivo can also be used. The researcher is aware that QDAS has an advantage of opening up the "black box" of qualitative data management and analysis together with generating validity and reliability (Richards, 2005). However, such good qualities alone do not guarantee them being used well in conducting research as the

researcher found in his case. Their use, especially N6, needs specialist knowledge, which eventually boils down to robust training (Sin, 2007). Since the study is aimed at analyzing different group's management and use of water in the study area, mainly by using qualitative data, salient features that are in line with the research questions and topics were compiled and coded. The study relies heavily on recording of speech and writing of actions and pronouncements by the people being studied therefore, recurring themes were identified and interpreted. Direct quotations from the participants formed an integral part of the analysis. Box 3.1 below shows the designation used for each respondent in the study.

**Box 3.1: Codes Used to Designate Interviewees in the Study**

**Codes for Individuals**

ADA Planning = Akatsi District Assembly Development Planner (Male)  
DWST member 1 = Environmental health officer (Male)  
WSDB member 1 = Chairman (Male)  
WSDB member 2 = Technician (Male)  
WSDB member 3 = Female (Sanitation)  
WSDB member 4 = Female who resigned (Member)  
WSDB accountant = Accountant of the WSDB (Male)  
PPA 1 = Public Pipe Attendant 1 (Female)  
PPA 2 = Public Pipe Attendant 2 (Female)  
WATSAN member = Torve WATSAN (Male)

**Codes for the Six Households**

*Two Low Income Households*

LIH member 1 = Male Member of Low Income Household One  
LIH member 2 = Female Member of Low Income Household One  
LIH member 3 = Male Member of Low Income Household Two  
LIH member 4 = Female Member of Low Income Household Two

*Two Medium Income Households*

MIH member 1 = Male Member of Medium Income Household One  
MIH member 2 = Female Member of Medium Income Household One  
MIH member 3 = Male Member of Low Income Household Two  
MIH member 4 = Female Member of Medium Income Household Two

*Two High Income Households*

HIH member 1 = Male member of High Income Household One  
HIH member 2 = Female Member of High Income Household One  
HIH member 3 = Male member of High Income Household Two  
HIH member 4 = Female Member of High Income Household Two

A structured procedure was used in analyzing the qualitative data. This involved identifying and putting codes on similar categories or segments as identified by Crang (2005) and Kitchen and Tate (2000). The coding schemes made the analysis more systematic. Convergences and divergences were noted in responses and interpreted accordingly. To capture actual responses and actions by respondents, based on the triangulation method, direct quotations from the respondents are used.

Other responses from interviewees that did not recur in the thesis are used without any codes. For instance, the interview with the Deputy District Co-ordination Director occurs once as such it has not been given code. This approach allowed varied experiences to be shown, voices to be heard and representations to be made (Smith, 2001). Having shown both quantitative and qualitative methods employed to gather and analyze data for the study, the chapter now discusses ethical issues raised by the gathering of the data for the study.

### **3.8 Ethics and Positionality**

A closer look at the ethics of conducting geographical and social science research was undertaken throughout the research process to gather data, in analyzing the data and in reporting it. Research ethics according to Chilisa (2005) refers to regulation of conduct of a given profession or group. This regulation was rigidly applied in this study. Ethics stems from the concern about the exploitation of 'subjects' by researchers, especially those in developing countries like Ghana. Issues related to research participants' rights and welfare, and the researcher's obligation to the communities and people that the data were gathered

from, demanded that the study is conducted ethically. Ethics become crucial since the right to knowledge generation must be balanced by the rights to personal and community integrity and privacy, placing limits on where, when and how the research is carried out (Peil, 1985). The main concerns here were to weigh up the costs and benefits of the research, obtaining the informed consent of the participants in the research and ensuring that the after-effects of the research are not damaging to participants, communities and organizations. A closer look at these issues and best decisions and safeguards were put in place to make the research a worthwhile project.

It should be noted, however that, over-concentration on possible risks and safeguards could prevent the desired results of the research, denying the society and the country at large from the benefits of the research. However, care was taken to adhere to ethical guidelines for geographical and social science research. The researcher adhered to the data protection laws of both Ghana and the UK, but specifically, the codes of ethics of the social sciences that lay down conditions governing the legitimate collection and storage of personal data, and human rights legislation that has implications for the way in which researchers go about gathering data. Denscombe's (2003) three underlying principles that guide good research were used: the protection of interests of research participants; avoidance of deception or misrepresentation and informed consent of participants. They are now discussed in detail below.

#### 3.8.1 The Protection of Interests of Research Participants

The interest of the people who participated in the research was safeguarded by not making them suffer psychologically or physically during or after the study. Safeguards were put in place not to disclose the names of the participants unless they consented to it. It was made a

priority to protect my own safety and those of the research participants when arranging meetings or interviews by not going alone and informing members of the communities my intentions through their elders. Using chiefs as intermediaries in research is very important in Ghana because they are seen as the custodians of the whole community.

The issue of privacy emerged due to the fact that the researcher went to people's houses to study their daily household chores. People's houses and what they do in them are considered private in Ghana as such, assurance was given the participants that no personal information would be disclosed to anyone. Disclosing this can lead to participants being targeted by other community members because of the sensitive nature of some of the findings. The participants' confidentiality is therefore assured in writing up the report and thereafter, unless they assented to their names being used.

### 3.8.2 Avoidance of Deception or Misrepresentation

The research participants were informed of the purpose of the research and what the data will be used for. It was ensured that the 'ethical dilemma' was balanced to gather the data with the interests of the participants and that of the researcher considered. Openness and truthfulness were the key words to the participants about the research. Cook and Crang (1995: 24) suggested that as a general rule "*the researcher should do what the community requires as long as it does not compromise the researcher's own values and beliefs*".

### 3.8.3 Informed Consent of Participants

Informed consent has been defined by Diener and Crandall (1978: 34) as:

"the procedure in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decision".

The researcher did not force people to take part in the study but rather their participation was voluntary. Sufficient information was given to the respondents about the research which enabled them to make up their minds as to whether to participate or opt out. Indeed, because of the informed consent, some of the people asked to participate in the study politely declined.

An agreement was reached with each participant which was witnessed by at least two people in the community. As always, the researcher relied on the codes of conduct of the social sciences regarding informed consent for the study. The elements of competence, voluntarism, full information and comprehension were rigidly adhered to and these elements gave the researcher confidence that the rights and welfare of participants were ensured. Also, the data protection principles were adhered to in conducting the study. All data gathered were collected and processed in a fair and lawful manner; the data collected will only be used for the study; the data are accurate, kept secure and not distributed to third parties; and finally the data will be kept anonymous and destroyed after the report has been handed out. In short, the researcher tried to become the ‘good ethical researcher’ by carefully examining moral alternatives, exercising judgment in each situation, and accepting responsibility for the choice of method (Diener and Crandall, 1978).

#### 3.8.4 Positionality and Reflexivity

Undertaking research on water management and use demands consideration of the researcher’s own positionality in the study. England (2006) discusses how different people from different parts of the world conceptualize the world and their reactions to researchers.

Cloke et al also point out on positionality that:

“the researcher should aim to clarify his position in a wider societal hierarchy of power, status and influence, thereby ascertaining the different sorts of relationships –

complete with the many differing roles, responsibilities and possible limitations to what can and should be ‘exposed’ about the researched” (Cloke et al, 2004: 29).

The different aspects of the researcher’s multiple positionality of Ewe, middle class, male and a student in a tertiary institution who is conducting research to acquire a PhD in the UK, was enough to establish a good relationship with the respondents. Also, these factors had implications for the relationship between the researcher and the respondents, the research process and the findings of the study (Soni-Sinha, 2008). Power relations between the researcher and the respondents evolved from the researcher being seen as an outsider at the initial stages of the study to being seen as an insider at the later stage of the study, as the respondents got to know that the researcher hailed from a district that shares a border with Akatsi District. Most of them asked the researcher why he decided to study them instead of his hometown. Once I had explained the rationale to them, that the water situation in Anyarko, my hometown, is very different from that of Akatsi, and pointing out that Akatsi District also has local water management strategies that are not present in my hometown, they accepted the researcher as one of the community members rather than as an outsider. My status as an Ewe with the same linguistic background as the participants, and as someone who lived and worked in Akatsi during my national service days in 1998 shifted respondents’ stance from awe and reluctance to be interviewed to acceptance and exchange of ideas. This was especially so with workers in the DA to whom I gave articles and published materials on water and development issues.

As Mohanty (1991) and Katz (1994) note, identities in various social situations bestow different levels of power on their owners. Identities are inherent in fieldwork and negotiating them brings with it challenges. Positionality is a crucial factor framing social and professional relationships in the field as it sets the tone of the research, affecting its course and results (Chacko, 2004). Since positionality is a relative and contested issue, resulting in

apprehension about disclosing personal information and the politics of representation of unequal relations of power (Dyck, 1997), I relied on my experience of conducting research in rural areas of Ghana to address this thorny issue. I adopted concrete strategies to equalize the power relations that emerged. I relied heavily on Chacko's (2004: 54) acknowledgement that the "lens of positionality is a useful device to explore and understand issues of identity".

After my reconnaissance survey and selection of the two communities for the study, permission was obtained from the Member of Parliament for the area. The researcher introduced himself to the District Chief Executive and chiefs of the communities by showing them a letter from the department before interviews were granted. I always introduced myself as a student who was undertaking purely academic work to allay fears or optimism that the research will bring a development project to the community or was commissioned by the DA or political parties. I explained to them I would be publishing the results for all to know how they manage and use water and that this might lead to future development of the water sector in the community, but not through my own undertakings.

My position as a young male student interviewing and observing people, mainly women, did not in anyway curtail me getting the data that I desired in contrast to observation by other researchers like Gilbert (1999) and Stanley and Wise (1983) who expressed concern about men doing research mostly on women. This position was based on the fact that men cannot feel how women feel. Rather, most of the female respondents were fascinated by my interest in them and tried all they could to let their voices be heard and seen as soon as they were informed of the rationale of the study.

The data generation process went well, apart from the seasonal nature of agricultural work. This gave the researcher a lot of problems in terms of time used to acquire data for the study.

I encountered problems getting both men and women to answer my questions and in observing them during the onset of the rains when some of them wake up early to go to their farms and were tired when they returned. This development did not give me adequate time to observe or ask them questions. Another problem had to do with interviewing “local” women who saw their husbands as “the embodiment of all wisdom”, referring me to them to answer my questions saying “he is the head of the house”. At times, they felt reluctant to answer questions in front of their husband. When such a development was observed the researcher quickly asked permission to come back at a later date for the interview when the husband was not around.

Another problem was related to communication in Torve. Since Torve is a small village, word about the study spread round very quickly like “a bushfire in the dry season”. Discussions with some interviewees were made known to others. Even though this is normal and forms part of the data generation process, it was felt they should first hear questions from the researcher. I tried to change the wording of the questionnaire without changing the meaning of the question. Section 3.9 below concludes this very important chapter of the methodologies and analysis employed in gathering the data on water management and use in the Akatsi District.

### **3.9 Conclusion**

The main aim of the chapter is to show the ways that data have been generated and analyzed. The majority of the data were gathered through qualitative approaches. A thread that cuts across the data generated is the politics of water management and uses both at the household and community levels. The data thus projects the voices of the unheard, especially marginalized women.

There are different opinions as to the appropriate research method to be used and the justification for using certain types of research methods to generate data (Mikkelsen, 2005). As of now, there has not been a consensus on the best way to produce an understanding of the world (England, 1997; Madge et al, 1997) by using qualitative and quantitative data to solve spatial inequality. This study agrees with Ragin (1987) that the quantitative-qualitative divide should not make researchers forget that moving beyond quantitative and qualitative strategies is the focus of the comparative method. Chapter 4 which forms the next chapter will discuss developments in the water sector of Ghana from pre-colonial to current issues.

## **CHAPTER 4 – DEVELOPMENTS IN THE WATER SECTOR OF GHANA**

### **“Water, Water Everywhere but Not a Drop to Drink”**

#### **4.1 Introduction**

This chapter reviews important developments in the water sector of Ghana in order to give a historical approach to water management in the country. Such an approach is important to embed the case study research in its historical and geographical context. The chapter is aimed at showing that the government’s water policy of reliance on boreholes for water provision in the study area differs from established local water use and management practices. This difference might lead to people not using the new water facilities and, therefore, will act as a barrier to the achievement of the MDGs. The rationale for water privatization is also discussed and I argue that if water policy and programmes are to serve the needs and interests of the poor in rural areas, as suggested by the proponents of Community Water and Sanitation Programme (CWSP) of Ghana, then water management should be privatized in these rural areas and not the urban areas. Also, Ghana’s rural population forms about 60% of the total population, where about 85.7% of poor people who live on less than \$1 a day reside (GSS, 2008). These areas should rather come under water privatization and not the urban areas. In the case of CM of water facilities under the CWSP, I argue that the policy was not designed to serve the interests of the rural population. Rather, by putting water management in the hands of communities, the government is relieved of providing quality and affordable water for the poor in rural areas.

The chapter starts in section 4.2 by tracing the genesis of the development of potable water infrastructure in the country. In section 4.3, customary water management in Ghana is discussed. This section shows that customary water laws and practices do not cover only

water use but go further to embrace natural resource conservation, pollution control, protection of catchment areas and protection of fisheries. Ghana's water sector reform is discussed in section 4.4 where it is made clear that external influences are at play in the Ghanaian economy, especially from Ghana's major development partners, the World Bank (WB) and the International Monetary Fund (IMF). Section 4.5 is used to discuss the salient points in the water sector reform. This section also discusses the various institutions formed to manage water in the country including the Water Resources Commission (WRC) and the Public Utilities Regulatory Commission (PURC).

Section 4.6 of the chapter discusses the private-public-partnerships (PPP) debate on water and how PPP is to work in the urban and rural areas of the country. Again, it is argued here that water privatization is not made to serve the interest of the poor in rural areas but to relieve the government of providing good and affordable water to the majority of Ghanaians. The water facilities constructed in Akatsi District and the modalities for their provision are discussed in section 4.7. It is shown here that plans are made for water facilities provision which were not executed because of over-reliance on donor assistance. When foreign donors are not available or willing to provide water facilities, people have to rely on 'traditional' sources. The chapter is concluded in section 4.8.

## **4.2 Genesis of Domestic Water Provision in Ghana**

During the pre-colonial and colonial days, most people in Ghana depended on natural sources of water like rainwater, rivers, lakes and ponds for their domestic water (Gyau-Boakye and Dapaah-Siakwan, 1999). According to these authors, the cleanest potable water used in Ghana before 1874 was unlined hand-dug wells, and this was used mostly by the affluent in society. Most of these water sources dried up during the dry season and were filled up with

surface and run-off water during the rainy season. People do not pay to use water domestically during the colonial and part of the postcolonial period. Even up to date, most people in rural areas do not pay to use potable water. Cement was introduced during the colonial times but was mostly used for buildings and not for improvement of domestic water sources in Ghana (Gyau-Boakye and Dapaah-Siakwan, 1999; Fuest, 2006). In Ghana's large urban centres like Cape Coast, Accra and Kumasi, water pumps, reservoirs and piped water systems were introduced after the institution of formal colonial rule in the country around 1900s. Cape Coast was the first to benefit because the colonial government resided there (Fuest and Haffner, 2007). Most government residences during colonial times, and currently to a large extent were equipped with large rainwater harvesting and storage facilities. The storage equipments were well laid and large enough for water to be available all year round.

The first public water supply system is said to have been built by the British colonial rulers in Cape Coast in the 1900s under the management of the then Hydraulic Division of the Public Works Department (PWD) (GWCL, n.d). As time passed, the scope and operation of the department increased to planning, design, construction, operation and maintenance of the water supply systems in other parts of the country especially in Accra. Treated water production started in the Weija treatment plant near Accra in 1914 with energy from generators fuelled with firewood (GWCL, n.d). A rural water development department was created under the PWD in 1948 to cater for rural water needs in the country. Major changes were undertaken after independence in 1957 with the establishment of a Water Supply Division under the then Ministry of Works and Housing (MWH) now Ministry of Water Resources, Works and Housing (MWRWH). This division was responsible for both rural and urban water supplies.

The Ghana Water and Sewerage Corporation (GWSC) was established in 1965 by an act of parliament (Act 310) as a legal public utility corporation with the objective of: providing, distributing, conserving and supplying water for public, domestic and industrial purposes in Ghana, and to: establish, operate and control sewerage systems for such purposes. GWSC, like all utility companies in Ghana was under-resourced to provide the services to all areas of the country. As the severity of the water situation worsened and water borne diseases increased in the 1970s and 1980s, especially in the north of the country, NGOs and development partners introduced hand-dug wells and boreholes fitted with hand pumps to draw water to both urban and rural areas (Gyau-Boakye, 1999). This gesture led to an increase in the number of people that used these potable water sources. However, emphasis was laid more on the urban areas as compared to the rural areas. Despite these efforts in providing potable water, the number of water-borne diseases like guinea worm increased in the rural areas especially in the northern sector of the country (Gyau-Boakye, 1999).

In sum, GWSC was the sole provider, distributor and mender of domestic and industrial water facilities to both rural and urban areas of the country from 1966 until July 1999. It was converted into a limited liability company in 1999 as part of the neoliberal agenda of the WB and IMF under an act of parliament (Act 461). Its name was changed to Ghana Water Company Limited (GWCL). The current status of GWCL is discussed in section 4.6. Ghanaians had their own methods of managing water sources before and during colonial rule and even today in the rural areas where the modern administration is less able to reach. Such methods are discussed in the next section.

### **4.3 Customary Water Management in Ghana**

Communities in Ghana have evolved rules that helped to govern the use and management of water and land resources at a local level. Water is used mainly for domestic and agricultural purposes. After colonial rule was officially established in the 1890s, other uses of water by communities for irrigation, transportation and industrial use also became paramount (Sarpong, 2004). These increasing uses of water necessitated the imposition of state legislation to govern water use. Even though the use of state legislation to govern water use became paramount, customary rules that govern water exist side by side the state laws to the present day (Burchi, 2005; Opoku-Agyemang, 2001; Sarpong, 2004).

Customary law can be said to be customs, traditions and practices of a given society that have been accepted by its members as binding on them (Burchi, 2005). Based on customary rules, Ewes regard water that is in the sea, rivers, and lakes as public property that cannot be alienated by an individual. Private ownership of water is abhorred in water scarce areas but the rules can be relaxed in areas with abundant water for individuals to use, for example a stream or pond on his/her land for private use without interference from members of the community. Thus, a person can be said to have only usufructuary rights to the water, but is not considered the owner (Eguavoen, 2007). This right does not permit private ownership of the water but the water can be used by other members of the community in times of scarcity. Just like land, water in Ghanaian Eweland is community-owned but vested in stools under the custody of traditional priests/priestesses in every community (a priest is a male traditional religious leader and priestess is his female counterpart). Stools are the symbol of authority of a chief (Torgbuiwo) in southern Ghana and these stools can be created and old ones modified when the need arises (Bob-Milliar, 2009). Normal stools that people sit on can be used to

symbolize the office of a chief. In the north, the symbol of authority is the skin. According to Bob-Milliar (2009: 543):

“chiefs are the custodians of the resources within their various communities. In resource-endowed areas, as is the case with most of the stools in southern Ghana, chiefs exploit the resources for the general good of their communities”

Customary water laws and practices in Ghana do not cover only water use but go further into the realms of water conservation, pollution control, protection of catchments and protection of fisheries (Odame-Ababio, 2003). The influence of customary practices has dwindled in urban areas as a result of formal administration and the advent of Christianity. However their influence in rural areas is still strong due to reverence for ancestors and the belief that the earth and all that is in it are spirits (Nukunya, 2003). People do not reject customary practices in the rural areas base on the reverence of ancestors.

There is also the belief that the gods of the land together with the ancestors, live in the rivers, lakes and other natural resources of the land. The current generation therefore has the responsibility to protect these resources, including water resources, for future generations. It can be observed from the issues of sustainability that, sustainable development is indeed practiced in Ghana and other African countries long before the Brundtland Report was commissioned in 1987. Since it is believed that the ancestors keep watch over the natural resources and human beings, those who do not protect them are understood to receive the wrath of the gods (Greene, 2002). The Ewes believe that the ancestors, on behalf of the earth deity, constantly keep watch to see that the land and its resources are used wisely (Nukunya, 2003; Opoku-Agyeman, 2001).

To protect the land and water resources in Ghana as a whole, people are prohibited from fetching, washing clothes or fishing at certain times of the week. Farming along riverbanks is

regarded as a taboo because they are considered as the resting place of the river gods and their children (Fuest, 2006). These rules, which differ from Ewe community to other communities but exhibit similar characteristics, are to ensure sustainable use of the resources. Sanctions like ostracism are applied to deviants by the fetish priest and priestesses on behalf of the community. It must be noted however that, it is very difficult to identify some of these features of customary law beyond domestic water use. In other words, customary water management is more prevalent within domestic water management than for transportation or agriculture. Also, as a result of population growth and the need to use fertile areas of the land for agricultural purposes, the practices have been relaxed in most communities (Odame-Ababio, 2003). A distinction has to be made here. Customary rules and regulations operate within a community or within an area of jurisdiction of a chief. For instance, the Ashanti kingdom (the largest traditional kingdom in Ghana which is made up of about four regions) has similar rules and regulations that govern water use within the kingdom unlike some areas of Eweland that have only community rules.

Rivers are used in Ghana primarily for fishing, domestic purposes, watering of animals and for backyard gardening. Customary law therefore evolved rules for the equitable use of water resources between and among communities through which a river or stream flows in Ghana generally (Sarpong, 2004). In circumstances where two communities share a water resource, rules exist on where members of each community can go to gather water for domestic use. There is no rule on the quantity that each community member can collect, but they are obliged to leave enough for others to use. The water is not expected to be used in such a way that would render it unusable by others.

There is no regulation on equipment that can be used for gathering water. The only rule is for one to gather what s/he needs and leave enough for others to use. Most often, upstream water

is used for drinking within a village and no one is allowed to use it for any other purpose than for gathering drinking water. The downstream water can be used for purposes like fishing, swimming and watering animals. Even though customary rules are relaxed in some communities in Eweland and the Akatsi District, anyone who witnesses unlawful use of water can report it to the chief or priest/priestesses and the punishment ranges between a fine of cash, alcoholic drinks or in kind which can be paid to the chief or priest/priestess. Persistent deviants can be banished from using the resource or even expelled from the community (Odame-Ababio, 2003).

Violations of customary laws are punishable if known, though it is believed that if the culprit is not known, the entire community can be punished by the ancestors, for example through drought or flooding (Greene, 2002). To curtail this mishap from happening, members of the community act as stewards of the resource. Chiefs and priest/priestesses adjudicate disputes emanating from water use through tribunals constituted by the chief and his elders. People volunteer to ensure that drinking water resources are managed for the benefit of their communities. This tradition of voluntary work is being exploited by government and its development partners where people are asked to volunteer for the management of community water supply facilities that are paid for by the users of the facility as will be discussed in chapter 6 of this thesis.

Due to the imposition of colonial rule, the influence of Christianity, the introduction of a cash economy and the dictates of modern administration, the customary practices regarding water management have been relaxed but not neglected. Until the enactment of the Water Resources Commission Act of 1996, customary water rights were by and large regarded as part of land rights in Ghana (Sarpong, 2004). That said, customary water law enjoyed constitutional status in the 1992 constitution of Ghana, but according to Sarpong (2004: 5)

“where customary law is repugnant to good conscience and morality”, it is to yield to statutory law or the common law of the land. The discussion now turns to the changes that have been made to improve water delivery and management in the country in more recent times starting with the water sector reform.

#### **4.4 The 1990s Water Sector Reform**

As can be seen from the previous section, the water sector in Ghana has undergone tremendous transformation especially after independence. The aim of government, NGOs and communities in general since independence has been to improve service delivery and increase coverage to areas that are under-served or not served at all. These changes emanated from the realization that the IDWSD of 1981-1990 of the UN was not able to provide enough water mainly to rural areas of the country (WRC and MWRWH, 2007). This failure was mainly attributed to the water infrastructure provision and management in Ghana, where central government institutions have to provide and manage facilities (Karikari, 1996; Lane, 2004). As part of the austerity measures under SAP, the provision and management of water services in rural areas was transferred from the state-owned Ghana Water and Sewerage Corporation (GWSC) to the local communities themselves (Kendie, 1993; Lane, 2004; Nyarko, 2007). This thesis argues that this is not the solution to water delivery and management in Ghana.

The major change in the water sector can be said to have been externally driven by the WB and IMF under the Economic Recovery Programme (ERP), through which subsidies on goods and services were removed under market liberalization policies. Under the auspices of the WB and IMF, a five-year water rehabilitation and development project (1990-1995) was set up with representations coming from the ministries, the private sector, NGOs, external development partners and civil society (CWSA, 2002). The private sector was accorded the

responsibility of providing water as an “economic good” because it was perceived that the “supply-driven” approach to water provision could not be sustained and a new “demand-driven” approach was encouraged (CWSA, 2002). Indeed, one can attribute the change in focus of water provision and management to changes in local government in 1988 when government functions were decentralized to the local level. Before decentralization in Ghana, local government bodies like the District Councils (now District Assemblies) were not responsible for water provision and management. The role of local government is discussed in section 5.2. The GWSC, the state sponsored institution managing water, was relieved of its function of providing and managing rural water supplies in 1994 and subsequently its name changed to Ghana Water Company Limited (GWCL).

#### 4.4.1 Ghana Water Company Limited (GWCL)

The Ghana Water and Sewerage Corporation (GWSC), which is now called the Ghana Water Company Limited (GWCL), operated as a central utility company that depended heavily on government’s financial support to operate until the Economic Recovery Programme (ERP) in the 1980s (Nyarko, 2007). Whitfield (2006: 429) noted that

“the economic decline during the late 1970s and early 1980s resulted in a severe deprivation of investment in the water sector and the loss of skilled manpower from GWSC leading to an unprecedented decline in operational efficiency and leaving one-third of the systems inoperable”.

During the ERP, government sought assistance from the WB and IMF to improve the services of the company and one of the recommendations by the Bretton Woods Institutions was for government to withdraw its subvention on water, to apply cost recovery principles, adopt automatic tariff adjustment mechanisms and allow private sector participation in water services before additional loans could be secured (Agyeman, 2007; International Fact Finding Mission, 2002; Yeboah, 2006). To this end, tariffs were increased by over 100% in 1988 to

cater for the increasing expenditure on water production (Dankwa and Nunoo, 2002). The name of the company was therefore changed to GWCL to suit its new role as a liability company. Table 4.1 below shows the changing institutional nature of water supply in Ghana.

**Table 4.1: Changing Institutional Modes of Water Supply in Ghana, 1920-2010**

Period	Name of Institution	Means of Water Provision	Areas (Sector) of Delivery
1920s-1958	Public Works Department-Hydraulics Department	Provision of water to the public under welfare State	Urban
1938-1958	Public Works Department-Rural Water Department	Provision of water to the public under welfare State	Rural
1958-1965	Public Works Department-Water Supply Division	Provision of water to the public under welfare State	Urban and Rural
1965-1988s	Ghana Water and Sewerage Corporation (GWSC)	Provision of water to the public under welfare State	Urban and Rural
1988-1994	Ghana Water and Sewerage Corporation (GWSC)	Provision of water to the public under neo-liberal principles of cost sharing	Urban and Rural
1994-Present	Community Water and Sanitation Agency	Community Management	Rural
1998- Present	Ghana Water Company Limited	Private-Public-Partnership	Urban

Source: Adapted from Nyarko, 2007.

In the late 1980s and early 1990s, the number of boreholes constructed and handed over to GWSC by Ghana's development partners and NGOs increased to about 6,000. However, the majority of these facilities turned into 'white elephants' due to a number of factors like low revenue generated by GWSC for maintenance, low recurrent expenditure, lack of staff to manage and maintain the boreholes (Karikari, 1996).

Even though some of the water points were provided by NGOs, these facilities were handed over to GWSC after construction. The water facilities experienced frequent breakdowns and some were never repaired (Bour, 2004). According to the Water Sector Reconstruction Secretariat (2002), the tariffs paid on the government's subsidized water was not enough to maintain and replace the spare parts of the aging water facilities in the country. Privatization

is seen by WB and IMF as the way forward, where the private company is expected to increase tariffs to cover costs as will be discussed in section 4.6.

In urban areas of Ghana, about 52% of households consuming water have their premises metered however, about 50% of the water produced cannot be accounted for by the GWCL due to illegal connections, poor billing systems and reliance on over-aged underground pipes that burst with even a little increase in pressure (Ofosu, 2004). Dankwa and Nunoo (2002) also point out that water supply in urban areas of Ghana before 1998 did not keep pace with the over 3% of population growth in the country leading to water shortages. The root cause of this inefficiency is the inability of the company to raise enough capital to expand its facilities to deliver quality services to its customers (Karikari, 1996). It was therefore argued by Ghana's "development partners" especially WB and IMF that the private sector should be engaged to manage the urban water services to ensure efficiency and reliability, whereas in rural areas and small towns like Akatsi, water would be managed by the communities themselves, as shown in the next section.

#### 4.4.2 Community Water and Sanitation Programme (CWSP)

The Community Water and Sanitation Division was established under the Ghana Water and Sewerage Corporation (GWSC) in 1994 by the GoG to oversee rural and small-town water and sanitation services. In 1995, this division became an autonomous institution and subsequently its name changed to Community Water and Sanitation Agency (CWSA). The CWSA was established to implement the Community Water and Sanitation Programme (CWSP). This is the new demand-driven or demand-oriented water policy in rural areas of Ghana. The CWSP was initially partly funded by the Danish International Development Agency (DANIDA) (Fuest, 2006). However, the World Bank and its development partners

currently finance the programme through the Heavily Indebted Poor Countries (HIPC) Initiative.

The programme is divided into three Phases with Phase I having two parts. The first part of Phase I of the program started in 1993 and ended in August 1997 (DANIDA, 2003). Some districts in the Volta Region, including Akatsi District, were included in the programme during this first part of Phase I. The second part of Phase I started in September 1997 and ended in December 2003. This is the Phase that the WB and IMF started to assist in rural water provision in the country. Akatsi Township's gravity-fed water system was started during part two of Phase I of the project. Phase II of the project started in January 2004 and ended in December 2008. Phase III, which started in 2009 is ongoing. The objectives of the CWSA are shown in box 4.1 below.

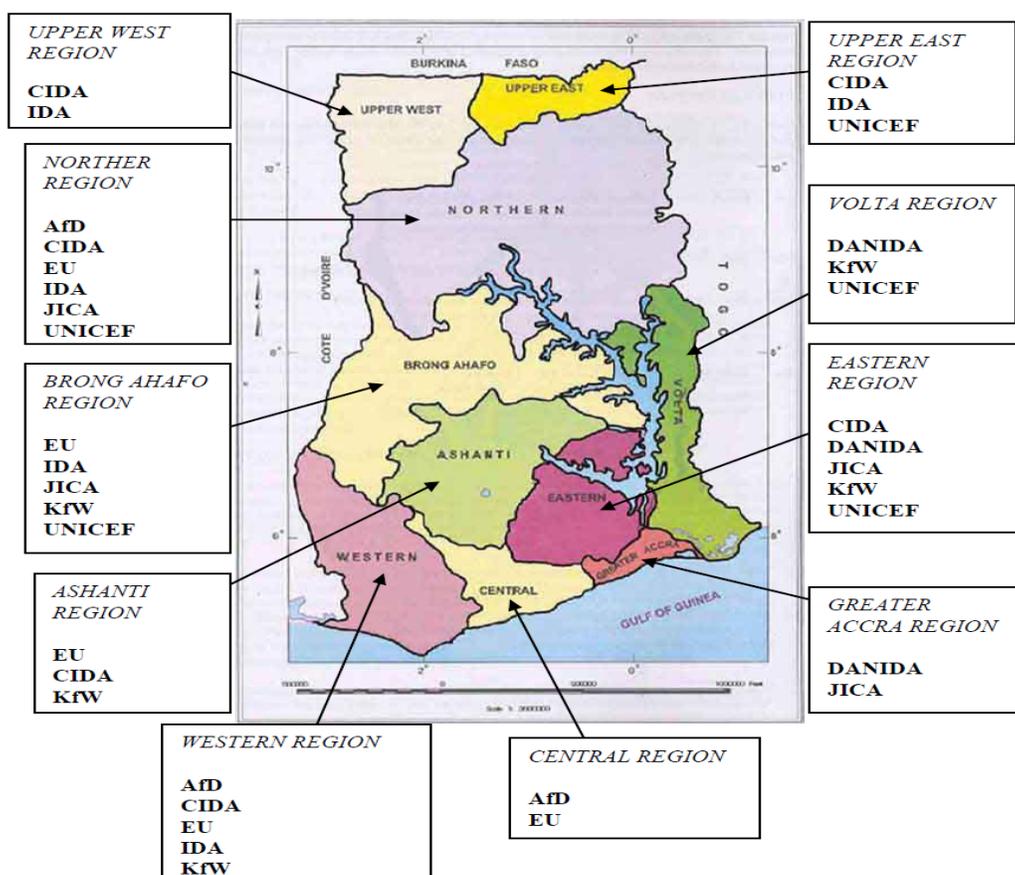
**Box 4.1: Objectives of Ghana's CWSA**

- To facilitate the provision of potable water and the delivery of sanitation facilities in a cost effective manner to small towns and rural communities in the district.
- To harmonize with stakeholders at district and regional levels the policy and guidelines for implementation of water and sanitation services.
- To strengthen the capacity of sector collaborators (RWST, DAs, POs, Consultants) to be able to provide quality service.
- To ensure gender balance in all the planning and implementation aspects of Water and Sanitation delivery.
- To strengthen the monitoring of operation and maintenance system of water and sanitation facilities in the district.
- To provide and maintain reliable information system for accurate and timely information for management, planning and progress reporting of water and sanitation activities in the region.

Source: CWSA, 2002

Ghana's CWSP is sponsored by different external donors. Figure 4.1 below shows the development partners in each of the 10 regions of Ghana.

Figure 4.1: Regional Distribution of Development Partners in Ghana's CWSP



EU-European Union; CIDA-Canadian International Development Agency; DANIDA- Danish International Development Agency; IDA – International Development Association (WB); AfD - Agence Francaise de Développement (AfD); UNICEF – United Nations Children Fund; JICA – Japanese International Cooperation Agency; KfW - Kreditanstalt für Wiederaufbau/ German Agency for Technical Cooperation

Source: Fuest (2006: 29): Demand-oriented Community Water Supply in Ghana: Policies, Practices and Outcomes.

Programmes were put in place by these partners which resulted in the rehabilitation and expansion of some regional and district capital water systems (Fuest, 2006; Fuest and Haffner, 2007). The small town and rural water systems which fall under the current study were rehabilitated and handed over to the communities to manage on their own. Emphasis was laid on community participation and management of hand pumps and piped water systems. More details of the CWSP will be discussed in section 4.7. After the creation of GWCL and CWSA to manage both urban and rural water respectively, the Ministry of Water

Resources, Works and Housing (MWRWH) in Ghana deemed it necessary to formulate a water policy for the country. This water policy is discussed in the next section.

#### **4.5 Ghana's Water Policy and Water Regulatory Institutions**

The water reforms that took place in Ghana according to the GoG were aimed at improving access to water and to bring out the best in the water related institutions in the country (van Edig et al., 2002). The then Ministry of Works and Housing (MWH) of Ghana, now the Ministry of Water Resources, Works and Housing (MWRWH), with the assistance of the WB, IMF and other development partners undertook water resource management studies to understand and evaluate problems in the water sector (Fuest, 2006). These studies recommended the establishment of an institution to deal with management issues at the international and national levels. The recommendation of the studies led to the creation of the Water Resources Commission (WRC) and the Public Utility Regulatory Commission (PURC). Sustainability of water resources was enshrined in the water policy through the management of water in an integrated manner.

The Ghana Water Policy was instituted to provide access to safe water supply and sanitation, and specifically to reduce the proportion of the population without such access by 50% by 2015, and by 70% by 2025 (WRC and MWRWH, 2007: 7). This major aim of the policy clearly shows that international principles like the Millennium Development Goals (MDGs) were incorporated therein. Some other international principles that made their way into the Ghana water policy include:

- The principle of the fundamental right of all people without discrimination to safe and adequate water to meet basic human needs;

- The principle of meeting the social needs for water as a priority, while recognizing the economic value of water and the goods and services it provides;
- The principle of recognizing water as a finite and vulnerable resource, given its multiple uses;
- The principles of improving equity and being sensitive to gender issues related to water.

The overall goal of the Ghana water policy was 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” (WRC and MWRWH, 2007: 13).

Regarding access to water, the policy points out that it is a fundamental right of all people to live without discrimination, and to have access to safe and adequate water to meet basic human needs. Ensuring a minimum water requirement for the maintenance of health and well-being is a principle. The objective of the policy is to facilitate improving access to potable water and to enhance the management and development of water resources in a manner which, as first priority, safeguards access to adequate and potable water for the entire population, particularly the poor and vulnerable (WRC and MWRWH, 2007). The GoG aims to strengthen community management (CM), operation and maintenance of facilities to ensure sustainability of the services. Sustainability is to be ensured through:

“cost recovery, taking into account the basic right to a threshold level of supplies (some for all), especially for the segment of the populace who can demonstrably not afford the full cost of supplies” (WRC and MWRWH, 2007: 16).

Critical examination of the Ghana water policy suggests that it is vague on how international objectives like good governance and the MDGs can be implemented at the local level to alleviate the suffering of the majority of the population of Ghana who do not have access to safe water, apart from recommending community participation and management. Even though the policy points out that it is a fundamental right for all to have adequate water, it

fails to identify the means by which the poor can have access to the facility in the midst of privatization and cost-sharing. It shows a double standard by preaching the human right to water when in reality poor people in rural areas and small towns have to contribute a proportion to finance water provision whilst other urban communities do not. Also, the water policy of Ghana cheats on rural and small town dwellers because it failed to identify the means by which rural water is to be provided. Further, because it is known that providing and managing these facilities are not profitable, their management was devolved to communities to sort out themselves.

There is also the problem of allocating water rights to lower level administrative organs like the District Assemblies (DA). Where by-laws are made they are rarely adhered to by water users. The Water Resources Commission (WRC) of Ghana developed water use regulations to aid the granting of water use permits to water users in the country. This regulation stipulated the investigation and use of public forums to grant licenses and permits to commercial water users. However, these regulations are never used in rural areas of the country because water use is mainly for domestic use as against other uses like agriculture and mining. The WRC is discussed in the following section.

#### 4.5.1 Water Resources Commission (WRC)

The WRC is the main institution in Ghana responsible for coordinating the different government departments and agencies responsible for water in the country. The 2007 water policy mandated the WRC to:

- Coordinate the water sector with special regard to development agencies and the exchange of data between the relevant institutions,
- Work toward the integration of all stakeholders in the sector, while respecting traditional norms and customs;

- Guarantee access to safe drinking water and sanitation;
- Supervise water quality; and
- Improve cooperation with public Utilities Regulatory Commission (PURC) - an agency that is to supervise water and electricity pricing.

Box 4.2 below shows the responsibilities of Ghana's Water Resources Commission.

**Box 4.2: The Responsibilities of Ghana's Water Resources Commission**

- to formulate comprehensive plans for the utilization, conservation, development and management of water resources in the country;
- to initiate, control and coordinate activities connected with the development and utilization of water resources, including those shared with other countries;
- to grant water rights;
- to collect, collate, store and disseminate data or information on water resources in Ghana;
- to require water user agencies to undertake scientific investigations, experiments or research into water resources in Ghana;
- to monitor and evaluate programs for the operation and maintenance of water resources in Ghana;
- to advise pollution control agencies in Ghana on matters concerning the management and control of pollution of water resources.

Source: WRC and MWRWH, 2007

The WRC uses the Global Water Partnership's Integrated Water Resources Management (IWRM) concepts to manage Ghana's water resources on a sustainable basis, rather than the fragmented way that each institution managed water before the water policy came into existence in 2007. IWRM has different meanings for different people. However, the simplest meaning can be said to be due consideration being given to the management, quality and quantity of water that is offered to people. The water can be surface, underground or rain-harvested (Adame-Ababio, 2004). The Global Water Partnership (GWP) defines IWRM as an approach that:

“promotes the coordinated development and management of water, land, and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.” (Global Water Partnership, 2000: 22).

This definition is based on the fact that water provision is the sum of a number of systems with interdependent components. Each component has a bearing on the other and should thus be managed with due regard accorded to each component. Management attention should be directed to the consideration of such aspects as domestic water supply, agriculture, fishing, transportation, hydro-electric generation, waste water disposal and water quality. Within the domestic water field, due consideration should be accorded water for income generation and for household chores.

Despite the dichotomy of opinions about the applicability of IWRM in rural areas of developing countries like Ghana, it has been widely accepted as offering the most sustainable solution to water resource management. This is based on the fact that the successful implementation of IWRM will promote health, prevent economic and environmental losses that have been identified as ingredients to poverty entrenchment (Funke et al., 2007). The citizen participation element in IWRM is also important for the achievement of the MDGs in Ghana since it involve communities managing water using their technology and knowledge. Even though, these laudable ideas of IWRM are used in the Ghana water policy, it is difficult to see how they are applied under CM in Ghana. The next section discusses the Public Utility Regulatory Commission (PURC).

#### 4.5.2 Public Utility Regulatory Commission (PURC)

PURC has been the regulatory arm of the water reform in Ghana since 1997. Through an Act of Parliament in 1997 (Act 538), PURC was established to regulate and ensure the provision of quality utility services to all consumers and potential customers. It was also mandated to

respond to stakeholders' concerns to ensure fairness, transparency, reliability and equity in utility service provision to Ghanaians.

PURC aims to regulate water, electricity and gas prices by setting rates, monitoring and providing awareness to the public on its activities. With regards to water, the commission was set up to protect water consumers in both served and un-served areas (PURC, 2005). According to the commission, its mandate is to ensure social fairness by cushioning both consumers and service providers from the vagaries of the market. The poor are also to be protected through mechanisms that ensure basic provision of water. The commission's main social policy roles (PURC, 2005) include:

- To take the lead role in the resolution of pro-poor issues in the urban water sector in line with its regulatory mandate to protect the interest of consumers, as well as Government poverty reduction objectives;
- To support any interventions which result in improved and more reliable access to water, with the ultimate goal of direct connections;
- To instruct urban water utilities to include pro-poor criteria when undertaking investments in water supply projects;
- To lead the formation of a working group of stakeholders to address the provision of services to the urban poor;
- To adopt innovative approaches to reaching the urban poor in the short term through secondary suppliers like tanker operators.

The activities of the PURC are mainly to protect consumers in the urban areas of the country because it is assumed by the water policy that rural water facilities belong to the communities. These rural communities and small towns have to regulate their own water facilities with the assistance of the DA. Akatsi Township is classified as 'rural' or 'small town' and therefore part of the CWSP. Even though, the PURC undertakes important functions as outlined above, it is not adequately resourced to protect all consumers and address all grievances brought to it. Some of the difficulties the PURC face in its attempt to protect water consumers include a weak financial base from which it is to carry out independent regulation of the utility sector. Due to this weak position, it does not conduct any

independent studies on water quality but requires the utility providers to furnish it with their own audits and information. Only in rare circumstances will it undertake its own test. These self-audits have been seen to be biased in favour of the service provider throughout the world, let alone in a developing country like Ghana (Fuest and Haffner, 2007).

A number of tariff increases were undertaken by the PURC to ensure cost recovery and to reflect the rising prices of goods and services in the world market without a corresponding increase in the wages of customers since its inception. Increased water tariffs over-burden the poor who have no access to water in their houses but instead rely on vendors who are also operating for profit. In short, the social implications of the water issues are not adequately addressed by the PURC. Public-private-partnership (PPP) was 'forced' on Ghanaians by Ghana's development partners like the WB and IMF as discussed in section 4.6 below.

#### **4.6 Public-Private Partnership (PPP) in Ghana**

Debates to date on domestic water provision and management in Ghana, labelled private sector participation (PSP) or private-public-partnership (PPP), became prominent after the completion of the water sector reform in 1998 (Agyeman, 2007; Eguavoen and Youkhana, 2008; Fuest and Haffner, 2007). According to Yeboah (2006) a number of reasons have been put forward to justify the involvement of the private sector in Ghana's water supply. The first is to cut government spending in order to safeguard the loans given by the international financial institutions like the WB and the IMF in the wake of the rising external debt of the country as discussed in chapter 2 of the thesis. The government of Ghana provides subsidies on water for the poor and vulnerable to have access to it. By removing subsidies on water, the money saved can be used on other development projects in other parts of the country. The second is the conformity to the divestiture plan the government was undertaking by divesting

the state-owned enterprises. The third reason is to instill competitiveness and a quest for efficiency in order to provide water to low income and under-served areas. Finally, through PPP, resources will be brought by the developer to improve the system. This will remove small-scale water vendors who purchase water at low cost but sell it to the poor at higher prices. By eliminating these vendors, water prices will be low for everyone including the poor. For instance, it was estimated that only 40% of the population in urban areas have access to piped water whilst a staggering 78% of the poor in urban areas have no access to piped water (Fact Finding Mission on Ghana, 2002). In order to meet the MDGs the government found it necessary to divide the provision of water in the country into two areas as discussed below.

#### 4.6.1 Public-Private Partnership (PPP) in Urban Areas

An urban area in Ghana is defined as a settlement with a population of 5000 or more (GSS, 2002a). However, defining urbanity in Ghana as far as water is concerned does not look at the population but rather at the water systems being managed either by the GWCL or the communities themselves. A community with a population of more than 20,000 does not fall under the management of GWCL but falls under the small town's water supply scheme as the case of Akatsi town shows. To this end, the CWSP defines small town water systems as a piped system serving communities of between 2000 and 50,000 inhabitants that are ready to manage their water facility themselves (CWSA, 2003b). The GWCL thus handpicks the water facilities that it is prepared to manage, while others are passed on to communities to manage, on the grounds that the communities themselves demanded to manage their own water system (Fuest, 2006). For instance, about 115 piped schemes that were serving over 5000 people were transferred from GWCL management to CM (Nyarko, 2007). The GWCL currently operates 86 piped urban water systems with an installed capacity of 737,000 m<sup>3</sup>/d

throughout the country with a supply of 551,451 m<sup>3</sup>/d (GWCL, undated). These 86 water systems in the country are what the private sector is to manage under PPP.

The privatization of water in Ghana came under various options such as lease, concessions, Build Own Operate and Transfer (BOOT), management contracts and services contracts (Agyeman, 2007; Nyarko, 2007). After heated debates and expressions of interest by both foreign firms and local counterparts through bidding, it was observed that most of the firms expressed interest in leasing rather than BOOT which was the preferred choice of the Government and its development partners (Agyeman, 2007). To this end, a number of reforms were undertaken as part of the privatization drive, again to meet the wishes of the bidders. This development, coupled with opposition generated by civil society, local NGOs like the Integrated Social Development Centre (ISODEC), who wanted GoG to manage water supply rather than the private sector, led the country to opt for management contracts (Nyarko, 2007).

A major catalyst that pushed the final management option for the PPP drive in Ghana was the conditions under the Highly Indebted Poor Country (HIPC) (Agyeman, 2007). Under HIPC, the WB and IMF made water privatization a condition of reaching decision point (Rahaman et al, 2007). Management contract was thus hastily constituted in 2004 to aid the HIPC process (Agyeman, 2007; Whitfield, 2006; Yeboah, 2006). The conditions of the management contract between the GoG and Acqua Vitens Rand Limited (AVRL) are summarized in box 4.3 below. The contract was advertised and bids were received from a number of companies including Saur and Veolia of France. In November 2005, the GoG announced that it had awarded a management contract to AVRL to provide water to urban areas under the GWCL. AVRL is a consortium of Dutch (Vitens International) and South African (Rand Water Services of South Africa) companies (Whitfield, 2006). Currently

AVRL employes about 3,000 staff. This staffs are seconded from GWCL. There are about six expatriate staff including four directors. The services that AVRL provide Ghanaians, including the salaries and allowances of the expatriate staff are funded by the WB grant (Kingman, 2008).

**Box 4.3: Terms of the Management Contract between GoG and AVRL**

- The GWCL management contract is to last for 5 years.
- The operator will inject a capital of \$250,000 within the contract period.
- GoG will be responsible for capital investment whilst the operator takes responsibility for operation and maintenance.
- The operator is obliged to provide the services in the contract area on an exclusive basis during the contract period.
- The operator will be responsible for supplying potable water; issue bills on delivery of water; receive payment from customers; and disconnect non paying customers except priority customers on the grounds of applicable law.
- If the operator fails, as determined by technical and financial auditors for reasons attributable to the operator to meet any of the service standards, the operator shall be subject to penalty.
- The operator shall have care and custody of facilities during the term of this contract.

Source: GoG, 2005b: Management Contract of Urban Water Supply

A review of the performance of AVRL shows an increase in the financial turnover of the urban water sector in the country. Labour productivity is said to increase. Water revenue has also risen with a steady appreciation in the collection ratio from 76% in 2005 to 93% in 2008.

Table below shows the performance of the AVRL.

**Table 4.2 Net Operating Surplus of AVRL**

<b>Year</b>	<b>Profit (¢)million</b>	<b>Profit (GB£ millions)</b>
2005	5.6	2.8
2006	9.0	4.5
2007	13.4	6.7
2008	14.3	7.15

Source: AVRL (2010) “Fact Sheet. Our Performance”

What remains unclear is the rationale for awarding the management of the “profitable urban water sector” to a business entity whilst the less- or “non-profitable water sector” is to be part financed and managed by communities themselves (Yeboah, 2006). The greed in acquiring wealth by foreign MNCs from already poor countries can be observed in the claim that the people of the Netherlands are vehemently against water privatization in their own country but a consortium of companies from that country has won a contract to manage water in another country (Hall and Lobina, 2004; Whitfield, 2006). This suggest that what are presented as apparently universal truths about water provision and management are in fact often socially constructed and contextual. Even after PPP of Ghana’s urban water to AVRL, the government had to step in to ensure adequate provision of water to people of Accra. Plate 4.1 shows a caption in the Daily Graphic of Ghana two years after the management contract had been signed between the government and AVRL.

Boreholes are to be sunk by the Ghanaian government to ease the water situation in Accra, Ghana’s capital city which is a coastal settlement with a lot of sea intrusion into the underground water system (Fianko et al., 2009). It is yet to be seen whether the claim that PPP, in the form of the current management contract, is in the best interests of the poor in Ghana.

A closer look at the rationale for introducing PPP into water management in Ghana suggests that services are supposed to be expanded to un-served areas and to the poor (National Coalition Against Privatization of Water, 2005). However, the management contract of AVRL does not stipulate the proportion of poor to be served. It only targets a reduction on non-revenue water by at least 5% and this can only be done through the disconnection of people who have no money to pay for water-the poor. Also, AVRL is under no obligation to

expand services unilaterally to under-served and un-served areas, but has to negotiate with the GoG for funding (National Coalition Against Privatization of Water, 2005).

**Plate 4.1: Signs of Water Privatization in Urban Ghana**



Source: Daily Graphic, 12/03/2008

This form of management contract was practiced in Tanzania with City Water Services, a subsidiary of Biwater, which failed to improve water and sewerage services. Indeed it was claimed the water system deteriorated under City Water Services management and the company was driven out of the country and made to pay £3 million to the Tanzanian Government in compensation (Castro, 2008; Waterworlds, 2008). From the discussion above, it can be argued that, PPP is not in the best interest of the poor urban population of Ghana. Section 4.6.2 below explores how PPP is to operate in rural areas of Ghana.

#### 4.6.2 Public-Private Partnership (PPP) in Small Towns and Rural Areas

The people in rural communities and small towns, (Akatsi Township is classified as small town and therefore part of the community water supply programme of Ghana) the DA, the private sector and NGOs are to share the total cost of installing and managing water facilities under Ghana's CWSP. In contrast to the urban areas, the Government provided water with no involvement of the beneficiaries or contribution to capital cost of production. According to the CWSP, a development partner is to provide 90% of the total cost of the project; the communities are to pay 5% and the DA is to cover the remaining 5% (CWSP, 2002). The communities are burdened with paying part of water facility construction and managing them at community level while the GoG, assisted by its development partners, provides and manages facilities in the more "profitable" urban areas. Also, women have been given recognition by being represented in all aspects of management of the water facilities due to their interest in using water at the household level (O'Reilly, 2006). It is yet to be documented whether this responsibility enhance their status within the community that women manages water.

According to the Ministry of Water Resources, Works and Housing the CWSP is aimed at increasing the number of rural communities with no access to potable water facilities (MWRWH, 2000). Populations with less than 500 inhabitants are to be provided with hand-dug wells and communities with populations between 500 - 2,000 are to be assisted with boreholes. Pipe borne water is to be supplied to communities with a population greater than 5,000. Rural communities with populations of less than 5,000 are to form water and sanitation committees (WATSAN) and small towns with populations between 5,000–20,000 are to form Water and Sanitation Development Boards (WSDB) to manage the water systems (MWRWH, 2000: 13).

Some pointers used by the MWRWH and CWSA (CWSA, 2003; 6) to measure access to water and water use include the provision of a minimum of 20 litres per capita of water per day to community members; the supply of year-round water from each source; a borehole to serve 300 persons and hand-dug wells to serve 200 persons per well in a community. The distance that each individual is to cover to access water is to be equal to or less than, 500 meters where possible. Women are to form around 30% of the members of these water institutions. Gender roles, the role of children and the physically challenged are to be given due recognition and protection in water management and use.

From 1994 to 2003, the CWSA, with the assistance from both GoG and donors rehabilitated 3,683 boreholes and hand-dug wells; constructed 3,216 new boreholes; and transferred 113 small town pipe water systems from state ownership (GWCL) to CM, leading to a rise in potable water coverage from 30% in 1994 to a modest 46.3% in 2003 (WRC and MWRWH, 2007: 38). There was no strict adherence to PPP under the CWSA unlike the GWCL. A national hand pump spare parts network system was established in 2001 to supply spare parts to communities (CWSA, 2001). This network was made under a public-private-partnership arrangement between the CWSA and network managers (specific people) who owns a private company and distributes spare parts to communities that could not manufacture their own parts (CWSA, 2001). Each community is to manage and operate its water system on a daily basis. The private partner is only involved on a periodic basis to carry out major maintenance or rehabilitation that WSDB members cannot undertake. The community can only enter into a contract agreement with the private partner, with the approval of the DA to carry out the maintenance or rehabilitation (CWSA, 2000).

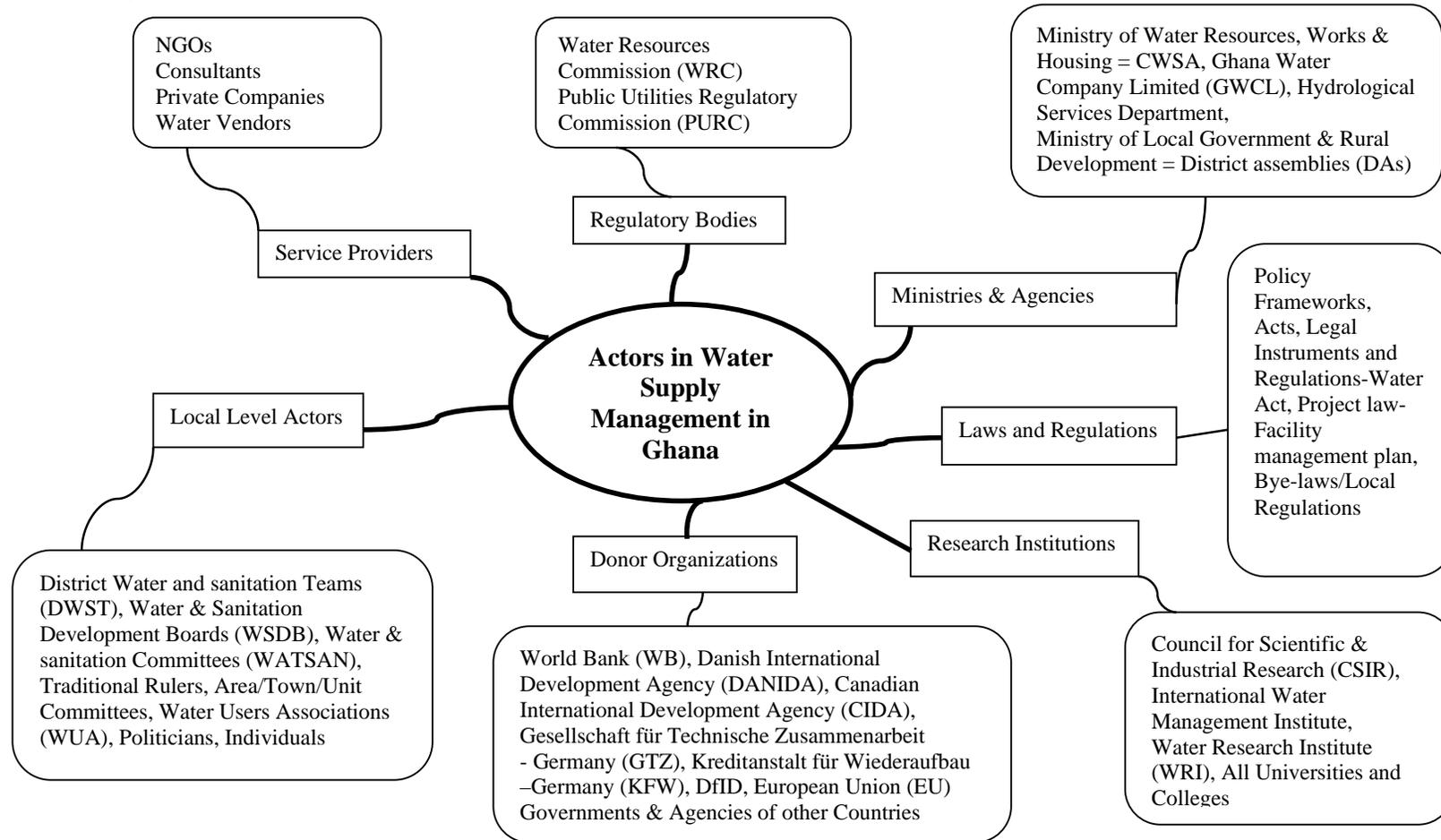
Private firms or consultants that can be involved in the operation of the water points in the rural communities can include engineers, electricians, hydrological firms and building contractors. They are to be contracted to undertake expansion or repair of existing facilities. Some communities also recruit local experts to collect and bill customers on behalf of the water boards. The contractors can only be engaged after undergoing competitive bidding with the lowest bidder being given the contract (CWSA, 2001).

Long term sustainability of water facilities requires the adoption of user fees or some form of cost recovery. Without user fees, service providers cannot recover costs to provide the service on a sustainable basis through the replacement of worn-out parts. Taxation to recover cost is also not a viable option because of the poverty situation in most rural areas. However, a form of levy is being charged by the GWCL in urban areas to be used in rural water provision (See Appendix 7). Subvention is also not possible because of the insistence by Ghana's donors like the IMF and WB that government subsidies on utilities like water should be removed as part of the conditionalities for loans. Similarly, pegging water prices at a point that is beyond the reach of consumers will drive them to use untreated water which is not conducive for the achievement of the MDGs. The World Water Vision (WWV, 2000: 34) stated that:

“where services are free, the result is inevitably politicization of the concerned agencies, inefficiency, lack of accountability, capture of the subsidies by influential groups and a vicious cycle of poor quality services.....the poor end up without access to water. They also pay exorbitant prices for inferior and unreliable services provided by unregulated vendors”.

To avoid such a situation in the CWSP of Ghana, mechanisms have been put in place for the communities to determine their own prices. Figure 4.2 shows the actors in Ghana's CWSP. The responsibility of managing CWSP was handed over by the PURC to the WSDB in consultation with DA supposedly to ensure equity and sustainability of the facilities.

**Figure 4.2: Major Actors in the Water Sector of Ghana**



Source: After Fuest et al, (2007: 44): Mapping the Water Sector of Ghana: An Inventory of Institutions and Actor

The CWSA policy initially stipulated that tariffs are set in such a way that would recover the cost of operation and maintenance, replacement and repair of parts, and extension to new areas (MWRWH and CWSA, 2003b) and the tariff on pipe systems is not to exceed the cedi equivalent of \$1/ m<sup>3</sup>.

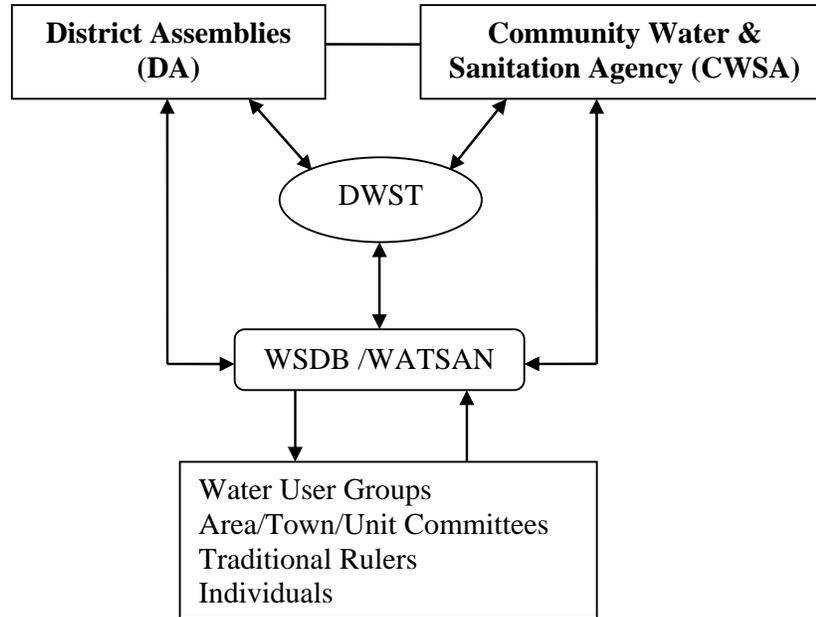
It can be seen from the foregoing discussion and Figure 4.2 above that the actors in the CWSP are many. This is a major problem for the sector. Their number, methods of delivery of services, diversity, interests, geographical origin, functions and interdependence are major concerns in Ghana (Fuest, 2006). Even though traditional rulers and all members of a community are stakeholders in water facilities management under the CWSP, the water facilities constructed by NGOs, individual donors and companies which were handed over to the communities before the start of the CWSP in 1992 have not been brought under the CWSP. This is because they are seen as community-owned and as such, should be managed by communities. The Town and Unit committees (to be discussed in section 5.2) are responsible for the management of these facilities. The Town/Unit committees are accountable to the community and not the DA. The next section reviews executed and planned water projects in Akatsi District.

#### **4.7 Construction and Management of Water Facilities in the Akatsi District**

The Volta Region CWSA started as Volta Region Rural Water Supply and Sanitation Programme (VRWSSP) in 1993. VRWSSP was later brought under the National Community Water and Sanitation Programme in 1994. During the VRWSSP, a memorandum of understanding was signed between the Danish International Development Agency (DANIDA) and the GoG to support needy rural communities with potable water in the Volta

Region and Akatsi District was one of the pilot districts of the region (ADA, 2006). Figure 4.3 below depicts how the different actors under CWSP in the Akatsi District are to relate with each other theoretically.

**Figure 4.3: Relationship between Actors in CWSP of Ghana**



Source: Author, 2010

The WSDB are to be supervised by the DA and the CWSA through the DWST. The DA and the CWSA have nothing to do with the water user groups, Area/Town/Unit committees. Rather, the WSDB/WATSAN committees are to account to the water user groups, Area/Town/Unit committees and the DWST. The water user groups, Area/Town/Unit committees also interact with the WSDB/WATSANs. The WSDB/WATSANs on the other hand can interact or provide feedback to the DWST, DA and the CWSA only when the situation demands but normally, this should be done through the DWST during the quarterly visits.

The processes by which communities in Akatsi District are selected for assistance are as follows; all communities were sensitized about the availability of the support and the conditions to be met before facilities could be provided by CWSA officials. Communities most badly affected by guinea-worm were however given priority. The CWSA officials then asked communities to apply through the DA for the water facility. At this stage, communities had to show that they have paid a “commitment fee” of 5% of total project cost into a bank account created purposely for the project. The DA and the District Water and Sanitation Team (DWST) selects qualified communities based on population and need for water. The total populations of selected communities were determined by the DWST to ascertain the type of facility necessary. After the DWST analyzed the profile of the communities, the selected communities were asked to form WSDB/WATSAN committees to facilitate the initiation, implementation and management of the project. After assessment of the readiness of the project implementation by the DA and DWST, consultants would be engaged, and project staff and WATSAN committees trained to start work on the project.

The DA is left with the choice of approving the construction of the project in consultation with other departmental heads who have been assigned roles to play for the success of the CWSP. The community members were given the opportunity to make their own final choice of where they want the facility (borehole) to be constructed and the type of facility they want. However, these condition of determining where the water facilities are to be constructed is a formality because more often than not, water is not found in the selected location of the community. The contractor and the water table can be said to be the main determinant of water point location in a community.

Different types of boreholes can be found under the CWSP in Ghana but in Akatsi District, four types are mainly used. They are the Ghana Modified Indian Mark II (GMIMII), Nira

pumps, Afridev and French Vergnet. The Akatsi District Planning Officer pointed out that, the Ghana Modified Indian Mark II and Nira pumps are mostly used in Akatsi District because they have been modified to be compatible with locally available spare parts.

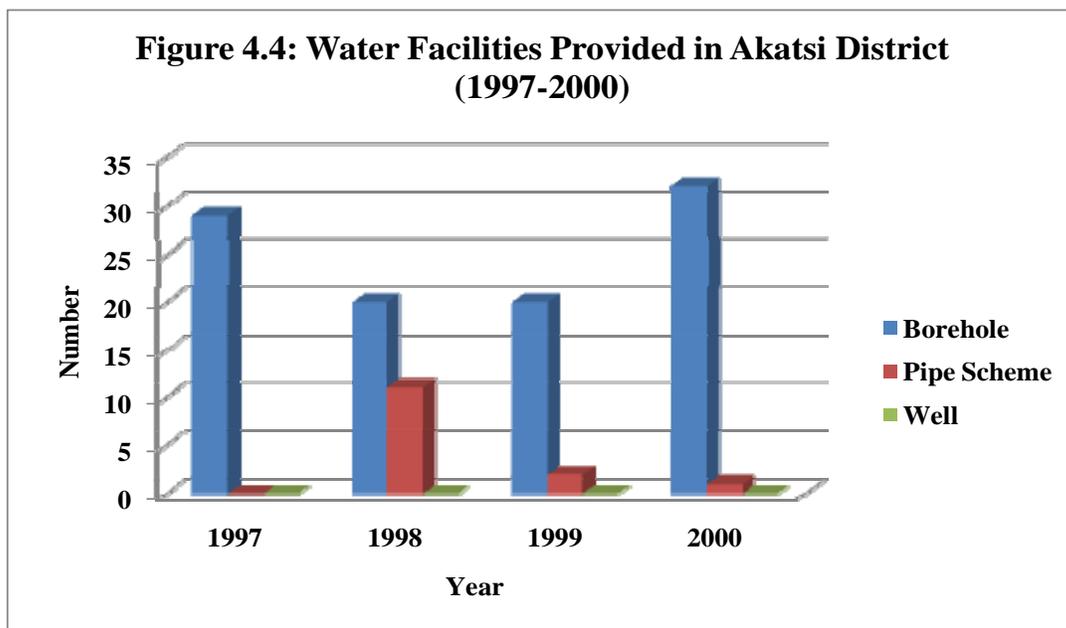
The CWSA is an autonomous body created by the GoG and its development partners to manage water facilities in rural and small towns in Ghana. The sources of money for the discharge of the functions of the CWSA include annual appropriation made in respect of the agency by Parliament; monies paid to the agency under government enactment; fees or charges accruing to the Agency in the performance of its functions; interest from investments it has made; and grants and endowments from Ghana's external partners.

The CWSA has its own project offices at the district level to provide technical and administrative support to the projects. The full-time staffs of the CWSA at the district level comprise a District Engineer, extension supervisor, environmental health assistants, technical officers and administrative officers (CWSA, 2002). Also, a community development officer was seconded from the Department of Community Development to handle the community mobilization aspects of the project. The community development officer, environmental health assistant and personnel from the Public Works Department formed the District Water and Sanitation Team (DWST).

Tenders for constructing the water facilities are published and awarded by the DA. The project implementation process starts with pre-qualification of partner organizations or NGOs and contracting firms. Through this process competent, reliable and qualified contractors and consultants are recruited for the projects. Only these pre-qualified partner organizations and NGOs can bid for the construction of a water project and the lowest bidder is awarded the

contract. These are benchmark and not strictly adhered to because the development partner recruits its contractors to work on the project.

From 2000, the Akatsi District Assembly (ADA) set ambitious targets for providing water and sanitation facilities to its population in order to propel the district to achieve the MDGs. The target is to provide potable water to 85% of the population of the district. Figure 4.4 below shows the actual number of water facilities provided in the district from 1997 to 2000 to meet this ambitious target.

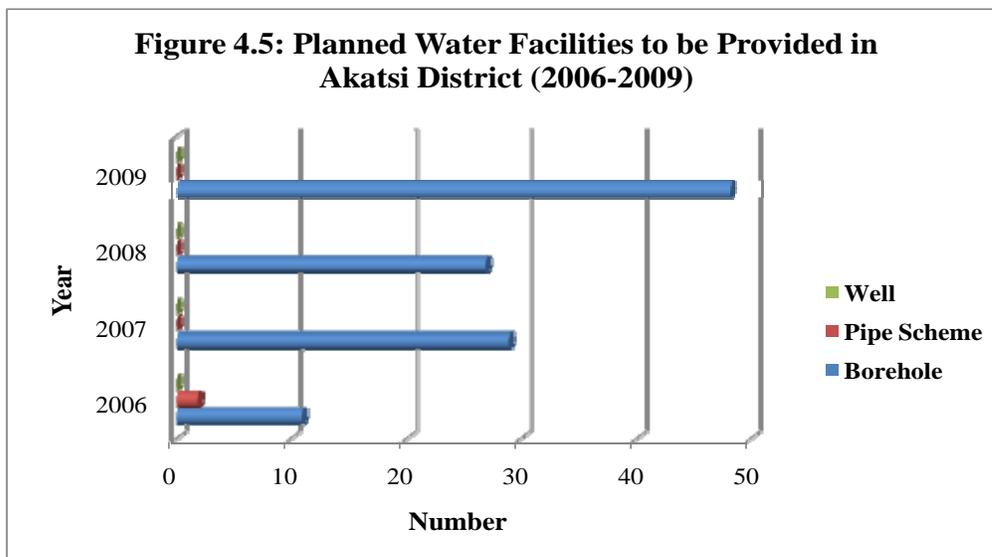


Source: Akatsi District Development Plans 1996-2000

The number of boreholes constructed in the Akatsi District in 1997 was 29 as compared to 20 for 1998 and 1999. In 2000, 32 boreholes were constructed. In contrast, only 11 piped schemes were constructed in the whole district (piped water schemes involve the laying of underground pipes from the source of water to stand-pipes and houses and are discussed in section 5.7). Even though plans have been made, they could not be implemented because of

lack of funds to put the plans into fruition. This shortfall can be attributed to lack of donor support to provide the facilities. Yet, the CWSP did not incorporate the construction of cheaper cement lined hand-dug wells in Akatsi District. Neither is rainwater harvesting encouraged apart from a facility constructed in one farming village (Avevi). Hand-dug wells are not encouraged because there are a lot of pit latrines in the communities. This argument is sound but the failure of the CWSP to encourage rainwater harvesting when rainfall in the region is above 900mm per annum (Benneh and Dickson, 1988) is not so easily justified.

One potential reason is that Ghana’s development partners will not benefit from rainwater harvesting since all materials for its construction will be generated locally. Also, profits cannot be generated by multinational companies and it might also undermine water commodification. However, rainwater harvesting is considered a potable water source that can be constructed for the achievement of the MDGs (GTZ, 2007; GSA, 2008). Nevertheless, the construction of only boreholes and pipe schemes for rural communities in Akatsi District continues as demonstrated in Figure 4.5 below.



Source: Akatsi District Water and Sanitation Plan-2006-2009

It can be seen from Figure 4.5 above that no provision was made for rainwater harvesting facilities in the district between 2006 -2009. The Akatsi District Water and Sanitation Plan outlined 102 boreholes and 1 pipe scheme to be constructed in its 2006 to 2009 plan as shown in Figure 4.5 above. The total cost of the water projects to be constructed was estimated at around £8.5 million (ADA, 2006). It is the conviction of this thesis that, if rainwater harvesting facilities are incorporated into the CWSP in the district, lower costs will be incurred on the project as against what is being spent because, the DA is not financially resourced to pay the 5% initial commitment fee required. Indeed, it will be difficult to construct rainwater harvesting or storage tanks in all houses in a community. However, if community participation is made an integral part of the CWSP, then it is best to incorporate the existing local water management strategies like rainwater harvesting in the programme.

Even though rainwater harvesting offers a source of reliable water to most areas of Ghana, it has been relegated to the background because of the development of water treatment facilities, distribution systems in urban areas and mechanised well-drilling in rural areas. Rainwater is mostly valued for its purity and softness. It almost has a neutral pH and free from chemicals unlike modern treated water facilities. It is devoid of salts, minerals and other natural and man-made contaminants (GSA, 2008). Above all the good attributes of rainwater is the fact that it has a relatively simple process of treatment. The reliance on external donors for assistance in potable water provision might derail the targets set as a short fall in donations could happen given the turmoil in global financial crisis.

The arrangement where communities pay 5% of the total cost of the construction of a water facility is based on the belief that communities feel a sense of ownership of a facility that they have paid for (Chambers, 2005; Page, 2003; Schouten and Moriarty, 2003). In situations where a community is too poor to genuinely pay their share of the total cost of the project, the

DA pay the 5% on behalf of the community from the DA Common Fund (discussed in chapter 5). Financing water projects is a problem not only for the communities who are to pay 5% of the capital cost but to the DA as well. There are arguments in Ghana as to whether DAs themselves are able to pay their 5% contribution to capital cost. Reporters from Public Agenda, a private newspaper in Ghana, point out that only 35 – 40% of DAs in the country paid their required 5% contribution to capital costs of water facility provision in a community to donors (Public Agenda, 2004 in Fuest, 2006). It therefore become problematic to insist on poor communities paying a share of the cost when it is obvious that these people are poor and hardly make ends meet. Table 4.3 below shows the amount spent on community water infrastructure in Ghana to date. It can be seen that DANIDA is the major financier of the CWSP followed by the WB's International Development Agency. The GoG comes third in water infrastructure provision.

**Table 4.3: Donation to Water Infrastructure Provision in Ghana**

<b>Contributor</b>	<b>Total (million €)</b>	<b>Total (GB£)</b>
<b>External Sources</b>		
Danish International Development Agency (DANIDA)	101,094.53	50,547.26
International Development Agency (IDA)	67,381.79	33,690.89
Agency Française de Développement (AFD)	25,752.06	12,876.03
Canadian International Development Agency (CIDA)	15,765.39	7,882.69
European Union (EU)	14,757.32	7,378.66
Kreditanstalt für Wiederaufbau (KfW)	1,699.80	849.90
UK Department for International Development (DFID)	710.80	355.40
HIPC Funds	25.60	12.8
<b>Domestic Sources</b>		
Government of Ghana (GoG)	31,113.40	15,556.70
Communities	1,121.96	560.98
GWCL	896.70	448.35

Note: £1 = GH¢2.0 in Dec 2009

Source: GoG 2007: Strategic Investment Plan, 2008–2015

Bringing these figures down to project level (Table 4.4) shows the estimated cost of providing borehole and rainwater harvesting facility, including community mobilization, hygiene education and training of managers.

**Table 4.4: Estimated Cost of Provision of Water Facilities in Akatsi Town (2009)**

Facility	Quantity	Unit Cost (¢)	Total Cost (¢)	DA Share of Funding (5%) (¢)	Community Share of Funding (5%) (¢)	Development Partner Share of Funding (90%) (¢)
Borehole	14	84,600	1,184,400	29,610	29,610	1,125,180
Rainwater harvesting facility	1	42,300	-	-	-	-
Community Mobilization	-	9,400	131,600	3,290	3,290	125,020
Hygiene Education	-	6,000	84,000	2,100	2,100	79,800
Training of Managers	-	9,400	131,600	3,290	3,290	125,020
<b>Total</b>	-	-	<b>1,531,600</b>	<b>38,290</b>	<b>38,290</b>	<b>1,455,020</b>

Note: £1 = GH¢2.01

Source: ADA, 2006: Akatsi District Water and Sanitation Plan-2006-2009

The total cost of providing boreholes in Akatsi is higher than the cost of protected hand dug-wells or rainwater harvesting facilities but these facilities are not encouraged in the district (apart from that of Avevi). It is true that the number of people served by a borehole is higher (300) than rainwater harvested facilities (households) but the maintenance of the harvested rainwater is far cheaper compared to the borehole (GSA, 2008). Also, funding for boreholes are externally generated and thus less reliable while rainwater facilities can be developed locally and this is where community participation and management becomes useful. The harvested water might also be more socially acceptable by the people for different uses like drinking and cooking

## 4.8 Conclusion

This chapter on developments in the water sector of Ghana has traced water management in Ghana before, during and after independence. The chapter contributes to a broad range of thematic and sectoral debates on water privatization and its alternatives by tracing the main

sources of domestic water before and during colonial rule. I argue that even though water was still used mainly for domestic, agricultural, transportation and to some extent industrial purposes after colonial rule, the use of state legislation, together with customary rules prevail to ensure water is provided and used by all amicably. The state institution managing water was however changed from a department to a corporation in line with development partners' request of neoliberalization.

The management of water resources in Ghana was diagnosed of being fragmented into different departments and that there was the need to bring water resource management under one umbrella leading to the development of a water policy (van Edig et al., 2002). The Water Resources Commission was therefore established to ensure that water resources are managed in an integrated manner. The PURC was established to ensure fairness in the water market by cushioning both consumers and service providers. I however argue that, even though the PURC was established to ensure fairness in the water market, the management and development of regulations governing domestic water in rural communities were left with the communities themselves to handle. Further, the PURC does not carry out its own monitoring of water quality but relies on test carried out by the service providers themselves which might not be in the interest of the public.

Even though full privatization of water infrastructure has not been undertaken in any part of Ghana as a result of the revolt by Ghanaians on water privatization and the withdrawal of foreign companies from the water sector, a management contract has been signed between the GWCL and AVRIL for the management of water facilities in some urban areas of the country. This study has shown that there are signs of financial improvement in the management of urban water but there are no signs of improvement in the quantity of water produced. Extension of water to areas not served and poor neighbourhoods is also a problem. In terms

of water management in rural areas and small towns of Ghana, CM is being encouraged by the CWSA. Under this model of water management, communities are to form WSDB or WATSAN committees to contribute part of the initial cost of the water facility provision. After the construction of the water facility, the WSDB/WATSAN manages the facility on behalf of the community by producing, retailing water to community members, and recover tariffs. The WSDB can manage the water facility on its own or enter into a partnership with other companies or individuals.

The different types of water facilities provided in the Akatsi District were discussed and it was pointed out that the target to provide potable water to 85% of the population is achievable on paper but not in practice. This is because, hand-dug wells and rain water harvesting facilities are not incorporated into the CWSP of the district even though their provision is far cheaper and in line with local water management arrangements. I opined that it is difficult for donors to ensure the provision of these local water management structures into the CWSP because funds are sourced from abroad and the donors stand to lose if rainwater harvesting and hand-dug wells are promoted. Chapter 5 which forms the next chapter will discuss physical features of Akatsi District including its location, climate, governance, water sources, land use and cultural features of the people.

## CHAPTER 5 - THE STUDY AREA

### *“The Fool Is Thirsty In The Midst Of Water”*

#### **5.1 Introduction**

This study was done in two communities, Akatsi (small town) and Torve (village) in Akatsi District, Volta Region of Ghana. This chapter describes the social and physical infrastructure of the Akatsi District. Social infrastructure here includes the structure and form of local governance, educational services, health, legal and judicial services, as well as important features of society including religion and culture that enhance people’s quality of life (Kumar, 2008). The physical infrastructure includes location, relief, climate, as well as water resources.

The chapter discuss the available water resources on which the demand-oriented community water projects will depend on, according to the international community and Ghana’s development partners. The chapter also highlights the relevant institutional arrangements, and social and cultural practices of the people of Akatsi District. The discussion in this chapter centres on social practices that play an important role in shaping people’s reaction to the new demand-oriented water facilities in the area. Based on a review of literature in the district, I point out that Akatsi District does not have large surface water resources to be developed as domestic water supply for its increasing population. Relying on underground water by the CWSP, as is currently the case is also not the way forward because the underground water is very limited and experiences intrusions of sea water, increasing the salinity of the boreholes (Banoeng-Yakubo, et al., 2003; Dapaah-Siakwan and Gyau-Boakye, 2000). Water resources apart, there are arguments by people in Ghana that Akatsi District, like many newly created districts in the country does not have sufficient social and physical infrastructure to sustain

the demand-oriented community water sector nor to attract qualified personnel to manage important public goods like water and sanitation facilities (Ayee, 1997; Amanor and Annan, 1999; Bacho, 2001; Thomi, 2000).

The chapter is divided into seven sections. The next section (5.2) discusses institutions governing the district, including the Akatsi District Assembly (ADA), Town/Area and Unit committees and Traditional authorities. Section 5.3 is used to show land use while section 5.4 discusses physical features like location, relief, vegetation, climate and water resources of the district. In section 5.5, socio-economic characteristics like settlements and poverty issues of the district are shown. The penultimate section (5.6) discusses culture and religion of the people while section 5.7 concludes the chapter.

## **5.2 Governance**

This section of the chapter outlines the various levels of interaction between the main state institutions and local political institutions. The main state institutions are the District Assembly (DA) and Ministries, Departments and Agencies. The local political institutions are Town/Area Councils, Unit Committees and Traditional authorities. All these governance institutions provide important frameworks and resources for the successful implementation and operation of water projects in the district.

### **5.2.1 The Akatsi District Assembly**

Akatsi District Assembly (ADA) is the political and administrative authority under Ghana's decentralization programme in the Akatsi District and exercises deliberative, legislative and executive functions (Ayee, 2003). As part of the Structural Adjustment Programme of the World Bank (WB) and International Monetary Fund (IMF), Ghana embarked on

decentralization of its administrative structures in 1988 (Ayee, 2003; Crawford, 2008; Mohan, 1996; Owusu, 2005). Akatsi District is one of the newly created districts in the country in the late 1980s as a result of the decentralization process. Ribot (2002: v) defined decentralization as:

“any act in which a central government formally cedes powers to actors and institutions at lower levels in a political-administrative and territorial hierarchy”.

According to Crawford (2004; 4) three main types of decentralization can be identified. They are administrative, fiscal and political decentralizations.

Administrative decentralization involves the re-location of branches of central government to local areas where power is given to locally-based officers who remain part of, and are accountable to, the central government. Fiscal decentralization transfers revenue-generating powers and financial decisions to officials at the local level or elected or central government appointees. Lastly, political decentralization transfer power and resources to sub-national authorities who are wholly independent of the central government and democratically elected by the electorate. In Ghana, “*all three types of decentralization are evident*” (Crawford, 2004: 31). The decentralization process created 110 districts in 1988. DAs replaced the previous 65 district councils. Currently, the number of DAs in Ghana has risen to 135. The aim of the decentralization process is to:

“encourage a greater degree of local autonomy and make district administration and development more efficient.... under the programme, DA (local governments) have been established and given more responsibilities and power as the highest political, administrative and development authorities in their respective areas of jurisdiction” (Owusu, 2005; 55).

At the apex of the decentralization process can be found the ten Regional Coordinating Councils (RCC) which in theory, regulate and co-ordinate the DA in Ghana. Immediately below the RCC are the DAs followed by the Town/Area and Unit Committees.

By an act of parliament, Akatsi District Assembly (ADA) is the highest political, deliberative and executive authority in the district (Local Government Act, 1993, Act 462). The ADA comprises a 54-member assembly made up of 36 members who are directly elected by the people of the 36 electoral areas of the district. In principle, these elected members are to be elected on a non-partisan basis. The rest (18) are government appointees. The sole responsibility of the DA is to ensure the overall development of the district through the formulation of programmes, preparation of budgets and promotion of development activities within the district (ADA, 2006).

DAs in Ghana rely on two major sources of revenue (Crawford, 2008). They are the DAs' common fund and their own revenue generation sources. The DA common fund is constitutionally guaranteed revenue of not less than 5% of the total tax revenue of Ghana. This revenue is administered by parliament. All districts, municipal and metropolitan assemblies receive their share of the common fund based on an agreed formula. But this revenue source is inadequate because the Ministry of Finance has mandated that 10% of the allocation for each DA should be retained as a reserve fund for emergencies and 49% is to be used in economic, education, health, water and sanitation, administration and other social services. The remaining 41% of the grant is tied to specific projects (Crawford, 2008).

The second source of revenue to the Akatsi DA is internally generated revenue. This comes from rates, fees and fines, licenses, rent and grants. Out of these revenue sources, market tolls form about 60% of internally generated revenue. The low revenue generation of the Akatsi DA is attributed to the poverty situation in the district leading to over-reliance on the DA common fund which in itself is not adequate.

An executive committee chaired by the District Chief Executive (DCE) who is appointed by the President of Ghana performs the executive and administrative functions of the DA. This executive committee excludes the Presiding Member (the Speaker) of the assembly and operates through sub-committees comprising Development Planning, Justice and Security, Works, Finance and Administration, and Social Service. The majority of members of the executive committee are civil servants from the various departments of the district administration.

These sub-committees are responsible for deliberation on specific issues and submitting recommendations to the Executive Committee for onward submission to the DA for ratification. The District Coordinating Director (DCD), a civil servant, heads the administrative arm of the assembly with the responsibility of providing secretariat and advisory services to the executive committee and the General Assembly (elected and appointed members of the District Assembly) in its planning, programming and budgeting functions. The District Planning Officer (DPO) in the District Planning and Coordinating Unit (DPCU) undertakes the planning functions of the assembly.

The new decentralization process that replaced the previous four-tier local governments structure consisting of Regional, District, Local Councils and Town and Village Development Committees in Ghana can be said to be flawed because most members of the executive committees still report and pay allegiance to their parent ministries instead of to the DA (Crawford, 2004). Indeed, financial decentralization is yet to actually happen in the Akatsi District because the DA defines budgets and programmes but does not actually have any financial power to implement them as discussed in section 4.7 of this study. In addition, funds for development projects are allocated directly to the Ministries, Departments and Agencies instead of the DA while in other cases, the development plans and projects of these

departments do not conform to the development plans of the DA (WaterAid, 2008). Undeniably, these scalar politics make it difficult for the DA to marshal financial resources to undertake development projects in the district. The challenge in delivering water facilities at the district level is that no representative of the executive committee of the DA is in charge of water facility provision.

The District Water and Sanitation Team (DWST), made up of staff from the Department of Community Development, Environmental Health Unit and Public Works Department belong to different departments and agencies of government which are not members of the DA's executive committee. Therefore, planning, budgeting and mobilising financial and material resources for water facilities provision are major challenges to water provision throughout the district (WaterAid, 2008). Even though the DA is the main arm of government responsible for CM, because it has no clear line of responsibility towards water provision, and is not backed by financial power from the central government, the provision of water facilities in the district is facing challenges. Thus, it is argued here that low priority is given to water provision under the CM of water in Ghana. This structural gap can be said to be a reason for the low priority given to water facilities provision and management in the districts. However, proponents argue that the result of decentralization rests largely on policy uniformity under the DA (Akramov and Asante, 2008), which, as discussed above, is problematic, especially for a developing country like Ghana. This is because the DAs have no relation with other local government departments.

#### 5.2.2 Area/Town Councils and Unit Committees

Below the ADA, Akatsi District has one Town council and four Area councils (as shown in Table 5.1 below) as well as 125 Unit committees. The unit committees are the representatives

from the lowest or basic unit of a settlement in Ghana. They are the base structure of Ghana's decentralization process. The Local Government Establishment Instrument of 1990 established Area councils and Unit committees to form the lowest level of the local government structure in rural areas of Ghana. These councils were created at the same time that the DAs were established in 1988.

**Table 5.1: Town and Area Councils in Akatsi District**

<b>Name of Town/ Area Councils</b>	<b>No. of Electoral Areas</b>
Akatsi/Torve Town Council	10
Avenorpeme Area Council	6
Gefia Area Council	6
Wute Area Council	6
Ave Area Council	8
<b>Total</b>	<b>36</b>

Source: ADA, 2006: Medium Term Development Plan

The town or Area councils are not independent of the District Assembly but were established as a tier below to perform the following functions among others:

- Perform the functions of town and village development;
- Enumerate and keep all records of ratable persons and properties in the district and collect revenue due to the assembly;
- Assist in prevention or eradicating public health hazards;
- Discuss local problems and take action to solve them; and
- Be responsible for the day-to-day running of the units.

Members of the Town/Area Councils are partially elected with membership consisting of 10 elected members and 5 appointees nominated by the District Chief Executive. They do not hold any executive powers in the assembly but are delegated tasks to perform by the DA. Members of the Town/Area Councils perform roles like organizing communal labour, revenue generation, public education and management of water points (Ayee, 2003). Members of the Town/Area Councils report to the DA on their activities especially by

bringing water and sanitation issues to the attention of the DA. In effect, the Town/Area councils act as intermediaries between the people and the DA, including proposal submission and demanding water facility provision. The members of these councils are not paid wages but depend on an allowance from the DA or the sale of water and income from public toilets. The Unit committees assist their area councils to carry out their duties.

### 5.2.3 Traditional Authority

Alongside the DA and Town/Area councils as outlined above is the traditional authority (chieftaincy) which in Ewe is called “*Torgbuiwo*”. One becomes a chief through inheritance or honoured by the community. This system of local governance has been in existence since before colonial rule (Boafo-Arthur, 2001; Nukunya, 2003). The chiefs are the traditional custodians of this local authority and they wield political, social, spiritual and religious authority in their areas of jurisdiction. Chiefs are not paid salaries but depend on their own sources of income. Their influence, however, diminishes as one moves towards the urban centers. Indeed, Akatsi District does not correspond to the boundaries of the traditional council, a legacy that can be attributed to decentralization in Ghana. Due to the enormous influence chiefs hold in rural and remote areas of the country, they cannot be ignored in any planning and development process (Boafo-Arthur, 2003). Chapter 232, Articles 270-275 of the 1992 constitution of Ghana guaranteed the establishment, preservation and insulation of the chieftaincy institution from undue interference from any person or authority.

The chiefs in the Akatsi District form the District Council of Chiefs for effective co-operation and adjudication of the district in their sphere of jurisdiction. Some general roles and responsibilities of chiefs or *Torgbuiwo* include:

- To resolve conflict brought to their attention by any subject within their area of jurisdiction either voluntarily or otherwise;

- Representation of their community in any spiritual undertakings;
- To advise the Member of Parliament, the District Chief Executive, the District Assembly and other government agencies, NGOs, etc. on matters affecting their areas of jurisdiction;
- *Torgbuiwo* also see to the general welfare of their subjects;
- Hold lands in trust for the dead, the living and those unborn;
- Represent their community in the absence of a substantive government appointed person;
- The chiefs of Akatsi District are very instrumental in mobilizing their communities for developmental activities (Guri, 2006).

In sum, the roles of *Torgbuiwo* in Akatsi District are legislative, executive, judicial and spiritual. Together with his court and elders, *Torgbuiwo* fulfil all these function adequately (Nukunya, 2003). These roles have waned due to the establishment of the DA but their role as the spiritual representative of the people is intact (Boafo-Arthur, 2001). Even though the 1992 Constitution of Ghana and the Local Government Act (Act 462) of 1993 made provision for two chiefs from the Regional House of Chiefs to serve on their respective Regional Co-ordinating Councils, neither the constitution nor the local government act makes provision for chiefs to be automatic members of the DAs (Boafo-Arthur, 2003). Chiefs are also not represented in the DAs or Town/Area Councils in any part of Ghana. Ayee noted that:

“the lack of institutionalized representation of chiefs in the local government structure has resulted in strained relations between some chiefs and functionaries of the DAs and their sub-district structures. In some districts, the District Chief Executive and the chiefs are not in good terms while in other districts it is the chiefs and the Assemblyman or Unit Committee members who are at loggerheads” (Ayee, 2000: 3).

In contrast, under the constitution and the local government Act of 1993, the CWSP made provision for traditional rulers to represent their communities in the WSDB and WATSAN committees at the initial stage of the programme. There was argument in the country that if the water facilities belong to the community and not the government, DA or development

partner, then chiefs, who are custodians of the land should claim ownership of the facilities in trust for the living and yet unborn. However this is not unproblematic. For example, Fuest (2006) argues that where chiefs are members of WSDB, they suppress discussion at board meetings since their word is taken as final. At times chiefs decide where water points should be located, which at times is in their favour, such as near their houses (Eguavoen and Youkhana, 2008), a problem with weak deliberation processes in the provision of water facilities. This is because of the belief that engaging in an argument with a chief is insubordination. To this end, it was decided by the CWSA that chiefs serving in the water and sanitation sector of Ghana should not accept nomination to the water boards and those already serving were asked to resign from serving in the WSDB (Personal communication with Eugene Larbi, 2007, TREND Ghana). It can be seen that, chiefs are not part of the DA structure but are part of the CM approach to water provision and management, a mark of the “communitarian” approach about how water can be provided and managed under neoliberalism.

The management of water at the community level in the Akatsi District of Ghana is in conflict with traditional rule. Currently chiefs are being barred from taking active part in the WSDB by the CWSA across the country due to the perception that they are already powerful in their communities which can undermine constructive criticism by people in the community. However, Fuest et al, (2007: 44) noted that:

“although chiefs have no formal political authority, they have power to influence or even determine the decisions regarding the management of natural resources at the local level. Family and land disputes as well as development issues can also be dealt with by the village chief and elders”.

Table 5.2 below shows the roles and responsibilities of the different local actors in water management in the Akatsi District. The table shows the complicated nature of water management in small towns like Akatsi.

**Table 5.2: Roles and Responsibilities of Stakeholders under CM of Water in the Akatsi District of Ghana**

<b>Stakeholder</b>	<b>Responsibilities</b>
GoG/Donor	<ul style="list-style-type: none"> <li>• Provide funding for the construction of water facilities in all communities of the District</li> <li>• Develop policy for the Water sector</li> </ul>
WRC/WRI	<ul style="list-style-type: none"> <li>• Monitor water facilities in various communities</li> <li>• For more details, see box 4.2</li> </ul>
CWSA	<ul style="list-style-type: none"> <li>• Provide technical assistance to WSDBs/WATSAN committees Monitor water facilities in all the communities</li> <li>• Provide capacity to WSDBs/ WATSAN committees</li> <li>• Monitor the Policy of the CWSP in the District</li> <li>• Help the DA to Implement the CWSP</li> <li>• Formulates strategies, standards and guidelines for the water sector</li> <li>• Coordinates the work of NGOs and donors</li> </ul>
DA/DWST	<ul style="list-style-type: none"> <li>• Process and prioritize community applications for water facilities</li> <li>• Provide 5% contribution towards water facility construction in all communities in the district</li> <li>• Audit Accounts of WSDB WATSAN committees periodically</li> <li>• Review/Approve tariff set by WSDBs/ WATSAN committees</li> <li>• Award contract to contractors/consultants to construct/repair water facilities</li> <li>• Monitor operation and management of WSDBs</li> <li>• Provide technical Assistance to WSDBs/WATSAN committees</li> <li>• Resolve problems emanating from CM of water facilities</li> </ul>
WSDB/WATSAN	<ul style="list-style-type: none"> <li>• Manage water facilities on a daily basis</li> <li>• In consultation with DA, Set tariff for communities</li> <li>• Maintain and provide financial records of their daily activities</li> <li>• Monitor activities of contractors recruited by DA to construct/manage water facilities</li> </ul>
Water Attendants	<ul style="list-style-type: none"> <li>• Manage the water point on a daily basis</li> <li>• Report faults to WSDB/WATSAN committees</li> <li>• Render accounts to WSDBs/WATSANs</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Monitor WSDBs/WATSAN committees</li> <li>• Report faults/grievances to DA or WSDBs/WATSAN committees</li> <li>• Provide assistance to manage the water facilities</li> </ul>

Source: Author, 2010

### **5.3 Land Use**

The main agricultural land use in the district is bush fallowing. This system of farming involves the cultivation of a piece of land for about three to four years, with the farmer moving to another plot when it becomes apparent that the nutrient content of the land is in

need of replenishment (Singh, 2006). It involves the cultivation of fields about three to five kilometers from the settlement in order to take advantage of fertile land. People also cultivate far away from settlements to prevent animals from destroying the crops. Some people also graze cattle and other livestock on a large scale. Women mainly undertake home gardening near the house. Short bush fallow cultivation is common since the people hardly apply fertilizers to their crops. The farm sizes are also small, of about two to three hectares. There is heavy dependence on bush burning to clear the land for cultivation especially during the onset of the rains, which can lead to bush fires and loss of life and property (ADA, 2006).

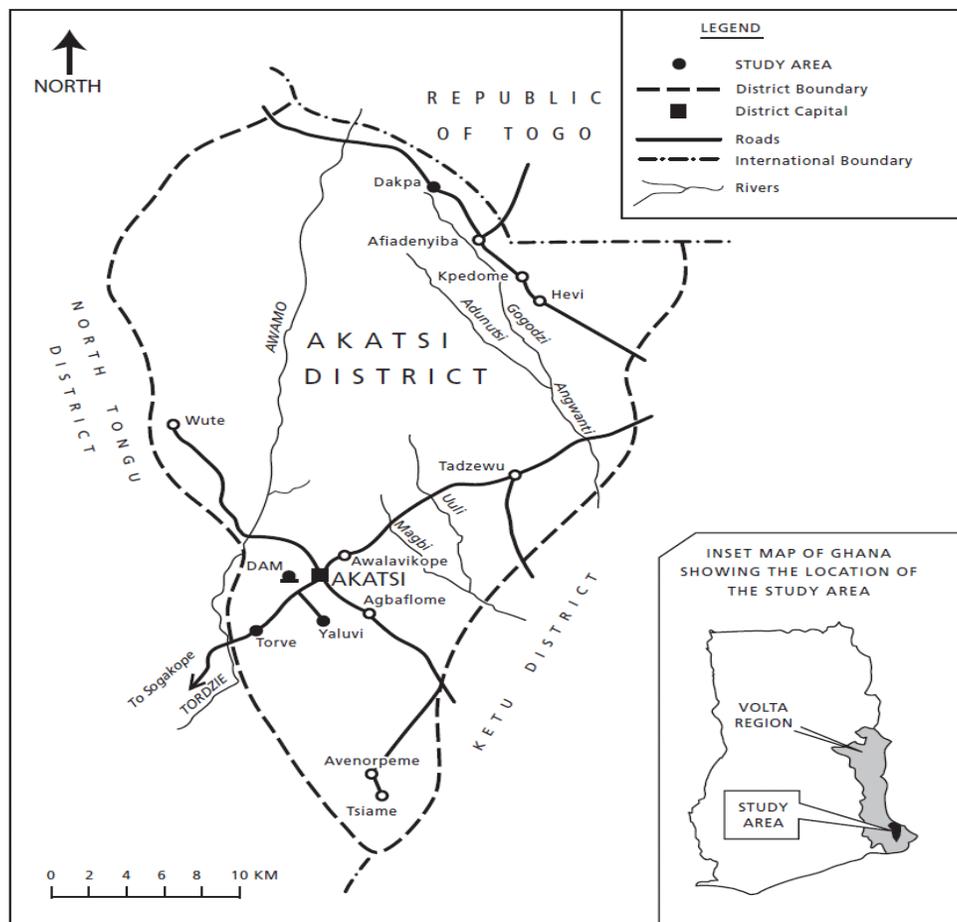
Selling of charcoal, even though not encouraged by the government, has become a very vibrant economic activity in the district due to the low provision of Liquefied Petroleum Gas (LPG) and electricity. Agriculture in the district is undertaken on a subsistence basis. The crops grown both for subsistence and for the market are mainly food crops such as maize, cassava, cowpeas, beans and pepper. Simple tools like the hoe and cutlass are the common instruments used in farming. Agriculture in Akatsi District is purely rain-fed although some with more financial resources use tractors to till the land for cultivation. Many farmers do not apply high-cost agro-chemical inputs on their crops. Animals are grazed free range which at times results in crops being damaged by the animals. Land use around Akatsi town is becoming more intense due to the economic and administrative importance of the town. Of late, agricultural activities by foreigners companies (Chinese and Koreans) are expanding around the dam constructed by the District Assembly (see Figure 4.1) to store water for use domestically. Some of the crops like sweet and chilli pepper are cultivated purposely for export to Europe. These farms use heavy chemicals like herbicides and fertilizers which easily contaminates the dam water. The DA is powerless to challenge the activities of these foreign nationals because it generates revenue from the activities of these farmers. Section 5.4 below discusses the physical features of the district.

## 5.4 Physical Features of the District

### 5.4.1 Location and Area

Akatsi District is located between latitude  $6^{\circ} S - 7^{\circ} N$  and longitude  $0^{\circ} W - 1^{\circ} E$ . It is one of seventeen districts in the Volta Region of Ghana. The district is located in the Southwestern part of the Volta Region with a total land area of about  $90.6 \text{ km}^2$  and is bounded at the south by Keta District and to the east by Ketu District. The North and South Tongu Districts can be found on the west, with Adaklu-Anyigbe District and the Republic of Togo forming the northern boundary of the district. Figure 4.1 shows the study area.

**Figure 5.1: A Map of the Akatsi District Showing the Study Communities**



Source: Akatsi District Assembly, 2007

#### 5.4.2 Relief and Vegetation

The topography of the Akatsi District can be said to be generally gently undulating with a general elevation averaging 10-50 meters above sea level. It is a low-lying coastal plain with flatland in the south and rolling plains to the north (ADA, 2006). About 60% of the total land area can be said to lie below the 100 feet contour line, rising to cover over 200 feet in the north. The vegetation of the district is made up of coastal savannah in the south and savannah woodland to the North (Benneh and Dickson, 1988). Several tree species like wawa and mahogany, extensive stands of borassu palm and other trees for house building and construction work can be found in the district. The black berry (*Velvet tanarid*) locally called “*atitoeti*” is an important economic tree that can be found in Akatsi and its surrounding villages. The vast savannah grassland of the district is ideal for irrigated mechanized agriculture and livestock grazing (ADA, 2006).

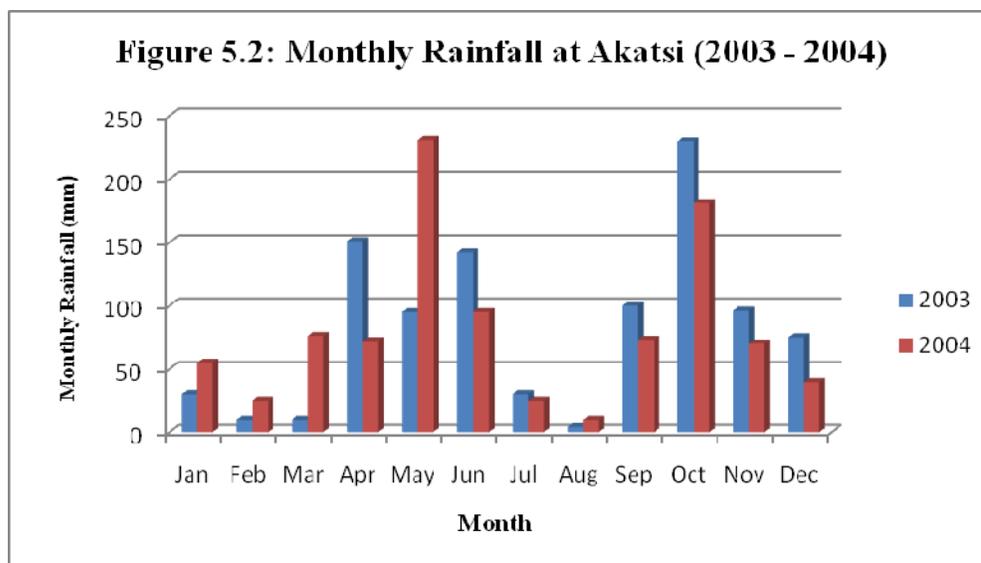
#### 5.4.3 Climate

The most important climatic elements of the district are temperature, humidity and rainfall. The Akatsi District falls within the coastal savannah equatorial climatic regime of Ghana (Banoeng-Yakubo et al., 2003). Temperatures are high and constant throughout the year with temperatures ranging between 21°C to 34°C. The lowest average monthly temperatures occur before, during and just after the major wet season between June to September.

Relative humidity is constantly high between 65% and 95%. It is high during the mornings and at night but low at noon. Relative humidity averages 75-85% during the greater part of the year but may drop below 65% during the dry months of December to March (Banoeng-Yakubo et al., 2003). Humidity in Akatsi can rise up to almost 100% at night during the rainy season.

Akatsi District, like the whole of Ghana experiences two seasons in a year. These are the dry and rainy seasons. The major dry season begins in November and extends through to mid-March. During the major dry season, the harmattan winds from the Sahara Desert blow across the district (Benneh and Dickson, 1988). This wind causes people’s skin to dry up creating uncomfortable condition for all those who come into contact with it. It is during this season that most rivers dry up. The minor dry season begins in July and ends in August.

The main rainfall season begins in April and ends in June and the minor one begins in September and ends in November. The mean annual rainfall total ranges between 900 mm and 1800 mm (Benneh and Dickson, 1988). Evaporation rates for the Ho-Accra-Keta plains, which include the study area, suggest that annual loss from open water surface may be higher than rainfall (Acheampong, 1986). Great variability exists in the annual and monthly total rainfall from year to year as shown in Figure 5.2 below. There is therefore uncertainty in the rainfall pattern however, people still manage to store water for use during the dry season.



Source: Meteorological Services Department, Akatsi, 2009

#### 5.4.4 Water Resources

The Akatsi District lies within the Keta Basin which spans the eastern corridors of the country through to the Republic of Benin (Banoeng-Yakubo et al., 2003). The basin is underlain at depth with clay, gravels and interlays by limestones. The limestones form the main deep freshwater source of the basin (Dapaah-Siakwan and Gyau-Boakye, 2000). The basin is also composed of middle tertiary rocks with permeable soils leading to low run-off. Immediately below the soil layer are cretaceous and Eocene age marine shale, glauconitic sandstone and limestone (Dapaah-Siakwan and Gyau-Boakye, 2000; Banoeng-Yakubo et al., 2003).

Borehole water is obtained from interlays of sandstones and limestones of the shallow aquifers of the Keta basin with depth between 35 metres to 300 metres (Banoeng-Yakubo et al., 2003). Because of the light textured nature of the soil in the district, rainfall and human activities like construction of soak-aways (infiltration device that allow water to drain), septic tanks, open air defecation and agricultural chemicals easily percolate into the underground water system. There is therefore direct contamination of the aquifer with these human activities (Asante and Ansa-Asare, 2001; Banoeng-Yakubo et al., 2003). The groundwater that is being pumped by the various boreholes for the communities in the district can therefore be described as polluted (Kortatsi et al., 2008; Tay, 2007). The chemical constituents of this water are discussed in chapter 7.

The most important rivers and streams in the district are the Tordzi, Agblegborloe, Wowoe, Lotor and Kutoe. All the rivers apart from Lotor and Kutoe discharge into the Keta and Avu lagoons in the south. All the rivers and streams dry up during the dry season of November to February apart from the River Tordzie, rendering it dominant in the drainage system of the

district (ADA, 2006). River Tordzie is used mainly for all household domestic chores including drinking. It is also used for farming by people who live along its banks on a limited scale. The Akatsi District Assembly with assistance from the WB/IFAD Village Infrastructure Project (VIP) rehabilitated the Akatsi dam to provide all year round water for irrigation. This dam is currently being used by firms to produce crops for Europe and America.

Akatsi District is one of the most deprived districts in the southern part of the Volta Region in terms of domestic water facilities (ADA, 2006). However, about 33% of the people in the district rely on these rivers, streams, dams and ponds for their water supply. According to the Ghana Statistical Service, only 0.6% of households in the Akatsi District rely on privately connected piped water compared to 4.6% in the region (GSS, 2003). Rainwater harvesting is the main source of potable drinking water for most of the people. People construct earthen pots to store the rainwater for use when needed.

A dominating feature of the southeastern section of Ghana is the Volta River and upstream is the Volta Lake. This lake is one of the largest man-made lakes in the world in terms of surface area (Fobil and Attuquayefio, 2003). The lake occupies about 4% of the total area of Ghana. It was created in 1966 to generate hydro-electric power at Akosombo and Kpong with a total capacity of 1060 MW<sub>e</sub>. Even though the lake does not pass through the study area, the Volta River is just 22km from Akatsi.

## **5.5 Socio-Economic Characteristics**

The social setting of the Ewe people of the Akatsi District consists of the social organisation of production, distribution, forms of social differentiation and cultural milieu (Dzobo and

Amgashie-Viglo, 2004). It should be noted here that, Eweland extends beyond the shores of Ghana to Togo and Benin. Even though the social structure of the Ewe is undergoing tremendous stress (Greene, 2002; Nukunya, 2003) due mainly to urbanization which has changed social sanctions and values in urban areas, rural people still retain some knowledge about water quality, as discussed in chapter 7.

#### 5.5.1 Settlements and Trading

The population of Akatsi District during the 2000 Population and Housing Census (no census has been carried out in Ghana since 2000) was 93,477, which was made up of 46.9% (43,843) male and 53.1% (49,634) female. The population growth rate of the district was said to be about 2.5%, which is higher than the regional growth rate of 1.8% but at par with the national rate of 2.6% (GSS, 2002a). Two main ethnic groups can be found in the Akatsi District. They are the Ave and Avenor people. These ethnic groups speak variants of the Ewe language and live side by side each other. Due to the status of Akatsi as the district capital, a number of people from the hinterland migrate to this only small town in the district in search of jobs (ADA, 2006). Also, the presence of all the Ministries, Departments and Agencies of government leads to a mix of different ethnic groups from across the country. Data is not available from the Ghana Statistical Service to show the ethnic composition of Akatsi town and Torve. However Table 5.3 below shows some major important settlements in Akatsi District.

**Table 5.3: Population of Major Settlements in Akatsi District, 1970-2000**

Localities	2000			1984	1970
	Total	Male	Female	Total	Total
Akatsi	19,017	8,940	10,077	6,428	3,908
Ave-Dakpa	2,953	1,223	1,730	1,515	2,451
Avenorfedo	1,771	817	954	2,031	1,115
Avenorpeme	1,381	583	798	1,259	1,115
Ave-Afiadenyigba	1,327	623	704	1,071	611
Hevi (Xevi)	1,163	549	614	992	772
Gefia	1,053	463	590	558	527
Dzalele	1,043	544	499	771	599
Torve	1,028	470	558	272	188
Agbedrafor	899	460	439	627	656

Source: Akatsi District Assembly, 2006-Medium Term Development Plan

Apart from agriculture, petty trading forms the next most important economic activity and employs about 18.3% of the people. Indeed, most people combine agricultural activity with commerce to make ends meet. Due to the limited income earning opportunities in the district, people migrate to urban centres. Both push and pull factors account for seasonal migration in the Akatsi District. People migrate to urban areas like Accra, Tema, Ashaiman and Ho to undertake paid employment. Some people also migrate to Akatsi, which is the district capital, mainly due to the vibrant commercial activities in the town (ADA, 2006).

Housing development in the district can be described as structurally poor. The most common materials used in buildings are clay and sand. Straw is at times used as roofing by the poor. In Akatsi and other small towns, houses are built with mud bricks (adobe) or cement blocks and roofed with corrugated iron or asbestos sheets. One can also see a few mud houses roofed with iron sheets. A mud house built with iron sheets tends to have a longer life span compared to those without iron sheets. The status of Akatsi - District Capital, together with migration and vibrant commercial activities, leads to the construction of much more durable and modern housing facilities. The major problem however is that there is no physical

development plan for all the major towns in the district leading to haphazard housing development.

The Accra - Aflao road (shown in Figure 5.1 as Sogakope - Tadzewu road) is the only main trunk road in Akatsi District. This asphalt road links Akatsi to Accra through Torve. Torve is thus a well connected community making it possible for farmers to transport their goods to markets in Akatsi and further afield. The Akatsi - Ho trunk road (shown in Figure 5.1 as Akatsi - Wute road) is not tarred, therefore very difficult to use during the rainy season. The rest of the roads are feeder roads. Farmers in the district transport their goods using head portage and vehicles owned by private individuals to the Akatsi market using these roads. Market days fall on a 5-day rotating cycle. It is during the market days that the farmers bring their produce for sale in Akatsi town. Some of the cash crops are maize, cassava, sweet potato, tomato, cow peas, yam and plantain. Goods are normally sold through haggling.

#### 5.5.2 Poverty Status

Poverty in Ghana, as elsewhere has different dimensions calling for the use of different indicators to assess it. The Ghana Poverty Reduction Strategy (GPRS) paper defines poverty as “unacceptable physiological and social deprivation. This may be caused or exacerbated by:

- lack of macro-economic stability that erodes the resources of the poor through inflation and other variables;
- the inability of the national economy to optimise benefits within the global system;
- low capacities through lack of education, vocational skills, entrepreneurial abilities;
- poor health and poor quality of life;
- low levels of consumption through lack of access to capital, social assets, land and market opportunities;
- exposure to shocks due to limited use of technology to stem effects of droughts, floods, army worms, crop pests, crop diseases, and environmental degradation;
- habits and conventions based upon superstition and myths giving rise to anti social

- behaviour;
- the lack of capacity of the poor to influence social processes, public policy choices and resource allocations;
- the disadvantaged position of women in society and;
- other factors leading to vulnerability and exclusion” (GoG, 2003; 3).

In this study, income or consumption poverty, which are lack of access to basic services like water and deprivations in human development are seen as the most important dimensions of poverty that keep individuals, households and communities in poverty thus depriving them from using improved water systems. The GSS (2008) pointed out that poverty in Ghana declined from 39.5% in 1998/99 to 28.5% in 2005/06 and a drop in extreme poverty was experienced from 26.8% in 1998/99 to 18.2% in 2005/06. The decrease in the overall poverty in Ghana led to claims that the country has “*a real prospect of achieving the poverty MDG (26%) by 2008, a first of its kind in Africa*” (WB, 2007: i). Although overall poverty declined substantially over the years, the incidence of poverty in Ghana still has a firm grip on rural and small towns where CM is being intensified.

Poverty is measured as per capita income of less than \$1 a day (GSS, 2008). Using this criterion, 67% of rural dwellers in Ghana are labelled poor compared to 34% of urban dwellers. However, rural people still have to contribute a percentage of capital to finance water infrastructure in their localities. The Ghana Statistical Services (GSS, 2003) pointed out that 60% of the people of Akatsi District are poor. Figures are not available to compare how poverty has fared in Akatsi to that of the country as a whole. However, Table 5.4 shows a summary of the ranking of poverty incidence by districts in the Volta Region of Ghana.

**Table 5.4: Summary of Overall Poverty Incidence in the Volta Region, Ghana**

<b>District</b>	<b>Overall Poverty</b>	<b>Rural Poverty</b>	<b>Urban Poverty</b>
<i>Akatsi</i>	60	67	34
Jasikan	52	55	38
Hohoe	49	54	27
Ho	45	58	20
Kadjebi	33	35	23
Keta	46	54	40
Ketu	52	60	37
Kpando	44	51	21
Krachi West	53	53	49
Nkwanta North	43	45	24
North Tongu	64	67	48
South Tongu	58	61	36
<b>Average</b>	<b>50</b>	<b>55</b>	<b>33</b>

Source: GoG (2005): Growth and Poverty Reduction Strategy (GPRS II) (2006 – 2009).

About 36% of households in the Volta Region use electricity compared to the national average of 50.6% however Akatsi District was found to be the lowest in terms of electricity usage. Only 16.9% of households in the district use electricity. In terms of water coverage, only 40.8% of people have access to potable water facilities (ADA, 2006). It therefore becomes imperative to understand the reasons why water facilities are not being provided and how those provided are being used in the district. The values attached to water together with social beliefs and religion is discussed under water, cosmology and cultural practices in section 5.6 below.

## **5.6 Water Cosmology and Cultural Practices**

The social beliefs and concepts in the Akatsi District provide the basis of the world view and how water is valued which is discussed in greater depth in Chapter 7. Values and world-views cannot be replaced but changed.

“To destroy the value orientations and world-views of people is to leave them without that sense of direction which is necessary not only for a community life but for a personal self-actualization and satisfaction” (Dzobo and Amgashie-Viglo, 2004; 3).

Groenfeldt (n.d) points out that, western countries have set the stage for economic exploitation of water and other natural resources, without looking at its sustainability and dominant spiritual perspective. This study argues that rural people’s views on domestic water sources and their qualities can provide some insight into how domestic water should be provided in the area. In Akatsi District, the predominant belief is that water has a use-value that is different from the economic value which is attached to it by water planners (Chapter 7). This use-value is individual and varies from person to person. The first thing every household in Eweland, and for that matter Akatsi District, gives a visitor, is water. Anyone who is offered water has to accept it. The rejection of water by a guest is not acceptable to a host. The best thing a visitor does when untreated water is offered is to take a sip and explain that he/she is satisfied and will drink the water later. This shows that water is highly regarded as a welcome gift.

Locally, people believe that some water sources are not to be drunk from, due mainly to the acknowledgement that they are simply not “good” (either contaminated or is of bad quality). In rural communities of the Akatsi District, restrictions exist on women going to the river to fetch water during menstruation. People are also restricted from swimming, fishing or any activity that might disturb the good values of drinking water. This important recognition of good and bad water sources is unfortunately not recognized in modern water provision in the country, as will be discussed in subsequent chapters.

The Akatsi District as a whole faces water-related challenges (ADA, 2006). Yet, cultural and spiritual understandings of water are generally not considered, misunderstood (Greene, 2002), or ignored by water planners under the CWSP in the country. Even though cultural

approaches to water bodies, the power they possess with their spiritual significance and meanings have been transformed due to environmental change, technological innovation, colonial rule, urbanization and religious influence (Greene, 2002), nevertheless many water bodies in Akatsi District are still associated with several deities. Those water bodies in which deities are said to live are revered.

Ewe people generally believe that drought is associated with the influence of bad spirits, the wrath of ancestors on the community or inappropriate behavior on the part of individuals in the community. When there is drought, rain makers are consulted to ascertain its course (Greene, 2002). These special priests can find out the cause of the drought by consulting the deities and providing remedies. The remedies provided can either be prayers to appease the spirits or for the community to change its inappropriate behavior that has caused the wrath of the spirits. The ceremonies are usually rituals, prayers with alcohol and water mixed with maize flour or oils.

Religious considerations relating to water dominate the daily life of the people of Akatsi District, if not Ghana in general. This religious belief constitutes a fundamental basis for their belief in supernatural forces. The belief is that all entities on earth, both living and non-living possess life (Kuada and Chachah, 1999). Rivers, stones, thunder, rain, trees, animals to mention a few are as alive as human beings (Greene, 2002). Ewe people believe that life is composed of two elements-spirits and matter (Dzobo and Amegashie-Viglo, 2004). Spirits are seen as existing among humans but with no flesh. They are therefore not visible to the ordinary eyes. Since they possess super-natural powers, they can inhabit natural objects including water, river and trees. This accounts for the belief that certain water sources are inhabited by spirits, the water itself does not possess such power. The Ewes believe that thunder (*so*) is a sky god and serves as the Supreme Being's executioner on earth. *So* serves

as a medium through which the high god sends messages to its people on earth through lightning, thunder and rainfall. The high God is characterized as “cool” (*é fa*). Anything that is cool by nature means it is from the high god (Dzobo and Amegashie-Viglo, 2004). Natural cool drinking water is seen as coming from God. Anything other than this is seen as impure. Culture and religion then play an important role in the daily life of the people of Akatsi District in the same way that water plays a dominant role in their lives. An understanding of use-values placed by local people on a particular water source would help in the provision of the right type of water that will be used by rural dwellers. This would also help in generating revenue for sustainable management of the facilities.

## **5.7 Akatsi and Torve Water Projects**

The Volta Region Community Water and Sanitation Agency (VRCWSA) is the regional arm of the Community Water and Sanitation Agency (CWSA) in Ghana. This agency was specifically created by the GoG together with other international development partners from other countries like Denmark, Canada, Germany, the Netherlands, UK, USA and Japan to manage the Community Water and Sanitation Programme (CWSP) of the region. The agency is responsible for the organization of the provision and management of water and sanitation related activities in the country (CWSA, 2003). The genesis of the CWSA can be traced to 1993 under the name Volta Region Rural Water Supply and Sanitation Programme but later brought under the National Community Water and Sanitation Programme in 1994 (CWSA, 2005). The main financier of the CWSA was the Danish Government through DANIDA, with counterpart funding from the Government of Ghana (GoG) (DANIDA, 2003).

The Akatsi Water Project is part of the small town water scheme in Ghana. Small towns are the first-order market and service providers for rural enterprise and development in Ghana,

and are at times referred to as District Capitals (Owusu, 2008). Small towns are seen as efficient nodal points (growth centres) for connecting rural producers to markets; centres of modernization; locating social services within easy reach; and above all, centres for transferring government policies and programmes to the hinterland (Owusu, 2008; Satterthwaite and Tacoli, 2003). In Ghana's CWSP, small towns are seen as a means of providing piped water to a district capital (small town) so that the facilities can be replicated or extended to the hinterland of the small town (CWSA, 2003b).

In line with the growth pole concept (Takoli, 2003), the German and Ghanaian government handed over a Gh¢9.4 million (£390,000) gravity fed water facility to the Akatsi community, one of the small towns in the Volta Region in April 2004. This water facility was estimated to serve about 30,000 people in Akatsi Township and its surrounding communities. The facility is part of the small towns' water facility being provided within the Volta and Eastern Regions by the German and Ghanaian governments under the CWSP. The water facility in Akatsi town is made up of six mechanized boreholes (Plate 5.1). The boreholes pump water to a central reservoir using electricity from the main national grid as shown in Plate 5.2. Water from this reservoir is then pumped through pipes laid underground to people's homes or standpipes in selected locations of the community. The facility is entirely managed by the Water and Sanitation Development Board (WSDB) based in Akatsi. The WSDB comes under the CWSA and the DA. There are about 42 public stand pipes in Akatsi Township however, only 18 are serving the community. The other 24 were locked up for reasons that are discussed in Chapter 6. The Akatsi town water facility is expected to generate revenue which will be used to extend pipe borne water to Torve and other villages surrounding Akatsi.

Plate 5.1: A Mechanized Borehole in Akatsi



Source: Fieldwork, 2008

Plate 5.2: Central Reservoir of Akatsi Town



Source: Fieldwork, 2008

In addition to these 18 public standpipes in Akatsi, there are over 10 boreholes fitted with hand pumps in the town. These boreholes were constructed by churches and other NGOs but handed over to the Town/Area/Unit Councils before the commencement of the CWSP in 1993. These boreholes constructed by NGOs and churches are being managed by the Town and Unit Councils but not under the WSDB on behalf of the community. Plate 5.3 below is a borehole fitted with hand pump in Torve.

Plate 5.3: A Borehole in Torve, With Pots Used for Brewing Alcohol (*Akpeteshie*)



Source: Fieldwork, 2008

Details on how these water facilities constructed by NGOs and handed to the Akatsi people before the commencement of the CWSP will be discussed under section 6.5. Torve's water facility, as compared to Akatsi's WSDB water facilities is a borehole with hand pump constructed by DANIDA and handed over to the Water and Sanitation Committee (WATSAN) in the 1990s as part of the pilot CWSP in the Akatsi District. However, Torve's water facility was constructed upon request by the chiefs and people of Torve to DANIDA to assist them with a potable water facility. Two boreholes were drilled in Torve but only one is serving the community. The people of Torve did not pay any money towards the construction of the borehole because the policy of 5% community contribution was not initiated at the time the borehole was constructed. This water facility was constructed to serve less than 300 people living in the community at the time. All the water facilities in Torve and Akatsi are in principle under CM. The problems people of Torve face with their borehole are discussed in chapter 7 of this thesis. Through out the thesis, reference is made to pipe water and boreholes in the study area. Some clarification needs to be made here. The Akatsi piped water system is based on boreholes with electric submersibles and pipe networks that transports water to people's homes. Due to the use of these piped networks, the water supplied to people of Akatsi by the WSDB is referred to in this thesis as piped water even though it is a borehole. Borehole, as used in this thesis refers to a tube well with a handpump in it.

## **5.8 Conclusion**

Akatsi District is one of the 17 districts in the Volta region of Ghana. The district is a sparsely populated district in the southeastern Volta Region of Ghana. Its economy is heavily dependent on rain-fed agriculture for the production of food crops like cassava, maize and beans. About 60% of the population of the district is described as poor and 67% are in the

rural areas. Akatsi is the only settlement in the district with population of more than 10,000 leading to its designation as a small town.

Like other districts in the country, traditional rule by chiefs (*Torgbuiwo*) exist side by side with the central government. The DA is seen as the provider of social amenities like water facilities to the people. The chapter has shown that Akatsi District is scarcely endowed with surface water resources, apart from the River Tordzie which is not seasonal. In the absence of springs in the district, rain water harvesting is the main source of drinking water to most of the people and this is stored in earthen pots for use.

Clearly, the natural water sources on which the people rely for their domestic purposes is not reliable, leading to the provision of potable water by both the Government of Ghana and its development partners. Water facility provision in the Akatsi District by the various project funders is aimed at reaching those communities currently not provided with potable drinking water. Some of these water facilities are being managed by the CWSA under the CWSP which was discussed in detail in Chapter 4. The piped water facility in Akatsi Township depends on boreholes as such the water is not treated in any way. Electricity cost is the major recurrent cost that the WSDB of Akatsi incurs. According to the staff of Akatsi WSDB, about 20% of their income is spent on electricity. The December 2007 electricity bill for the WSDB amounted to around 272 cedis (£13) a month (See Appendix 5). This shows that not much electricity is being used to pump water by the Akatsi water facility. Because there are no springs in the Akatsi District as a whole, most of the people depends on River Tordzie and other minor rivers and ponds for their domestic use. The next Chapter (6) will be used to discuss community participation and management of the demand-oriented community water programme in the study area.

## **CHAPTER 6: COMMUNITY MANAGEMENT OF WATER SUPPLY**

*'Rain Beats a Leopard's Skin, but it does not Wash Out its Spots'*

### **6.1 Introduction**

Following discontent with official top-down approaches to development, most development partners, as they are officially known in Ghana like the World Bank (WB), International Monetary Fund (IMF) and Non-Governmental Organizations (NGOs) see local structures in water management as competent enough to undertake the tasks that central government agencies have failed to do. Community water managers are expected to identify the poor within the community and satisfy their needs and at the same time, manage the facilities to recover both recurrent and capital expenditure of the facilities, based on the neoliberal principle of cost recovery (WB, 2001/2002; WRI, 2005). The assumption that providing facilities and leaving its management to the local users will lead to efficient and sustainable management of the facilities is put to test in this chapter.

The chapter contributes to the community participation and management literature by arguing that the management of water facilities in Akatsi and Torve by local residents is not a panacea to domestic water provision to meet the MDGs and thereafter. This is because the facility is yet to recover the 5% expenditure made on it by the DA five years after its construction, even though meager allowances are being made to water managers. As discussed in chapters 4 and 5, the DA uses its common fund to pay for the 5% capital cost of water construction in its communities, while people in the beneficiary communities contribute 5%. The development partner provides the rest of the capital cost. Also, a poor village like Torve and the poor in Akatsi are not being assisted with water, because the local water managers are instigating neoliberal principles such as demand-oriented CM of water

facilities without considering the ability of community members to get connected and pay for water. The installation of meters on all water points in the community leads to some people being denied water because targets have to be met and allowing a poor person free water will lead to others coming for free water as well.

I probe the scalar politics between Water and Sanitation Development Board (WSDB) members made up of four men and three women who are nominated from different bodies in Akatsi town and other democratically elected Town and Unit committee's management of resources. "Indigenous" citizens are people who trace their ancestry to Akatsi as against those who hail from other towns and villages but are residing in Akatsi. Identity and belonging have not previously been identified as impediment to the smooth implementation of the CWSP of Ghana. It is assumed by GoG and its development partners that anything that is community owned belongs to everybody in the community (CWSA, 2000; 2003b). However, the findings from this study are contrary to such claims. It came to light during the fieldwork that there is no consensus of opinion among "indigenous" citizens of Akatsi and people from different towns serving in the WSDB on how the facilities should be managed. It was discovered during this study that Akatsi is made up of people from different parts of the country, including people from different countries like Nigeria and Togo. These people are seen as "outsiders" who are in the community for economic reasons.

The chapter proceeds in six sections following this introductory section. Section 6.2 discusses the commodification of water in Akatsi and argues that CM of water facilities is reinforcing unequal gender relations and inequality of income between rural water managers and their urban counterparts. I point out that though cost recovery principles are being applied in Akatsi, the labour of water managers is nevertheless not remunerated. Under the neoliberal policies of the WB and IMF and its partners, rural people in Akatsi do not enjoy subsidies. I

point out that the concept of CM of water in Akatsi and Torve is becoming the new “tyranny” (Cooke and Kothari 2001). The section shows that the facility is not generating sufficient revenue to repay the 5% initial contribution which the DA paid on behalf of the community. It is further shown that even though institutions and organizations are enjoying free water because the water “belongs to the community”, poor and disabled people were denied water and those who could not pay for water are being disconnected. The section concludes with a comparison of water tariffs in a small town (Akatsi) and a city in Ghana (Tema) to demonstrate that the tariff in Akatsi is about 20% more than that of this city. This high tariff might be the reason why some people are not using the facilities.

Section 6.3 discusses the assistance given to community water managers after the facilities have been handed over to them by the donors (DANIDA and German Technical Cooperation-GTZ). Issues discussed here include monitoring and evaluation of water facilities, coordination and facilitation of WSDB members, training, technical and finally financial assistance given to ensure the sustainability of water facilities. Clearly, some form of post-construction support is given to communities to manage their water facilities to ensure sustainability. However, the paradox of water commodification can be seen where members of the District Water and Sanitation Team (DWST) entrusted with the general monitoring and evaluation of water infrastructure do not belong to a single department but are drawn from various departments who are not executive members of the DA. This stifles dissemination of information to the executive members of the assembly. Their workload also increases yet, they rely on allowances paid by the DA. This allowance is not consistent with the workload and is not paid on time. Training of water facility managers is also a problem and I argue that the demand-oriented CM of water facilities in Akatsi and Torve expect people to render their labour for the management of the water facilities for free but does not want to incur the cost of training them.

A community is said to have sustainable access to water when water flows in the tap or when water is available to be used by people for “*more than 8 hours of the day*” (GTZ, 2007; 25). On sustainable access to water to achieve the MDGs, I point out that the number of hours water flows in the taps in Akatsi is not sustainable based on the definition of “sustainable access to water” defined by donors like GTZ (2007). In this light, people did not consider themselves to have benefitted from the water facilities provided, as discussed in section 6.4. The cost of water in Akatsi is driving people to continue to use other sources of water like hand-dug wells and harvested rainwater. People in Torve on the other hand do not use their borehole mainly due to its taste. The good side of the CWSP is that stand pipes in Akatsi town enable people to leave their houses and fraternize. Some even deliberately delay in taking their water home.

I argue in section 6.5 that because members of the WSDB are nominated by selected groups within the community, they do not feel obligated to seek the interest of the poor. Neither are they accountable to the community but to the DA. Most of these nominated members are not poor thus they do not know what poor people feel when they have to use their scarce income on water. Furthermore, evidence suggests that women WSDB members do not champion the interest of the poor because men dominate in all aspects of decision making in the WSDB. Accounts are also not rendered monthly by the WSDB as demanded by the facilities management plan. The DA’s apathy in demanding members of the WSDB render accounts monthly to it stems from the fact that it is inadequately resourced to engage auditors to audit the accounts of the WSDB. Also, the DA expects the CWSA to do it, and the CWSA expects the community to do it leading to the account of the WSDB not being audited for over five years.

Section 6.5 also assesses ownership of water facilities in Akatsi and it shows that most people do not know that the water facilities belong to the community. As such they are not interested in the affairs of the WSDB. The section also argues that the indisputable emphasis on community participation in the form of payment of 5% initial capital cost of the facility to ensure a sense of ownership of the facility is not conducive to communities like Torve. People in this poor community find it difficult to pay the initial 5% “commitment fee” for the construction of water facilities because of their poverty status. Where they do, the facility is not provided based on the policy that existing projects in small towns should generate revenue to extend facilities to neighbouring localities. I argue that the policy is inherently flawed because it perpetuates the existing unequal spatial distribution of water infrastructure between poor rural communities and their urban counterparts. This is driving poor people to use other sources of water. In sum, the chapter discusses commodification of water yet water managers are being paid stipends for the job they do yet, its difficult to raise money to pay for the capital cost of the initial water provision. This stems from the fact that government agencies and departments do not pay for water they consume. Also, the district WSDT members are not part of the executive arm of the DA to push for the needed recognition of the importance of water provision. Even though, post construction support is given WSDB/WATSAN committees, scaller politics within the communities does not promote sustainability of the water facilities in the communities.

## **6.2 ‘Commodification’ and Remuneration**

The issues discussed in this chapter are important issues that emerged from the data gathered in Akatsi and Torve. I point out that, even though people pay to use the water constructed for them under CM, labour used in managing the facilities has not been commodified. These points are demonstrated through the issues of allowances, cost recovery and by comparing

water tariffs in a small town (Akatsi) and that of an urban area of Ghana to show that the cost of water in Akatsi is relatively high.

#### 6.2.1 Token Remuneration for Community Water Managers

This section discusses mainly the management of the water facility in Akatsi only. Torve is not used in the discussion here because the borehole is not being utilized. This will be discussed in chapter 7 as part of the use-values of water. The activity of the WATSAN committee in Torve can be described as dormant in terms of management of the water facility and remuneration given to the facility manager. However, its activity in the sanitation sector is vibrant.

Arguably, incentivizing managers of natural resources is very important to shape individual and collective action to perform better (Seabright, 1993). However, the prevailing neoliberal “economism” which is the dominant ideology under Ghana’s demand-oriented community water management has conveniently attributed to rural dwellers a common peasant rationality of subsistence and voluntarism (Scholte, 2005). Community water supply have been commodified (Page, 2005) through the use of meters, monthly payment of bills or “pay-per-bucket fetched” at the public taps however, water management activities have not been commodified to the same extent.

Specifically, there are currently different levels of “allowances” paid to members of the Akatsi WSDB (three women and four men) who are effectively undertaking the full-time job of managing a community water facility. The lowest-paid member (a woman) takes home ₵60.00 (£30) a month whilst the highest paid member (the chairman) receives around ₵78 (£39) a month (fieldwork, 2008). These payments can be contrasted with a ₵250 (£125) paid

monthly to a teacher at the local authority school in Akatsi. This clearly shows the salary difference between members of WSDB and other workers in Akatsi.

Also, women in particular are mainly responsible for water management due to their position as major users of water (Ivens, 2008). They are often found among the rural disempowered poor and yet their participation in managing water facilities is seen by the CWSP as crucial for water system efficiency and sustainability. To continue doing this job demands equal payment for the services they render to the community. For it is argued here that, it is only through equal payment for services rendered by the poor, including women, that assets can be built to reduce poverty. One female member of the Akatsi WSDB resigned due to time and financial reasons:

“I spend most of my time sitting in the office of the water board doing nothing apart from taking instruction from men to go and demand payment from privately connected customers. What is more, I am tired of taking abuse from defaulting customers who unfortunately are men. I prefer to work on my own petty trading to being in the office of the water board for that small allowance” (WSDB member 4-Female, 2009).

This woman further argued that, since the water facility is a business, she expected to be paid for the services she rendered to the community. She resigned from being a member of the WSDB upon realizing that she is not being paid well. Ghana’s demand-oriented community water programme acclaimed the importance of local management, but is not willing to pay adequate remuneration for the services rendered by the poor or “disempowered”. Under the same neoliberal policies of the WB and IMF, rural people no longer enjoy subsidies on agricultural inputs, have to pay high transportation cost to move their farm produce to the market, pay for health services, pay for education and pay for toilet, electricity bills and water. The female member of the board who resigned is pointing out that asking people in rural and small towns to volunteer in managing the same facilities for which foreign and local experts are paid huge salaries in the urban centres (see chapter 4) is not conducive to

empowering her financially. In a sense, a broader point is being made here on the morality and selectivity of the commodification of water. Another member of the Akatsi water board indicates that:

“it is a prestige to be a member of the WSDB to make sure that water flows in the taps yet being a member of the board alone will not feed my family” (WSDB member 3=Female, 2008).

This revelation is in sharp contrast to the assumption that women will participate in institutions managing water for the good of their community (CWSA, 2003) but in line with Cleaver’s (2001; 53) observation that participation is now a matter:

“of exclusion as well as inclusion... a strong emphasis on the participation of individuals and their potential empowerment is not supported by convincing analysis of individual positions, of the variability of the cost and benefits of participation, of the opportunities and constraints experienced by potential participants”

Women’s participation in the WSDB of Akatsi cannot be said to be a means of encouraging women to take up positions of authority in the community because it takes from them their time in doing other income generating activities. Income earned from undertaking income-earning activities is a major requirement for poverty reduction. Indeed, the participation of women in the WSDB under the demand-oriented water policy in the Akatsi District is disempowering rather than empowering people, women in particular.

In Akatsi Township itself, the main role women play in water facility management is as public pipe attendants, a role a woman said she enjoyed doing because “*it provide her with income*” (PPA 2, 2008). It is of interest to note that water meters are installed by the WSDB on all public stand pipes and privately connected households in Akatsi. Volumetric consumption is used to bill both privately connected households and public stand attendants. Thus, selling water at the public stand pipe has become a lucrative business. Even though it is difficult to ascertain the profits made by public pipe attendants because they earn income from selling other petty products like fruits, all the people interviewed pointed out that they

make enough profit to make ends meet. The amount charged by the public pipe attendants is determined by the WSDB of Akatsi in consultation with the DA. However, the managers are paid meager allowances due to cost cutting measures. The strategy of paying meager allowances to the WSDB members shows that cost recovery principles is being applied as spelt out under WB and IMF conditionalities in rural and small towns in Ghana. However, the labour used in rendering the service is not commodified.

### 6.2.2 Low Cost Recovery

Even though WSDB members are paid low allowances by the CWSP, recovering the cost incurred on the water facility is still a problem 5 years after opening the facility. About 3 to 5 years is the economically viable lifespan of a borehole after which depreciation takes place and high costs are incurred on aging equipments (WatSan Consult, 2008). It was discussed in chapter 4 of this study that the GWCL was not meeting its financial obligations in terms of recurrent and capital cost to sustain the urban water sector of the country leading to the involvement of a consortium of foreign companies (AVRL) to manage the facilities in partnership with GWCL. Yet, Ghana's CWSP expects small town water facilities to be managed by "non-professional" staff to meet recurrent and capital costs of the project (CWSA, 2003b).

The water tariff in Akatsi Township has been pegged at ¢0.83 per cubic volume of water consumed since 2004. Even though data is not available on the income and expenditure of the Akatsi WSDB (the accounts of the WSDB were being audited at the time of the study), the chairman of the water board informed this study that the WSDB is only meeting the recurrent expenditure but not the capital expenditure of its operation. For instance, the chairman of the WSDB points out that only ¢3,000 (£1,500) of the initial ¢20,000 (£10,000) the DA paid on behalf of the community (the 5% community contribution) was paid by the WSDB to the DA.

Based on the fact that, only 15% (¢3,000) of the initial capital that the DA paid on behalf of the community was paid by the WSDB to the DA after over five years' operation of the water facility suggests that CM of water facilities is not the solution to sustainable water provision in the district. This is because the water supply equipments are getting old and needs to be replaced. This means the long term sustainability of the Akatsi water supply project is at stake even though the chairman points out that “*the WSDB have about ¢8,000 (£4,000) in the bank to cater for emergencies*” (WSDB member 1, 2008).

A major problem the Akatsi WSDB is facing in terms of revenue mobilization to sustain the water facilities is the nonpayment of bills as shown in Table 6.1 below.

**Table 6.1: Arrears Owed to Akatsi WSDB**

<b>Debtor</b>	<b>Amount in Ghana Cedis (¢)</b>	<b>Amount in Pounds (£)</b>
Health Centre	¢21,000.00	£10,400.00
Training College	¢12,000.00	£6,000.00
Secondary Technical School	¢90,000.00	£45,000.00
Ghana Education Service	¢16,000.00	£8,000.00
Individual Consumers	¢89,000.00	£44,500.00
<b>Total</b>	<b>¢228,000.00</b>	<b>\$114,000.00</b>

Note: GH¢2.00 = £1

Source: Fieldwork, 2008

Table 6.1 above shows that the 5% initial cost the DA paid to the donors on behalf of the community could have been paid back to the DA if all these arrears owed to the WSDB are paid. DA is however not assisting the WSDB to institute legal action against these defaulters to recover these costs. One can attribute this lack of support from the DA to institute legal action against defaulting ‘customers’ of the WSDB to the fact that the Akatsi water facility in principle belong to the community. As such the DA has no obligation to institute legal action against defaulters on behalf of the WSDB. Meanwhile the WSDB is not a legal entity that can sue and be sued as such it can not take defaulters to court. If the DA has the regulatory

responsibility of supervising the WSDB and is legally entitled to engage lawyers to issue summons to defaulters, it could not back the Akatsi WSDB because majority of the defaulters are state institutions.

The nonpayment of water bills by both government and other organizations is a problem across the whole country (Bacho, 2001; Fuest, 2006). Nyarko (2007:157) reported that:

“only 10% of the service providers examined were recovering all the operational cost and most of the capital cost. Majority (90%) of the systems were recovering only the operational expenditures, which means the systems are very susceptible to breakdowns, as revenue from the system cannot fund some repairs”.

The high rate of default by institutions in paying water bills can be attributed to the centralization of funds used by Ministries, Departments and Agencies in Ghana. Even though water provision and management has been brought to the local level by the government through decentralization and CM, the payment for utility bills by these public institutions has not been decentralized. In other words, budgets of Ministries, Departments and Agencies are still centralized. The institutions therefore do not have the money to pay for the water they consume at the local level. The non-payment of water bills by government institutions buttresses the case made here that CM of water resources in the Akatsi District is primarily aimed at relieving the government from providing essential services for the people and therefore is not the panacea to water provision in the district. This data suggests that the government hides behind CM to indirectly benefit from these services that has been provided to the people or through NGOs. The burden of generating revenue to manage the water facilities therefore rest on the meager tariffs paid by people in the communities.

The lack of payment of water bills by government agencies in Akatsi District can also be attributed to local politics or conflict existing in the community on the ownership of the water facilities. Since the water facilities are labelled by the government as belonging to the

community, the defaulting institutions find a fertile ground not to pay for the use of the facilities since they are working to serve the community. Base on this trajectory of thinking, anything that belongs to the community belongs to no one as such they are not obliged to pay for the water they use. On the other hand, because the DA paid the 5% initial community contribution to capital cost on behalf of Akatsi Township, the defaulting institutions feel the facility belongs to the government which is represented in the district by the DA.

The DA promised to assist the water board to serve legal notice to the defaulters but could not do so because of the legal loophole mentioned above. Logically, any legal means to recover arrears is expected to come from the WSDB which is not legally empowered to sue and be sued. Individual or privately connected consumers who could not pay for the water they consumed were disconnected by the WSDB but institutional defaulters like schools, and health centres still continue to enjoy the facility. They could not be disconnected because the WSDB is not independent but rely on orders from the DA. The chairman of the WSDB put in plain words that:

“a letter was sent by the WSDB to defaulting privately connected households to pay the money or be sent to court. A bench warrant was served on some of them leading to the recovery of about 50% of the arrears owed by the private connectors. The DA however warned the WSDB to desist from issuing such letters to defaulters as such I also became fed-up asking defaulters to pay leading to the huge pile-up of arrears” (WSDB member 1, 2008).

The chronic institutional failure to pay for water consumed, especially by public sector agencies and departments led to the failure of the GWSC (Karikari, 1996) and this is being repeated with the WSDB. This makes meaning to Castree’s (2003) assertion that the commodity status of a thing, object idea, creature or person is not intrinsic to it but assigned to it. There will not be problem of institutions failing to pay for the water they consume have water management in small towns been transfere to private management as being advocated for in urban areas of Ghana. The various administrative, regulatory, technical and economic

policy instruments available for the management of water supply systems as espoused by Chettri and Venkatesan (1983) does not apply to water management in Akatsi. It follows then that the imposition of decentralization and CM is not sufficient justification for better water service provision rather there are broader politico-economic processes at work to relieve government of the burden of providing essential services to its people. One can argue that it is not a government conspiracy to push water management to rural communities since it did not push for water commodification but it was forced on it by donors like the WB and IMF. However, government is now benefitting.

### 6.2.3 Comparison of a Small Town and a City's Water Tariff

According to the CWSP, water facilities provided to communities are to be maintained through the tariffs set by the communities themselves on a pay-as-you-fetch basis or as determined by the community as part of the cost recovery mechanism and for the replication of facilities in other areas. This is aimed at replicating water facilities in rural areas to achieve the MDG of halving the number of people without sustainable water supply in Ghana. The CWSA in its strategic investment plan aimed to cover about 85% of the rural population in Ghana with potable sustainable water facilities by the year 2015 (CWSA, 2005). However, the price paid by people in a small town like Akatsi for untreated pumped borehole water labelled "pipe water" is far higher than that paid by residents in larger urban areas. Here I take the example of Tema, the most industrialized city in Ghana, for comparative purposes only.

It was estimated that in developing countries, some poor households pay up to around 25% of their household income on water (Barlow, 1999). Also, the Human Development Report (UNDP, 2006) points out that the water supply in some communities in developing countries

is unreliable, forcing poor households to rely on informal services like water vendors which increase the proportion of income spent on water. In the case of Ghana, it is not just the poor in big cities that pay more in comparison to the better-off. The small town dwellers, who are also labelled as poor (GSS, 2008) and who have no sustainable access to water, are also paying more for water as shown in Table 6.2. This is because of the policy that WSDB/WATSAN committees in rural areas, in consultation with their DA, should decide on their own water tariff (PURC, 2005) in consultation with DAs.

**Table 6.2: Comparison of Water Tariffs - Tema (City) and Akatsi (Small Town), 2007**

Customer Description	Water Consumed (m <sup>3</sup> ) Per Month	2007 Piped Water Tariff GH¢
<b>Tema</b>		
Domestic Consumer	0-20 m <sup>3</sup>	0.66
	Above 21m <sup>3</sup>	0.91
Commercial	Flat Rate	1.10
Public Institutions/Dept	Flat Rate	1.10
<b>Akatsi</b>		
Domestic Consumer	Flat Rate	0.83
Others	Flat Rate	0.83

Note: £1 = GH¢2.01

Source: Compiled from Akatsi Water Board and GWCL, 2009.

As discussed in chapter 4, water tariffs for urban consumers are proposed by the Ghana Water Company Limited (GWCL) and submitted to the PURC for approval but the rural areas have to determine their own prices at public fora. In reality the WSDB fixed water tariffs in Akatsi in consultation with the DA. The PURC admonished that, the overall cost of water production and distribution should be calculated in order to arrive at the tariff to be fixed (PURC, 2005). Some of the cost elements that are used to calculate the water tariff for both urban and rural areas of Ghana are: cost of materials and chemicals for water production; assets and equipment maintenance costs; energy costs; employee salaries/allowances; administration expenses; future expansion projections and in urban areas,

2% levy for rural water supply (Nyarko, 2007; Siabi and Tambro, 2008). The 2% levied on urban water consumers is paid to the central government by the GWCL which is then used to finance the construction of rural water facilities. The Akatsi WSDB set the water tariff in 2004 and has not reviewed it since. However, a closer look at the rate shows that people in Akatsi pay more for water than people in Tema, an industrialized community with access to waged labour (Asabere, 2007; TDC, 2002).

It can be seen from Table 6.2 that, the GWCL uses increasing block tariff to bill water consumers in Tema. It is also obvious from Table 6.2 that domestic consumers in Akatsi pay 20% more for water than domestic consumers in Tema depending on the volume used. Tema is being compared here because it is the country's harbour city, the most urbanized and the only planned settlement in Ghana. The accountant of the Akatsi WSDB pointed out that they decided to use a flat rate for all consumers in order to encourage water consumption but in actual fact, people who collect water on a pay-as-you-fetch basis pay more for water than privately connected households. This is because, the attendant at the water point also earns a profit from selling the water. The privately connected households pay the same metre rate as the public pipe attendants but it is the well-to-do people in Akatsi who have privately connected water therefore pay less for water they consume. This finding is in sharp contrast with those who assert that rural people in Ghana *"are paying very little for the improved water services, as a result, the finances of many village water committees are in poor shape"* (Whittington, et al, 2008; 13) but this can be true, base on the location of the facility. Even though income figures from Akatsi is not available to make a comparative argument, workers of Akatsi District Assembly pointed out that they are on the same pay scale as people in regional capitals like Ho or Accra who depends on GWCL/AVRL commercially produced pipe borne water. These said, the water rate shown here is enough justification to show that people in small towns like Akatsi are paying more than urban people.

The WSDB in Akatsi defended the tariff on the grounds that their water tariff is the lowest in the Southern Volta Region of Ghana. The chairman compared their rate to that of Dzodze, a neighbouring small town where the WSDB uses an increasing block tariff as against Akatsi's flat rate, which has led to an improved financial situation of the board in Dzodze. If this is the case, then the CM concept as it currently exists under the small town water system in Ghana is not conducive for poverty reduction and the realization of the MDGs because people will be switching to the use of their "traditional" water sources like rivers, hand-dug wells and ponds due to the high cost of water.

If poverty in Ghana is largely a rural phenomenon with a greater proportion of urban workers (33.8%) engaged in wage employment as against their rural counterparts (7.3%) (GSS, 2008), with a majority of rural households caught in a vicious cycle of poor health, limited education and low economic productivity, improved affordable water services can be used to help them break the poverty cycle (Sachs, 2005). Also, if poverty is seen in Ghana as "*unacceptable physiological and social deprivation caused by poor health and poor quality of life*" (GoG, 2003: 3), it is argued here that the poor should be assisted in paying their daily use of water and not be made to pay more as is the case in Akatsi. Poverty can only be reduced when wealth is created through capital accumulation as a result of savings (Hellwig, 2007). Without savings, wealth cannot be created to reduce poverty. If water is seen as a means of reducing poverty (MDGs), the poor should be assisted with its provision, management and use.

It should be noted that, under the WB and IMF post-conditional state of Ghana, "*the coercive logic of conditionality still remains, as it does for all of sub-Saharan Africa*" (Harrison, 2004: 87). Ghana still depends on the WB and IMF, its major financiers for loans and guidance on

its management. Through this dependency, rural dwellers currently do not enjoy subsidies on their agricultural inputs, on health and educational facilities as they use to before SAP. This tariff gap between the small town (Akatsi) and urban area (Tema) is a reason for the argument that CM is not the solution to rural water provision in Akatsi District. The next section (6.3) discusses how community water supply facilities are being managed in Akatsi District.

### **6.3 Community Water Management in Akatsi and Torve**

Having discussed the commodification of water in Akatsi, this section moves on to examine the local management of water facilities and the ramifications for long-term sustainability. The argument here aims to show that neoliberal water policy as being practiced under the CWSP in Ghana has created institutions to manage the facilities, yet is unable to monitor and coordinate the activities of these institutions for sustainable water provision. Lockwood (2003) argues that it is unrealistic to provide expensive water facilities to poor communities and then be silent on the type of post construction support these communities might need in order to ensure proper functioning of the facilities. This argument is relevant based on the fact that many water facilities constructed in Ghana during the 1980s failed to continuously serve their beneficiaries due to the lack of support given by government and NGOs to communities then (Karikari, 1996).

Water projects are said to be sustainable if the project beneficiaries continue to use the facilities for a period of time or carry on with the intended project activities without or with little external assistance but with positive results after the development partner has left the scene (Bakalian and Wakeman, 2009). Findings from Akatsi and Torve show that the CWSP has developed a form of post-construction support (PCS) in the communities for maintenance

of water facilities as shown in Box 6.1 below. The post-construction period is “*the period of system operation 3 to 12 years after initial construction*” (Bakalian and Wakeman, 2009: 3).

**Box 6.1: Forms of PCS of Water Facilities (Standpipes and Boreholes) in Akatsi District**

**1. Monitoring and Evaluation**

- Quarterly monitoring of WATSAN/WSDB by DWST.
- Random visits by DWST and EHAs.
- Quarterly auditing of accounts and facilities of WATSAN/WSDB by the DWST.

**2. Co-ordination and facilitation**

- Introducing WATSAN/WSDB to pump mechanics and spare parts outlets by DWST.
- Conflict resolution within WATSAN/WSDB and between WATSAN/WSDB and community members by DWST.

**3. Training**

- Area mechanics and water point attendants/vendors by government departments and NGOs
- WATSAN/WSDB re-organization and training by DWST/CWSA.
- Based upon problems identified follow-up support is given to WATSAN/WSDB by DWST.

**4. Technical Assistance**

- Render technical support to communities in the form of water quality testing by the DWST on demand.
- Development Partner (NGOs) providing Technical Assistance to facilities and Managers.

**5. Financial Assistance**

- DA, NGOs, Individuals providing finance to rehabilitate broken down facilities.

Source: Fieldwork, 2008

### 6.3.1 Monitoring and Evaluation

The Akatsi DWST is a 3-member extension team set up by the CWSA with the support of the Akatsi DA to provide technical assistance to communities with water facilities. Members of the Akatsi DWST include the community development officer, a representative from the public works department and the environmental health officer. Members of the DWST are drawn from various departments of the Akatsi District, however their allowances are paid by the Akatsi DA. On the other hand, people become members of the WSDB/WATSAN through nomination or appointment by “*chop bar*” operators (local food vendors), market women, Christian council, Unit committees, traditional rulers, hair-dressers and a member of the DA.

The WSDB is the body responsible for the day-to-day administration of the water facilities in a small town.

The DWST is expected to monitor water projects being managed by WSDB/WATSAN on a monthly basis while evaluation is to be done on a quarterly basis (Akabang and Larbi, 2006). It was recommended in the water facilities management plan of Akatsi District that at least 4 visits should be made by the DWST to each project annually to know the status of the facility. The chairman of Akatsi WSDB however reported that “*they do not visit 4 times a year*”. It is the responsibility of the DA to provide logistics for monitoring projects in the district. The Akatsi District Planning Officer confirmed this saying that the DA does not have the financial resources and personnel to carry out the 4 visits as demanded by the facilities management plan of the district.

The main mode the DWST uses to monitor the water and sanitation facilities are sampling of opinion from beneficiaries, observation, and interviewing a sample of the population using a structured interview schedule. They also gather information from managers of the water facilities in order to answer their questions. The reports are written and submitted to the DA, CWSA and the WSDB. Recommendations are also made to address the problems observed.

The DWST plays an important role for the proper functioning of the water points in the Akatsi District however, the members of the DWST are not full-time water professionals but are seconded from three departments in the district to serve in the DWST. They can therefore be described as carrying out two full time jobs; one to their parent organization, and the provision of voluntary service as members of the DWST on behalf of the DA. Costs saving measures are being undertaken here by the neo-liberal demand-oriented community water

management of the Akatsi District by giving additional duties to people because the CWSP wants to cut costs. A member of the DWST points out that:

“I was not paid for the work I have done for the past two months. It takes time for our allowances to be paid and when it is paid, it is not enough. We work without adequate remuneration and this is leading to ‘filling up of reports’” (DWST member, 2007).

This means that some of the monitoring that is expected to be done in the field is actually done in the office which does not augur well for the sustainability of the facilities. Because the DWST members do not belong to a department, planning, budgeting and advocating to the DA for funds for the delivery and management of water facilities is a challenge. Also, the DWST is not able to put across management issues that are affecting communities and people’s access and use of the water facilities. The DWST is expected to monitor revenue and expenditure of WSDB on behalf of the DA. They are not expected to carry out actual auditing of the accounts of the WSDB/WATSAN committees but recommend quarterly auditing of their books. (Auditing accounts of WSDB will be discussed later in this chapter). The recommendations made by the DWST on the accounts of Akatsi WSDB have not been heeded by the DA leading to the accounts of the WSDB not being audited for some years. This study argues that if the accounts of Akatsi WSDB are not being audited to instill discipline in the use of community funds, then the sustainability of the water system is at stake.

### 6.3.2 Co-ordination and Facilitation of WSDB

The DWST is the main actor in providing post-construction support to all WSDB/WATSAN in the district. The WSDB chairman of Akatsi attested to the huge support the DWST gives them to maintain the facilities. The Akatsi District planning officer points out that the DWST does not carry out actual repair of water facilities in the communities, rather, they give technical and managerial support on what WSDB/WATSAN need to do in order to keep the

water and sanitation facilities running. In the event of a breakdown of a water facility, the DWST pays a visit to the facility to ascertain the problem and then make a recommendation to the WSDB/WATSAN committees and the DA on corrective action. The responsibility then lies with the WSDB/WATSAN and the DA to repair the facility. Effective co-ordination of the activities of the WSDB/WATSAN committees and making appropriate recommendations is a major problem that is hampering the use of the water facility in Torve as will be discussed in chapter 7 of the thesis.

### 6.3.3 Training

The CWSA of Akatsi District provided training on repair of boreholes and plumbing works to 4 local area mechanics - all of whom are men. They in turn undertake repair works on water facilities in all communities of the district. One of the area mechanics is a permanent employee of the Water Board in Akatsi. The trained mechanics were equipped with tools by the CWSA for their work. Some public tap attendants were also trained for routine maintenance like greasing of chains and tightening of bolts and nuts in the facilities. The local area mechanics are only called upon to render services that tap attendants can not undertake. The maintenance fees of the local area mechanics and the purchase of spare parts are paid from the WSDB/WATSAN account which is generated from the pay-as-you-fetch or bills paid by consumers of water in Akatsi.

All the members of the WSDB/WATSAN were trained by the CWSA on management of the facilities in their respective fields. However, the technician and accountant of the Akatsi WSDB point out that they rarely receive refresher courses to improve on their performance. The accountant lamented that new accounting tools are being developed and used in the water sector but he is not given the right training by the DA to deliver what he is expected to:

“I rely on the basic training I received when I was employed. I have not been trained in any accounting procedure for the past three years. During meeting with experts, what they tell us is don’t do this, do that, don’t do that, do this. These meetings do not equip me in accounting methods” (WSDB accountant, 2008).

The same sentiments were expressed by the technician and the chairman of the Akatsi WSDB. The board chairman also said:

“the board is doing its best to manage the Akatsi water facility in the midst of low financial resources and remuneration but our efforts are not being recognized” (WSDB member 1, 2008).

The demand oriented CM of water facilities in Akatsi expects people to render services for the management of water facilities but does not want to incur the cost of training them. This shows that only some items can be commodified (like water). Training of WSDB is mainly borne by NGOs like Training, Research and Networking for Development (TREND). These NGOs only come to train the WSDB members when they secured funding from their external partners. They do not come to train the WSDB members when they do not have funds to undertake the training. Lack of training affects the sustainability of the facilities.

#### 6.3.4 Technical Assistance for Sustainable Water

The donor of the water facility in Akatsi (GTZ) periodically sent technical experts to undertake routine maintenance of the water facilities. GTZ’s assistance was sought by the Akatsi WSDB to assist in repairing a major fault on one of the mechanized boreholes that broke down in 2007. Upon inspection by the contractor, it was decided that it would be better to abandon rather than repair the borehole due to the cost involved. In another case, parts were removed from a mechanized borehole to be used in another one. This means the Akatsi WSDB has to depend on only 4 out of the 6 mechanized boreholes that supply water to the communities. The decrease in the number of boreholes has impacted on the quantity of water that is pumped to the community (15,000m<sup>3</sup> and day), leading to the rationing of water.

People have to form queues for water. Water flows in the taps of Akatsi between 08:30hrs and 12:00hrs, less than 4 hours a day. People who could not gather water during this time have to depend on alternative water sources like buying water from hand-dug wells or rain harvested water which the CWSP is not in favour of, or has failed to provide. The number of hours water is being delivered in Akatsi is not sustainable based on the definition of “sustainable access to water”. The current management of water in Akatsi by the WSDB does not meet the definition of at least 8 hours a day to propel the community to achieve the MDGs.

Indeed, it is not possible to isolate a single factor that accounts for sustainable management of community water facilities (GTZ, 2007). However, technical assistance is found to be lacking in the district leading to inadequate and poor quality water delivery to the communities (as will be shown in chapter 7). Rosensweig (2001) argued that regulation in certain key areas like technical and water quality testing of rural water facilities is a positive factor for the success and acceptance of models of CM. No water quality test was undertaken by the Akatsi WSDB in 2005, 2006, 2007 and 2008. The chairman explained that the cost of undertaking water quality tests, which in 2007 was Gh¢500 (£250 per test), is beyond the means of the WSDB. The fact that only one water quality test was undertaken during the 5 years’ existence of the Akatsi water facility shows that the neoliberal principles under the demand-oriented water policy of Ghana looks only at how it can save costs but not at the quality of what is being provided.

#### 6.3.5 Financial Assistance

It has been shown throughout this chapter that financing recurrent and capital expenditure is the single greatest challenge of CM of water facilities, not only in the Akatsi District but in

Ghana as a whole (Bakalian and Wakeman, 2009). Right from the initiation stages of the Akatsi piped water facilities, generating the needed financial resources to pay the 5% initial commitment fee was a problem. Residents of Akatsi town refused to pay this amount. This led the DA to pay the 5% initial capital cost demanded by the donors of the facility and the DA assemblies own 5% commitment fee. The fact that the people of Akatsi refused to pay the initial cost of water facility provision means there is no participation of the people in the project neither do they have demand for the service. It shows that people of Akatsi are resisting such community participation.

People and organizations in Akatsi also refused to contribute money to pay for the repair of the water facility when it broke down. The chairman of the Akatsi water board attested to the fact that they received financial support from the DA to undertake major repair works in 2008. Had it not been for the assistance of the DA, the water facility would have collapsed due to the low revenues generated from the sale of water in Akatsi town. The people of Akatsi therefore look to the government, represented by the DA to provide their water needs.

The Akatsi WSDB relies on the revenue it generates from its operation to carry out repair and to cover recurrent expenditure. At the same time, it has to pay back to the DA the 5% it paid on behalf of the community during the initiation and implementation stages of the facility. This requirement of the WSDB to pay back to the DA the 5% capital cost it paid on behalf of the community is draining the financial resources at the disposal of the WSDB to carry out major repair works on the facility.

The above discussion shows that CM of the water facilities in Akatsi is consistent with Lockwood's (2002; 2003) guidelines for the management of community water facilities. However, problems with monitoring and evaluation of the facilities, co-ordination and facilitating WSDB/WATSAN committees, training of those managing the facility, provision

of technical assistance for clean and accessible water to meet the MDGs are not being realized. This is because the neoliberal demand-oriented community water management in Akatsi depends on “free labour” for service provision and management. What is more, the DA which has oversight responsibility of the WSDB/WATSAN committees is not performing its role effectively.

I have argued above that people are resisting payment for water facilities to be constructed for them mainly due to collective action problems in small towns in Ghana. Also, the discussion shows that certain “products” that can increase revenue and cut cost are commodified whilst those costs such as water quality tests, the training of water facility managers and coordinators of WSDB have not been commodified under the CWSP of Akatsi District of Ghana. The next section (6.4) will be used to discuss the benefits people in Akatsi and Torve derived from their water facilities.

#### **6.4 Benefits People Derived from Water Services in Akatsi and Torve**

The previous section shows how the water facilities in Akatsi and Torve are being managed. The CM concept in Akatsi and Torve relies heavily on “non professionals” to manage expensive water facilities. For instance, the Akatsi Township piped water facility alone cost GTZ and the DA over Gh¢900,000 or £391,000 (Board chairman, 2009). The board chairman points out that the facility is expected to be extended to other communities with a total population of about 30,000 people. These surrounding villages include Torve, Yaluvi, Agbedrafor, Agbaflome, Awalavikope and Wute to mention a few. The donors expect the huge investment made in the water facilities to benefit a large segment of the people of Akatsi District.

About 62.5% (n=200) of the respondents interviewed for this study pointed out that water infrastructure in the form of boreholes and pipe borne water has improved over the past ten years in their communities, thanks to the CWSP initiated in Akatsi District. However, these respondents came mainly from Akatsi town itself. The majority of the respondents from Torve responded that water facilities have not seen any improvement. Table 6.3 below shows responses from the 200 people interviewed in Akatsi and Torve about the benefits they have derived from water facility availability within their communities over the past ten years.

**Table 6.3: Benefits Respondents Derived from Community Managed Water Facilities (Borehole and Pipe) in Akatsi and Torve (n=200)**

Current Benefits Derived from Water Facilities in Community (%)							
Community	Uses less time to gather water	Shorter distance to water	Water is now cheaper	Reduction of water borne diseases	Improved management of facilities	None	Total (%)
<b>Akatsi</b>	30	16.5	2.0	5.5	9.0	10.0	73.0%
<b>Torve</b>	0	0	0	0	1.5	25.5	27.0%
<b>Total (%)</b>	<b>30.0</b>	<b>16.5</b>	<b>2.0</b>	<b>5.5</b>	<b>10.5</b>	<b>35.5</b>	<b>100.0%</b>

Source: Fieldwork, 2007/2008

The benefits people derive from water facilities in Akatsi include less time in gathering water, shorter travelling distances between water points and dwellings, and a reduction in water borne diseases. Torve people's responses show that there is no improvement in water facilities even though the community is located near Akatsi town and on the major highway linking all the capital cities of the West African Coast. The difference between the responses of people of Akatsi and Torve can be attributed to the fact that Akatsi people now use piped water facilities (mechanized borehole) which is piped to individual houses or stand pipes. Akatsi people therefore benefit from shorter distance and less time to gather water compared to people of Torve who still use the river as their main source of water.

Observation of water facilities in Akatsi town shows that people are now less exposed to hazards associated with water collection at the river side like being bitten by a snake or

scorpion and carrying water on the head for long distances from the river. People no longer walk long distances to gather water. However, those hazards still exist in Torve. Women are exposed to attack from snakes and scorpions at the river side. On the other hand, water collection and washing at the riverside also provides an opportunity to the youth to fraternize or talk to each other, a situation that is not possible if water is present in the house. Gathering water at the riverside and public pipes allows children from households where parents do not allow their children to visit friends to come together and socialize. Some deliberately delay in taking the water back home. Other women also take it as an opportunity to fraternise, talk to each other or gossip on developments in their communities. This development can also explain the long hours people spend in gathering water and not necessarily the long queues at the water points. However, reliance on public taps for water by the poor makes them pay more for water than the rich people in the community because they have in-house connections and pay a flat rate. Section 6.5 is used to discuss local politics of CM of water.

## **6.5 ‘Politricks’ of Community Participation and Management of Water**

This section discusses in detail issues of participation like representation in the WSDBs and the articulation of views for policy decision-making, the auditing the accounts of the WSDB to the community and the DA and the sense of ownership of water facilities among people of Akatsi town. Other community participation and management issues discussed here include the neglect of poor communities due to inadequate revenue generation to replicate water facilities and neglect of the poor in accessing water in Akatsi. “Politricks” is used in Ghana to refer to the art of politicians’ deception of the electorate for their support and vote. This is a word used to show disaffection with the Ghanaian political system and I use it here to show how community members are arguing over the management of water resources.

### 6.5.1 Membership of WSDBs and Articulation of Views

Findings from Akatsi reveal that water management is dominated by those already well-to-do in the community as against the avowed claim by water experts in Ghana that marginal people should manage water for the good of the community (WRC/MWRWH, 2007). Participation in theory is different from participation that is being practiced as Table 6.4 below shows.

**Table 6.4: The Composition of Akatsi WSDB**

<b>Position</b>	<b>Gender</b>	<b>Previous Status/ Employment</b>
<b>Board Members</b>		
Chairman	Male	Traditional Ruler
Vice- Chairman	Male	Assembly Man
Secretary/Technician	Male	Unit Committee
Treasurer	Female	Chop Bar Operator
Floor members	Female	Hair Dressers Association
2 Floor members	A male and a Female	Christian Council/Market women
<b>Non-board Members</b>		
Plumber	Male	Mechanic
2 Meter readers	Male	Unemployed
18 public stand pipe attendants	6 males and 12 females	Unemployed and Traders

Source: Fieldwork, 2008

These nominated WSDB members inform their members on developments in the WSDB. Organizations that are not represented are thus not informed. In this case, participation of beneficiaries in domestic water resources management in Akatsi are at Arnstein's (1969) "informing and consulting stage" instead of partnership or citizen control which is said to empower citizens to take unilateral decisions with little external support. It can be seen from Table 6.4 that even though all members of the WSDB are local people who will try to seek the interest of the community in managing the water facilities, no member is elected. Also, farmers who form the majority of the working population in Akatsi and who are poor are not

represented in management of the water facilities. Based on the definition of a poor person outlined in section 3.5 of this study, these nominated members of the WSDB are among the rich and elites (locally referred to as elders) in the community. Non-elite and poor people within the population can choose to seek nomination to serve in the WSDB but cannot because of lack of time (Putzel, 2004) to undertake such a voluntary activity. Discussion with all the members of the WSDB in Akatsi pointed out that they have other sources of income and do not rely solely on the allowances paid them as members of the WSDB. The findings in Akatsi confirm van Heck's (2003) assertion that the low participation of poor people in formal and informal organizations also affects their participation generally in all aspects of decision making.

It can also be seen from the table above that men continue to occupy visible leadership roles in the WSDB of Akatsi. Very few women participate in formalised water management in the district. Apart from the treasurer, the role of the other two female board members reinforces traditional gender roles of women occupying lower echelons of decision making in Ghana (Ackah et al, 2009a). The other female members of the WSDB serve as sanitation educators and revenue mobilizers/enforcers of the WSDB. This finding demonstrates the limitation of management structures put in place at the community level and ways in which the institutions created can reproduce inequality and reinforce the exclusion of people marginalised in decision making (Cleaver 2005). Empowerment of women to take charge of water facilities cannot be ensured as envisaged in the CWSP and CM of water facilities (Schouten and Moriarty, 2003).

The researcher personally attended a meeting of the WSDB members and the only female board member in attendance did not speak to air her views or those of people she is

representing. The only role she played during the entire meeting was to provide refreshment to participants. When she was asked to air her views, the female WSDB explained that:

“I made my point known to the chairman before the meeting and he has put it across to the gathering” (WSDB member 3, 2008).

This response can be interpreted as a means through which women put across their views through elders in Ghana. Normally, women can delegate people to speak on their behalf. In Ghana, women air their views through Queen Mothers (Brydon, 1996). Queen Mothers are the female leaders of a village or a town. Queen Mother’s position can be said to parallel that of a chief in Ghana’s traditional political system. The queen mother in turn speaks to the chief on behalf of women without fear of intimidation (as is the case with ordinary women). However this female WSDB member is representing women of Akatsi and as such is expected to put across the views of women she is representing in public. She was not put into office to speak on behalf of women to the chair but to make sure women’s interest are ensured in decisions regarding water. Women’s membership in the water board is aimed at championing the voice of women and the poor but because men dominate proceedings during WSDB meetings, the taps are opened at 08:30 and closed around 12 noon when most women are in the farm, working or trading. Indeed, there is no rule in Akatsi or Torve that prevents women from speaking in public. The inability of the female representative of the WSDB to speak during meetings cannot be said to be a cultural barrier to women speaking in public but rather due to insecurity to speak in public.

#### 6.5.2 Rendering of Accounts to Community/DA by WSDB

Involvement of beneficiaries, indeed CM can improve accountability of the funds generated from the sale of water to the community (Schouten and Moriarty, 2003). Accountability, not only provides the opportunity for those responsible for the management of community water facilities to present periodic accounts of their income and expenditure to the community but

also provides opportunity for the WSDB members to retrospectively explain their actions and inactions to members of the community. It also provides an opportunity for people of Akatsi and Torve to assess and contribute to the activities of the WSDB/WATSAN. Members of the Akatsi community who also serve as “customers” and at the same time “shareholders” of the water facility based on the CWSP have oversight responsibility to demand or be given account of activities of the WSDB/WATSAN through regular community meetings. The Akatsi WSDB however depicts a typical elite capture of the facility as evidenced in the statement by a member of the WSDB below:

“The Akatsi WSDB is a one man show where the board chairman can request the purchase of equipments without seeking approval from other board members because he want the welfare of his community” (WSDB member 2, 2008).

This member is referring to the chairman of the WSDB who happens to be a chief of Akatsi. The above statement shows that he dictates to the other members of the board what they should do. His word is final. Further, the reference to “his community” is problematic and introduces local politics in water management. Even though people who hail from Akatsi (referred to in this thesis as indigenous population) predominate in Akatsi, people from other parts of the country including for example Ho, Agbozume, Aflao and Avenorpeme can also be found in the town. By claiming that the water facility belongs to a community is literally being translated as those who do not hail from this community are excluded from managing it or suggesting ways to improve it. Indeed, apart from the technician and accountant who the WSDB chairman sees as “outsiders”, all the members of the WSDB of Akatsi trace their ancestry to the town. The statement above shows that the WSDB chairman feels he has to seek first the interest of his town by giving orders as to what is to be done instead of arriving at a consensus. The other board members who do not hail from Akatsi are seen as “outsiders” who are in the community to earn a living and not for Akatsi’s development.

The politics of water management in Akatsi can be seen where the DA also has a responsibility to demand that the WSDB members render accounts to it because they hold the facilities in trust for the community but this is hardly practiced in Akatsi. This is mainly because the DA is not adequately resourced financially and with human resources to play the role it has been assigned by the CWSP. For instance, the last time the account of the Akatsi WSDB was audited by external auditors was in 2004, just a few months after the facility was handed over to the community by its donor (GTZ). The Deputy District Co-ordinating Director who works for the DA pointed out that:

“things are not being done in the Akatsi WSDB the way they should be done as such we are conducting audit of the board. The findings of the audit will this time be made known to the public” (Fieldwork, 2008).

This response means the previous audit was not made public but kept within the DA. Inquiry from the DA revealed that the last accounts showed irregularities like issuing of cheques and contracting repair works that were not covered with proper receipts but since the board chairman is a traditional ruler (chief), sources suggest the DA instituted measures to correct the account without making it public. Analyzing the statement by the Deputy District Co-ordinating Director suggests that the activities of the WSDB are being suppressed by the DA because either they do not want to humiliate the chief based on his status in the community or because chiefs in Akatsi, just like other communities in Ghana serve not only as the focus for mobilizing people for communal development but also as the most effective link between the people and the DA (Boafo-Arthur, 2001; 2003). The power of traditional rulers has been reduced due to Ghana’s constitutional provision which explicitly debars chiefs from taking active part in partisan politics yet they are involved in the politics of water provision and management. Also, the decentralization of decision-making through the DA brings government closer to the people through their participation in decision-making at the DA level. Nonetheless, traditional rulers are still revered in the community, based on their status

and supernatural powers. What is more, since no citizen can question the authority of a chief in making decisions in Ghana, it seems normal for people to keep quiet on the activities of the WSDB headed by a chief.

The accounts of the Akatsi WSDB are not audited by members of the community because the CM of water in Akatsi promotes the upward flow of information and accountability to the DA rather than to the citizens who are the users and owners of the facility. For instance, facilities management quarterly reports are submitted to the DA/CWSA and the project financier (donor), but not shared with local people who are affected by the project. Also, there is a requirement that the WSDBs should involve members of the community in tariff-setting and how funds are used but because of the upward accountability entrenched in the CWSP, the WSDB look up to the DA instead of to members of the community.

About 87% (n=200) of members of both Akatsi town and Torve responded that they have never been given an account of income and expenditure of the WSDB since its inception in 2004. Even the pipe attendants who are in close contact with the WSDB point out that they are not aware of the income and expenditure of their activities, and neither do they attend meetings:

“I have been doing this work for the past five years. I have never been called by the WSDB to be given income and expenditure of our money. I only go to the board’s office to pay my bill to them” (Public Pipe Attendant 1, 2008).

Another also points out that:

“I attend meeting of the water attendants but not the general public. I have never heard of a meeting being organized for the public. I have been selling this water for about 5 years but have never attended any meeting organized for the community by the WSDB nor the DA” (Public Pipe Attendant 2, 2008).

The chairman of the WSDB however said they organize quarterly meetings at the market square for members of the community in order to give account of their stewardship. Findings

by this study shows that meetings were held at the town square annually yet, the minutes of the meetings do not show the number of people present at the meetings short of dignitaries like heads of departments and water board members. The number of people present at the meeting can serve as an indicator of the level of involvement of the people in water management. What is more, the venue where the meeting is said to have been held can only accommodate about 50 people. This might be a reason why people do not attend the meetings organized by the WSDB or because of inadequate information. In small towns like Anyarko where I hail from, people are informed of important meetings or developments through a gong beater to residents usually early in the morning, but all water point attendants point out that they have never been informed of any meeting of the WSDB. Relating this finding to the ladder of participation shows that people of Akatsi, even though are managing their water facilities by local residents, are still at the non-participation stage of manipulation and therapy or “passive participation” (Pretty, 1995).

The Deputy District Co-ordinating Director of Akatsi District nonetheless points out that they at times receive quarterly reports and accounts from the board but the assembly could not audit the accounts of the board officially because this has to be done by external auditors. However, because the term of office of the WSDB expired in 2007 (term of office of WSDB is five years), the DA decided to dissolve the board in October 2008 and constituted an interim board to manage the water facility until a substantive board is constituted by the community (see Appendix 6 for handing over letter).

Table 6.5 shows timeline of events in Akatsi WSDB. The table shows that Akatsi WSDB was formed before the commissioning of the Akatsi water facility. This was necessary because of the requirement within the CWSP that WSDB and WATSAN committees should be formed and be involved in the demand for improved water facilities provision in communities.

**Table 6. 5: Timeline of Events in Akatsi WSDB**

<b>Date</b>	<b>Event</b>
2002	Formation and Inauguration of Akatsi WSDB
2002	Start of term of office of Akatsi WSDB
2007	End of term of First Akatsi WSDB
2007	Formation and Inauguration of second WSDB
2008	Dissolution of first Akatsi WSDB by DA
2008	Formation of interim Akatsi WSDB by DA

Source: Author, 2010

Also, the table shows that even though, the first WSDB tenure of office expired in 2007, the second members of the WSDB were not formed until they were dissolved by the DA in 2008. The table typically resembles what Shiva (2005) termed “water democracy” where people are involved in the management of their water resources where new members are formed at the end of the tenure of office of the old one. The DA thus dissolved the WSDB in order to ensure the democracy that water management at the local level is to bring.

However, the chairman of the Akatsi WSDB accused the DA of not performing its supervisory role as demanded by the facility management plan. He argues that:

“how can I be asked to step down when my accounts have not been audited by the same assembly that is asking us to step down? We have been submitting our accounts to them but they never audit it. Neither do they comment on our activities. Because of the nature of the dissolution of the water board, I asked my solicitors to take the DA to court for them to give an explanation to their action or audit the accounts before I step down” (WSDB member 1, 2008).

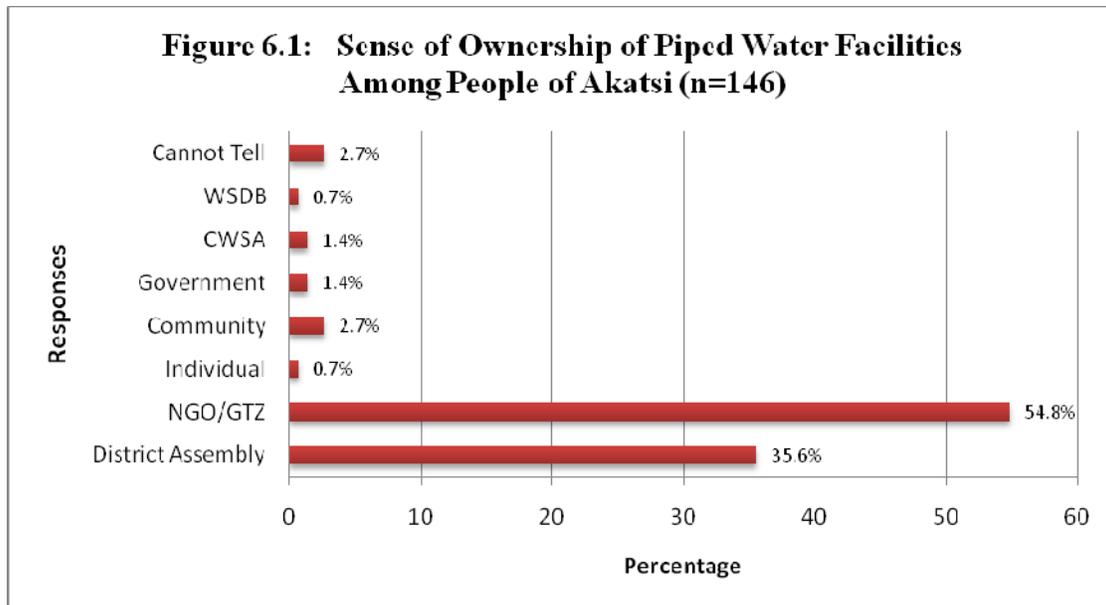
Indeed, the local politic of water management in Akatsi led the Akatsi magistrate’s court to prevent the inauguration of the interim WSDB based on the requirement in the facilities management plan that the accounts of the WSDB have to be audited before they leave office. Had it not been for the intervention of other chiefs and elders of Akatsi, the chairman would not have allowed the DA to inaugurate the new board. The new board was inaugurated and they are working. This shows that the DA is not capable of performing its legally mandated

duty of monitoring the activities of the WSDB for the communities to benefit from the improved water facilities that has been constructed for them.

Based on the fact that, the people of Akatsi refused to pay the 5% initial capital cost of the water facility and the fact that there is apathy among residents of Akatsi towards the management of the water facility, one can conclude that participation is simply a label designed to transfer the cost of water facilities management to local level actors through the provision of voluntary labour (Jaglin 2000). These findings also confirm Cooke and Kothari's (2001) assertion that participation benefits people with voice and influence rather than poor people.

### 6.5.3 Sense of Ownership of Water Facilities among People of Akatsi

The politics of water management can be seen in the number of people attending meetings and providing contribution to these meetings for the improvement of the facilities. This is a mark of the participatory elements in the management of community water facilities (Lockwood, 2003). People of Akatsi town however do not attend meetings of the WSDB. Either they are not interested in the scalar politics of managing the WSDB because they feel the water belongs to the DA or GTZ, or they are not given information about attending the meetings of the WSDB. This can be seen in the responses to the question "who owns the pipe water facilities in your community" (Figure 6.1).



Source: Fieldwork, 2007

Responses and actions from members of Akatsi point to the fact that there is no sense of ownership of the water facilities, neither are the people aware of the owner of the water facilities. The main aim of CM is to equip communities to own and control their own systems (Cleaver and Elson, 1995; 3). Community participation and management are the main tenet of the demand-oriented CWSP in Akatsi. As such I expect people of Akatsi to know the owner of the “piped water” facilities that they are enjoying and to participate in its management. As shown in Figure 6.1, only 2.7% of respondents in Akatsi are aware that the water facilities they are currently enjoying are actually owned by the community. Even though GTZ constructed the facilities and handed them over to the WSDB, about 54.8% of respondents still think the water facilities belong to this donor. About 35.6% of respondents also think the water facility belongs to the DA. The DA holds the water facilities in trust for the community but does not own it in principle. This response can be attributed to the fact that the 5% of initial capital cost the community was expected to pay for the facilities was actually paid by the DA creating an erroneous impression that the pipe water facility belong to the DA. These responses could also be interpreted as strategic – members of the

community do not want the responsibility of ownership and management and think that the DA should take that responsibility.

Another possible explanation to the lack of participation and awareness in the politics of water facilities management in Akatsi is the confusion generated over the management of the different water sources in the town. Water points constructed in Akatsi before the CWSP started in 1993 were handed to the community by the donors. These water facilities are seen as community owned as such are being managed by the Town/Unit committees. The Town/Unit Councils refused to hand them over to the WSDB because they claim it belongs to the community and not the CWSP. This means the Town and Unit committee members see the facilities as belonging to the government and not Akatsi Town. The main reason for not handing over these water facilities can be attributed to the revenue it generates. This revenue is used to pay the allowances and remunerations of the Town/Unit committees therefore, handing them over to the WSDB will amount to “financial starvation” of the Town/Unit committees.

In theory, all domestic water facilities in the Akatsi District belong to the CWSP but in practice some belong to the towns led by the Town/Unit committees. These facilities have to be managed by either WSDBs or WATSAN committees but in practice, because of the insistence on ownership of a facility by a community, the Town/Area/Unit Councils in Akatsi town refused to hand over these facilities constructed by NGOs and handed over to the community to the CWSA. The Town/Unit committees appoint caretakers of the water points who render account to the Town/Area Councils. The proceeds from the sale of these water sources are said to be used in community development activities. The researcher tried to interview managers of these water facilities but no one was ready to be interviewed but rather was directed to the DA. The Akatsi district planning officer also pointed out that the water

facilities actually belongs to the town and its proceeds are used for the provision of essential facilities like toilets in the town as such the DA does not want to take it away from them and hand it over to the WSDB. Power struggles in Akatsi between different institutions crucially revolve around the notion of ownership of community resources and these actors accuse each other of betraying 'the trust reposed on it by the people. Town and Unit committees are exploiting the inconsistencies of governmental interventions within the water sector which can indeed temporarily de-stabilize CWSP's conceived community. The Town and Unit committee members' greatest control in the power struggles within the water sector in Akatsi can be attributed to the claim that they 'represent the democratically elected people of the Akatsi', a claim that the WSDB and the DA accept because of governments' pronouncements on community participation and management. The next section 6.4.4 discusses how poor communities are neglected in water provision.

#### 6.5.4 Neglect of Poor Communities in Water Provision

The division caused by water provision in Ghana is not only about conflict within WSDB but it extends to neglecting poor villages and discriminates against rural settlements to their small towns (district capitals). A poor village like Torve, which has toiled to mobilize financial resources to be assisted with water facilities could not be helped with water because of the policy that small towns (Akatsi) which have been provided with pipe borne water should generate revenue from the sale of that water in order to extend facilities to neighbouring villages. According to the facilities management plan of the Akatsi water facility, the pipe water scheme is to generate revenue to be used in extending pipe borne water to other neighbouring villages like Torve. However, it was discussed in section 6.2.2 that Akatsi WSDB is not able to generate enough revenue after five years in operation to pay the 5%

contribution made on behalf of the community by the DA, let alone to extend the facility to other communities like Torve. The board chairman lamented on their financial position that:

“had it not been the high default rate by institutions like schools and health centre and some individuals the water board would have paid all the 5% the DA paid on behalf of the community long ago” (WSDB member 1, 2008).

The government institutions are seen here as the problem and not individual defaulters. He points out that because the WSDB have to pay the 5% the DA paid on behalf of the community, it is not possible for the water board to carry out any extension to new areas five years after the facility was constructed. The fallacy of CM can be seen in extending pipe borne water from Akatsi Township to Yaluvi and Awalavikope (see Figure 5.1 for location). Even though these communities have a population of less than 300 people and are less than three kilometers from Akatsi Township, the DA mobilized financial resources to pay for the extension of water to these communities. Critics might argue that the DA paid for the extension of the water facility from Akatsi to Yaluvi and Awalavikope from the revenues it generated from the WSDB. The point is that this money was paid by the DA on behalf of the community. The DA has no right to demand that the WSDB pay back money it has spent on infrastructure provision in the district. This study is arguing that it is unfair that some communities are assisted with subvention from the DA for piped water provision while others like Torve are not assisted purely base on their distance from Akatsi.

The Akatsi water facility is more than five years old. After five years of operation of a water facility, depreciation sets in and more costs are incurred repairing worn out parts. If after five years, the water board is not able to generate enough revenue to pay for the 5% contribution made by the DA on behalf of the community, then there is no possibility that sufficient revenue will be generated for expansion or for replacing aging equipment in the future. Therefore, the policy of small towns generating revenue from the sale of water in their

communities for replication in other communities is not feasible. The District Planning Officer points out that:

“I am yet to see any community in the Akatsi District, indeed, hear a community in Ghana that is able to construct new facilities through this system of generating revenue from sale of water for extension to new communities. My friend, the Akatsi water board have to apply to the DA to part-finance some of its broken down parts due to limited cost recovery” (ADA Planning, 2008).

This shows that it is very difficult for WSDB to generate revenue from water they sell to their customers to replicate facilities in other towns, as suggested in the facility management plan. To this study, it is difficult for the WSDB in Akatsi to recover the cost of water facilities provision because of the presence of different forms of water sources which are cheaper and more acceptable to the people than that being sold by the WSDB. Informants in the DA reveal that the DA is looking for external development partners to finance the 90% capital cost of extending pipe borne water to Torve. Apart from the high dependence on donors by the Akatsi DA, financing water facilities in Torve and other rural communities depends on the DA's revenues. As noted in Chapter five, the DA common fund is not adequate to be used in all planned development plans of the DA. Also, the disbursement of DAs' common fund has been decreasing. The last disbursed revenue to the Akatsi DA fell short of about 45% of the 2007 one (Akatsi District Planning Officer, 2008).

It becomes very difficult to use the DA's own revenue to construct water facilities leading to the heavy reliance on development partners to finance 90% of the cost of water projects. Water facilities are therefore not constructed unless a development partner is willing to finance a water project. Where they are willing to finance the construction of the facility, the low population of the communities does not favour pipe water because of the cost involved and the CWSP's population limit (5000) for pipe water. Until an external partner is sourced, Torve people will continue to use the river, yet on paper they are considered to be benefitting

from borehole water, when in actual fact they are not using the facility as will be discussed in details in section 7.6.

Indeed, the low population of Torve makes the reliance on payment of the 5% initial capital cost per head high compared to other towns with higher population, who are even not willing to pay for water construction as shown in the case of Akatsi. Also, the 5km distance from Akatsi to Torve increases the total expenditure to be made on extending the facility to Torve which in effect means each poor individual in Torve has to pay more before the community can meet the 5% initial capital contribution required to provide the facility. To many poorer and outlying villages, the policy is reproducing inequality between them and other communities that were assisted through the same policy. Torve people were able to mobilize their 5% of capital cost of facility installation despite the small population of the community (about 1,030) as compared to that of Akatsi which currently has a population of more than 20,000. Torve people were able to mobilize their 5% contribution to capital cost of the facility but Akatsi people could not due to collective action problems like logistical or informational constraints. Others are the ability of individuals to develop the culture of “free riding” in which some individuals benefit from the collective good even though they do not pay the costs of providing it (Smith, 2010).

The chairman of Torve WATSAN committee grieved over the fact that:

“Torve people were able to contribute an amount and deposited it at the bank in order to be provided with pipe borne water, nevertheless some communities like Akatsi and Yaluvi have benefitted from pipe borne water without contributing the needed 5% capital cost. Some people in the community are getting frustrated with the fact that they have contributed money but have not seen the ‘fruits of their toil’ whilst some have not paid a dime yet are enjoying good quality water (WATSAN member, 2008).

The contradiction of the policy of pipe water construction in communities can be seen in the CWSP policy guideline that, communities with a population of less than 500 inhabitants

should be provided with hand-dug wells. Communities with populations between 501 - 2,000 should be assisted with boreholes. Pipe borne water is to be supplied to small towns with a population greater than 5,000 (MWRWH/CWSA, 2003). These small towns like Akatsi are then expected by the CWSP to extend pipe borne water to their neighbouring villages even though most of these neighbouring villages have a population of less than 5,000 which disqualifies them from enjoying pipe borne water officially. Ghana's water policy (WRC/MWRWH, 2007: 14) recognizes the principle of the "*fundamental right of all people without discrimination to safe and adequate water to meet basic human needs*" but a community like Torve is being discriminated against the acquisition of pipe water because of its geographic location and population size. The contradiction in making water a basic human need can be seen in the same policy which recommends that:

"community contributions will be used to pay part of the capital cost of the basic services and all of the recurrent costs of their water facilities. Higher service levels of water and sanitation services are encouraged, but beneficiaries will be required to pay a substantial part of the added cost" (WRC/MWRWH, 2007: 53).

This means some communities can be assisted with water provision even when they could not provide the 5% community contribution whilst those that are able to finance it are not assisted because the "higher order small town (Akatsi)" has to generate enough revenue to extend the facility to its neighbouring lower order communities like Torve. The MDGs of halving the number of people without sustainable access to water supply cannot be achieved in the Akatsi District if the policy of communities contributing to capital costs is not relaxed. Also the policy of higher order small towns generating revenue to replicate facilities in smaller communities is not working.

#### 6.5.5 Neglect of the Poor in Akatsi

It is not only poor rural communities which are being discriminated against and neglected with water facilities provision. There is discrimination between government institutions and

poor citizens. We have seen that even though government institutions enjoy ‘free’ water in Akatsi, ordinary poor citizens do not. This is a key imperfection in the current community based water management model in the Akatsi District. The GoG, together with its development partners, recognized the importance of potable water facilities in poverty reduction as exemplified in the Ghana Poverty Reduction Strategy documents (GoG, 2003; Harvey, 2008). However, this laudable objective was not put into practice in Akatsi. The technician of the WSDB of Akatsi pointed out that:

“there is no provision for the poor nor the needy in the provision of water in Akatsi because giving concession or free water to one person would lead to another person also coming forward to be assisted. We can not get any money if we started acting like a charity to the poor” (WSDB member 2, 2008).

There is no institutional measure in Akatsi to cater for the welfare of the poor and vulnerable groups like the aged, sick and disabled people. This denial in Akatsi leads people to use other “unhygienic” sources of water like hand-dug wells and ponds which contravenes the aims of the CWSP and does not augur well for the realization of the MDGs. Table 6.6 below shows the responses to what respondents in Akatsi do when they do not have money for water.

**Table 6.6: Strategies Respondents Use when they do not have Money for Pipe Water (n=146)**

Income Group	<i>Percentage Response of Strategies Respondents in Akatsi Use When they Do not Have Water (Frequencies and Percentages)</i>								Total
	Fetches Water from River/hand-dug wells	Will not pay bills & get disconnected	Borrow money to pay for water	Borrow water from friends	Household does not always use pipe water	Can Always afford Water	Buys water on credit	No Answer	
Poor	2 (1.36)			21 (14.38)	-	2 (1.36)	3 (2.05)		28 (19.20)
Medium	2 (1.36)	1 (0.6)	3 (2.05)	15 (10.27)	-	3 (2.05)	2 (1.36)	1 (0.6)	27 (18.50)
High		-		40 (27.39)	6 (4.1)	32 (21.91)	13 (8.90)		91 (62.32)
<b>Total</b>	<b>4 (2.7)</b>	<b>1 (0.6)</b>	<b>3 (2.05)</b>	<b>76 (52.04)</b>	<b>6 (4.10)</b>	<b>37 (25.32)</b>	<b>18 (12.32)</b>	<b>1 (0.6)</b>	<b>146 (100)</b>

Source: Fieldwork, 2008

Participatory wealth ranking is used here to show the income groups (refer to section 3.5 for criteria). About 4.10% respondents from all income households said they do not always use

pipe water. This means they depend on the river or hand-dug wells (2.7) or borrow money for water (2%). The most interesting revelation from the table is the reliance on the generosity of friends and neighbours for water in times of hardship by all income households. However, majority of high income households said they borrow water from friends when they do not have piped water. Majority of high income households also construct rainwater harvesting equipments to store rain-harvested water as such does not always use pipe water. About 52% of respondents use this means by borrowing water from people who have water, whether in large quantities or a few litres to be used for the specific purposes. A water point attendant said:

“people come to me to fetch water without paying for it. Some of them are genuinely poor as such I allow them to fetch the water without demanding money from them. Some pay it back when they have money” (PPA 2, 2008).

The ability to pay comes to mind here. If poor people are able to pay for water, they then have less disposable income to be used in other activities which exacerbates their poverty status. Buying water on credit (12.32%) is not the best option since it has to be paid back later. Observation in the study area showed that poor households have only one square meal a day. They sell their farm produce on market days, which at times is not bought, therefore cannot genuinely afford to pay for water. This finding on what people do when they do not have money to pay for water suggests that the poor are excluded from effectively accessing institutional water that has been provided mainly for their use even at the basic local level. In Akatsi Township “*the faith placed in collective action is enticing, but misplaced for the poorest*” (Cleaver, 2005: 900). The policy under which the CWSP is being carried out laid emphasis on cost recovery for sustainability, yet insists “*on the importance of gender, equity and support for the poor, when it is precisely these groups who are least able to cope with the burdens of cost recovery*” (Cleaver and Franks, 2008: 60). The foregoing discussion has

shown that CM of water facilities in Akatsi and Torve is not the panacea to water provision in Akatsi District to achieve the MDGs. A brief conclusion is provided in section 6.6 below.

## **6.6 Conclusion**

*“Development literature stresses the positive role of collective action in supplying public goods that neither the state nor the market can effectively provide”* (Cleaver, 2005: 900). In Akatsi and Torve, the decision to transfer capital intensive water systems to community managers, though laudable, does not show signs of sustainable delivery of water for the achievement of the MDGs. The chapter shows that even though water has been commodified, labour is yet to be commodified to manage the product sustainably.

Many of the people in Akatsi lack the commitment to participate because participating in meetings does not benefit them. Above all, many of the people of Akatsi are not informed of meetings of the WSDB for them to attend. In the case of community contribution towards capital cost of water facilities, Torve people were able to mobilize financial resources because the size of the settlement is small. Also, the technology - piped system is much more costly than a simple borehole with handpump - being demanded by the community. This shows that community and collective action is easier to be undertaken in settlements with low population and where the composition of the people are homogenous unlike the case of Akatsi which is the district capital where people come from different parts of the country preventing them from paying the initial cost of water facility provision. The chapter also shows that neither a focus on increased water supply and access nor participation of marginalized people like poor women are likely to transform the poverty situation of the chronically poor in rural areas. Akatsi WSDB has no arrangement for the poor and vulnerable people within the community even though they are expected to benefit from community

water facilities in order to reduce their poverty and vulnerability. There is a need to cater for poor people who can not genuinely afford to pay for water. This will enable the poor to benefit from development projects in the water sector. The inability to cater for the water needs of the poor in Akatsi compels some of these poor people to continue to use untreated sources of water which is in sharp contrast to the goals of the CWSP and MDGs.

Indeed, the institutional pluralism in the construction of water facilities is de-motivating people of Torve to make additional contribution for the development of their water systems because people in Akatsi, Yaluvi and Awalavikope have been assisted without paying for the facility. The title of the policy-demand-oriented or demand-driven community water system means that communities without effective demand are automatically not provided with water even though they might be poor. Also, people in Akatsi do not have demand for the water facility the WSDB is providing them. If Akatsi's water facility is demand driven then people would have paid for the initial cost of the facility provision. The DA would also have been repaid the amount it invested in the water project. Indeed if it was demand driven then the DA would not have paid the community's 5% initial contribution for the community. Surely the fact that there is reluctance to pay demonstrates a lack of effective demand for the water facility. The policy demand-driven in the water sector of Ghana can be said to be discriminatory against rural communities which must contribute a percentage of the cost of the project whilst their urban counterparts who enjoy relatively higher and sustained incomes do not make part payment for the construction of their water facilities.

The CWSA and the Akatsi District Assembly seem incapable of carrying out their mandatory duty of facilitating and regulating the community water systems given the fact that it takes over 5 years instead of the normal 4 years for a new WSDB to be dissolved. Even the accounts of the dissolved WSDB were not audited before its dissolution. It is true that the

CWSA and the DA do not have the required staff and financial resources to execute all the duties they are mandated to perform under the CWSP. However, quarterly auditing of accounts should be made a priority if water systems are to be managed on a sustainable basis. The CWSP has enough accountability measures such as the accountability relationship between the WSDB and members of the community, WSDB and the DA, WSDB and the CWSA. There is the need to put all these checks and balances into practice in Akatsi and Torve. All the players are not performing their oversight responsibilities because, the community expects the DA to perform it and the CWSA expects the DA to do it and vice versa. There is a need to ensure that each stakeholder performs its obligation in order to meet the MDGs in the district.

What emerges from the discussion in this chapter is that politics in water management in Akatsi is not based on election of people to occupy positions within the WSDB but is reduced to appointment and the participation of people and institutions in water management. This development is fraught with contestations and power struggles. Some institutions within the community that claim allegiance to democratic principles base on election claim ownership to the water facilities that have been handed over to the community by donors. They see these facilities as community owned. Whilst those being managed by the WSDB are seen as belonging to state institutions base on the fact that the DA pay for part of the facility construction. In Akatsi and Torve, water sources can be characterized into “modes of access” as expounded by Crow (2002). The modes include private ownership of land with water on it, communal access, open access to a common resource, state/community provided water resources and market access which are discussed in detail in section 7.2 of this thesis. The politics of water management shows that different modes of access are more or less shaped by different modes of politics of water management. These modes of access led to Town/Unit

committees claiming ownership to communal water facilities handed over to Akatsi town and WSDB's interest in the management of state/NGO provided water facilities.

Indeed, the discussion provides a subtle understanding of local politics in water management. It does not include party political power struggles but public institutional contestations and local power struggles in resource management. The discussion points out that the political contestation is based solely on economic reasons which is traced down to employment and income. The local institutions and actors all attempt to seek the interest of their community which in reality is difficult to pin down. What is more, the reliance on the name 'community' is breeding reluctance to pay for water used because what belongs to the community belongs to everyone. This reluctance to pay will be discussed further in section 7.2 of the next chapter. Because of the problem of pinning down what community is, Appadurai introduces 'neighbourhood' as "*situated communities, characterized by their actuality, whether spatial or virtual*" (Appadurai, 1996: 179). The reason to use the term 'neighbourhood' in managing resources like water supply facilities in a developing country like Ghana is that it avoids political struggles, it also avoids identity claims and power struggles over the allocation and management of resources. It is the conviction of this study that providing and sustaining demand-oriented water facilities means improving the living standard of the people in the beneficiary communities (Nicol, 2000). Until the living standard of people of Akatsi and Torve is improved, the people will continue to use untreated water because it is free. Chapter 7 which is the focus of the next discussion shows the different uses to which people put the water facilities.

## **CHAPTER 7: DOMESTIC WATER SOURCES, USES AND VALUES**

### *Muddy Water Let Stand, Becomes Clear*

#### **7.1 Introduction**

This chapter is aimed at showing that the provision of clean water by the Community Water and Sanitation Programme (CWSP) and other development partners in Ghana does not lead to the water facilities being used by beneficiary communities for domestic purposes as intended. This is because policy makers assume that any new water facility (tube well or pipe water) is good enough. This chapter argues that the qualities of water-sources shape how people use water, and that people will chose not to use water infrastructure for this reason. Local people value water sources in different ways. The chapter opines that, supplying potable water to communities as it currently exists under the demand-oriented CWSP in the Akatsi District does not necessarily mean people will use the new water points. That, local people have values they attach to their water sources and appreciating the use-values of water is not merely an intellectual trick but rather has implications for the management, use and sustainability of the water facilities.

The chapter argues that the reliance on rural communities to manage the facilities for sustainability is fundamentally flawed because, the quality of the water points in these communities are not considered in the CM concept, leading to people not using the water facilities. The consideration of the number of water points (boreholes) constructed and whether they are still working in the communities as a basis for benchmarking success of water infrastructure is not the way forward to achieve the MDGs. Rather efforts should be directed at ensuring that the water points are used for their intended purposes. The quality or

appropriateness of water in social terms like taste and ability to lather should also be used as a benchmark for success.

This chapter addresses some of the aims set out at the outset of the study. Specifically, the chapter identifies the different sources of water, drawers of water, storage and uses to which each particular source of water is put by gender and income group in order to assign reasons why people use a particular water source and values people attach to the different water sources in the study area. The overall aim of the chapter is to show the way Ghana's demand-oriented water policy is affecting water use at the individual, household and community levels based on the fact that donors, especially the WB and IMF have hailed Ghana as an example of successful demand-oriented water policy (UNDP, 2006: 102).

The chapter is divided into 7 sections. Section 7.2 shows the different sources of water that beneficiaries rely on for their domestic water. The section points out that a lot of issues are taken into consideration before people (mostly women and children) take their bowls to gather water. Some of the main issues here include what the water is to be used for by local women, the distance one has to walk to gather the water, the quality of the water and its price. These decisions are not taken into consideration by donors and water planners before water points are constructed. Gender activists and policy makers have argued that, as a result of water availability there might be shifting of responsibility from women to men for household chores like water collection (Peter, 2006). Water provision at the community level is seen by donors as a means of lessening the burden of women. However, this section argues that the water infrastructure promoted under the demand-oriented water supply policy in the Akatsi District actually increases time spent gathering water. Section 7.2 argues that people in Akatsi District, one of the first districts in Ghana to benefit from the new water management policy

are still dependent on hand-dug wells and rainharvested water. This section shows that people still use their trusted water sources like rivers and hand-dug wells.

Section 7.3 shows the major drawers of water for the household. The section argues that even though water facilities have been provided at the community level, men hardly assist in water collection unless it is for their own personal use, or they gather the water as a source of income or to prevent them from paying someone to gather water for the household. Making water points available at a safe distance will not necessarily lead to men assisting in gathering water as claimed by gender activists (Charmes, 2006). Section 7.4 argues that, time gained by women through water availability at the community level is not used to benefit men (husbands) or in men's farms, as has been suggested by UN (2005). Rather, women have all the discretion to use it for their own benefit or for the benefit of the household.

The uses to which water is put is further examined in section 7.5, and here the study points out that women use water differently to men in the household. As such providing water solely for domestic use with the aim of alleviating the poverty of women is not the way forward to the achievement of the MDGs and beyond. It is argued that, providing borehole water at community level indeed re-enforces the status quo, rather than bridging the time spent on water collection by women.

The reasons why people use specific water for specific purposes are discussed in section 7.6. The section starts with an examination of the claim by women that they pay for water used by their households. It is argued here that in Ghana men rarely give money to women on a daily basis to be spent on specific items, rather they give money to be spent weekly or in bulk. The assertion by women that they pay household water bills (UN, 2005) cannot be ascertained due to the complex nature of payment systems and house-keeping in rural areas of Ghana.

The section points out that borehole water, which currently forms the majority of water sources for rural communities under demand-oriented water provision in the Akatsi District and Ghana in general, has different use-values for beneficiaries in the same way that water from the river or rain have different use-values. This leads to borehole water not being used for drinking. It is argued in this section that the rejection of potable water points sends an important message to water planners and the donor communities like NGOs that the use-values beneficiaries attach to, and derive from water are central to water point use, and should therefore be taken into account when constructing facilities.

It is argued that water experts and the donor community should not only aim at the number of water points constructed for the eradication of water borne disease but should consider the uses to which the water is put. The section affirms Shiva's (2002) assertion that water has intrinsic values closely associated with "*place-based practices*". It is argued in this section that rather than hailing the success of the current demand-oriented water provision in the study area, as is being done by UNDP (2006), a closer look should be made of the sources of water and uses to which each source of water is put. Section 7.7 provides a brief conclusion to the chapter.

## **7.2 Current Sources of Water**

The CWSP of the Akatsi District and Ghana in general has been in operation for over 16 years. However, the people of Akatsi District still depend on a variety of different sources of water for their domestic purposes. The most widely observed sources of water in the study area included pipe borne water which is available only in Akatsi, boreholes and harvested rainwater, ponds/dams, hand-dug wells with or without protection of concrete walls, and

rivers. These sources can be characterized into “modes of access” as expounded by Crow (2002: 42). These modes include private ownership of land with water on it, communal access, open access to a common resource, state/community provided water resources and market access. These modes are important because “*differences in how people obtain water can both be shaped by and can create inequality and poverty*” (Roy and Crow, 2004: 4).

Crow (2002: 78) also opined that:

“there are material and gender inequalities in each mode of access. These inequalities have consequences for the health and livelihood of the users and may hide choices about social priorities”.

Private ownership and access to water in the study area includes pipe borne water through private connections, hand-dug wells, boreholes and rain-harvested water. Communal water sources include communal pipe taps, borehole water, rivers, ponds and dams and market access includes any sources from which water is sold, especially pipe borne water, borehole water and rain-harvested water. These set of modes therefore help to show that politics of water revolves round the modes by which water is accessed within a community. Table 7.1 and table 7.2 below shows the income differentiation of the major sources of water to different households before and after the CWSP was launched in the Akatsi District.

As can be seen from Table 7.1, pipe borne water serves about 31% of the respondents in all income groups in the study area, followed by hand-dug wells and river. Poor people continue to use hand-dug wells and rivers despite their low quality. This suggests that, the CWSP’s aim of reducing the use of untreated water has not achieved much in terms of changing the habits of people to use the potable water sources. Only 1.5% of respondents use boreholes as their main source of water. One can see a number of boreholes not being used in Akatsi and Torve. Spatially, none of the respondents mention a borehole as a main source of water in

Torve even though this is the main potable water source being promoted under the CWSP in the village.

**Table 7.1: Main Sources of Domestic Water by Income after CWSP**

Income Group	Percent Response of Major Sources of Water in Akatsi and Torve After CWSP						Total (n)
	Pipe Borne Water	Tube well (Borehole)	Hand-dug Well	Rainwater	River/Dam/Lake	Unknown	
Poor	5	0.5	6.0	0.5	14.0	0.5	<b>26.5</b>
Medium	3.5	0.5	5.0	3.5	3.5	0	<b>16.0</b>
High	22.5	0.5	19.5	5.5	9.5	0	<b>57.5</b>
<b>Total</b>	<b>31</b>	<b>1.5</b>	<b>30.5</b>	<b>9.5</b>	<b>27.0</b>	<b>0.5</b>	<b>100.0</b>

Source: Fieldwork, 2007/2008

**Table 7.2: Main Sources of Domestic Water by Income before CWSP**

Income Group	Percent Response of Major Sources of Water in Akatsi and Torve Before CWSP					Total (n)
	Pipe Borne Water	Tube well (Borehole)	Hand-dug Well	Rainwater	River/Dam/Lake	
Poor	0	0.5	6.5	4.0	15.5	<b>26.5</b>
Medium	0	0	8.5	3.0	4.5	<b>16.0</b>
High	1.0	1.5	23.0	18.5	13.5	<b>57.5</b>
<b>Total</b>	<b>1.0</b>	<b>2.0</b>	<b>38.0</b>	<b>25.5</b>	<b>33.5</b>	<b>100.0</b>

Source: Fieldwork, 2007/2008

Hand-dug wells are an important source of water for respondents mainly in Akatsi. This is normally the main “hygienic” source of water that house owners built before or after constructing their houses simply because it is cheaper compared to a borehole, in addition, its construction relies on local resources like cement and labour. The water may not be available all year round and its quality may be low compared to water from boreholes. However, many households depend on it for specific uses like cooking and bathing which do not demand high

quality water. The river is heavily relied upon in Torve. Water from the borehole and hand-dug wells are rarely relied upon in Torve. A respondent complained that:

“we do not have piped or good borehole water. As such we are forced to gather water from the river and use it for cooking and bathing. During the rainy season, my household relies mainly on rainwater for all domestic chores including drinking but when it is not available we use the river” (LIH member 2, 2007).

Table 7.2 shows the major sources of water before the CWSP was initiated in the Akatsi District. Hand-dug wells, harvested rainwater and rivers were the major sources of water before the construction of boreholes and the pipe borne water. There is only 6.5% difference in those who said they use the river now and those who use it before the CWSP was initiated. The use of harvested water declined simply because it has not been encouraged in the CWSP even though it was the main source of water (25.5%) before the CWSP. People reduce the use of rainwater because the cost involved in the construction of equipments to harvest it is high to the low income households as against the already constructed boreholes.

The WSDB/WATSAN committees engage pipe attendants to manage the boreholes. Water from a borehole has low social values compared to pipe water, as such its price is lower. A bucket of water from a borehole in Akatsi costs about ¢0.10 pesewa (£0.05) whilst a bucket of pipe borne water costs ¢0.25 pesewa (£0.125). Bucket is the standard volume used to measure water. This difference in cost of water has been a major source of concern to Akatsi WSDB. The chairman of Akatsi WSDB bitterly complained of the low revenue from their operation due to the existence of these different sources of water. People prefer to gather water from Town/Unit committee managed boreholes because they are cheaper than pipe water being managed by the WSDB. As already pointed out, the pipe water in Akatsi is a mechanized borehole that pumps water to the town. This situation is however good for consumers since they can get a cheaper water source to use for different domestic chores such as bathing, cooking and drinking.

This finding shows that people use specific water for a specific purpose. Sachet water is used for drinking only in Akatsi and Torve. Sachet water is factory processed polythene-bagged drinking water. This source of water, even though not a main source of water is used almost by all households. All low-income households were observed purchasing sachet water when they “feel for it”, meaning they only drink it when they desire it. Sachet water is seen as a luxurious commodity by low income households. It costs Gh¢0.70 (£0.35) to purchase a bundle. The Ghana Food and Drugs Board, and Ghana Standard Board are trying to regularize the manufacturing of sachet water but are finding it difficult due to the number of manufacturers and their modes of operation (individuals can purchase equipment and start bagging water for sell). Plate 7.1 shows a bundle of sachet water used by members of a high-income household in Torve.

**Plate 7.1: Two Bundles of ‘Pure Water’**



Source: Fieldwork, 2007/2008

Sachet water provides at least safe, “hygienic” and accessible drinking water to people and communities that find it difficult to access good quality water from their taps or boreholes. This water can be purchased from road-side kiosks in each community. People owning

refrigerators buy the sachet water in bundles and retail it to other consumers. A pack of one bundle contains about 36 sachets of water. Men in low-income households use this water more frequently than women and children. This can be attributed to the purchasing power of men in the household as compared to women and children. This type of water is however not a main source of water but used occasionally. A female respondent from a low income household explained that “*she occasionally buys sachet water unlike her husband who always buy it whenever he is about to eat*” (LIH member 2, 2007).

Observation in the middle and high-income households with regards to sachet water use shows different results. This water is not purchased on a daily basis but purchased in bundles either two or three at a time. A pack of one bundle can last about five days for a household of four. Purchasing a bundle of water from a kiosk to use is more economical than buying it from the road-side kiosks who earn profit from their activity. A man in a poor household explained:

“I have no fridge. I drink pure water [sachet water is locally called pure water because it was deemed to be pure with no impurities] mostly in the afternoon when the weather is hot but unfortunately I have no electricity nor fridge to put the water in it as such I have to buy the refrigerated water one at a time” (LIH member 1, 2007).

These different sources of water in the study area confirm the existence of Crow’s (2002) modes of access to water. For example, one can hardly differentiate between communal water access and open access or market access in the study area. This is because water obtained from the river can be regarded as communal water and at the same time open access. In the same way, water found on a plot of land belonging to an individual that has not been treated or that does not involve any investment made on it can be collected by people in the community either for domestic or economic use. However, it is the responsibility of the user to leave the water in a good state for the owner and other users to use when needed. One can say that Crow’s categorization of water sources into private ownership, communal access,

open access, state or community provided, and market access are not mutually exclusive but rather, one can find a system of overlapping flexibility which indeed makes complex the notion of what and which water is to be commodified in the Akatsi District.

The new demand-oriented water infrastructure in Ghana and in the Akatsi District can be said to fall under open access to a common resource and at the same time market access since some people gather the water freely in their communities (Torve) and others purchase it as a commodity (Page, 2005). What makes water access in the study area very interesting is the fact that there is competition between all these different water sources. To the people, water from the river, borehole and pipe can all be used to satisfy for example domestic or economic needs leading to limited reliance on water that has to be purchased from the pipe or borehole. Market access to water reinforce economic and gender inequalities in the community that the CWSP is aimed at reducing. *“These inequalities have consequences for the health and livelihood of the users”* Crow (2002: 78). The people who usually draw water for their households are discussed in the next section.

### **7.3 Drawers of Water**

White et al (1972) reported the results of a multidimensional research effort spanning 34 communities in Kenya, Tanzania and Uganda in the late 1960s and this work remains one of the most comprehensive and compelling accounts available on household water gathers and use in Africa. Drawers of water II (Katui-Katua, 2002) presents the findings of a large-scale, longitudinal, cross-sectional study of domestic water use and environmental health in Kenya based on the landmark work of 1972. Drawers of water II concentrates on changes in domestic water use over three decades in 12 rural and urban sites that reflect the diversity of

environments, living conditions and water service levels found in Kenya. Drawers of water II situates its results in the wider policy context by taking into account the various shifts in the policies, strategies and guidelines related to water resources development and management. The study revealed both positive and negative changes in water use, in terms of levels and types of water use, its reliability, access and cost. Results from drawers of water II indicated that while measurable improvements have been achieved in some quarters, there have been significant declines in others.

In Ghana, as is in other developing countries of Africa, women are usually seen and known as drawers of water (Bour, 2004; Engel, et al., 2005; Eguavoen, 2007; Eguavoen and Youkhana, 2008). This role is performed first and foremost at the household level. However, domestic water collection depends on the household composition, circumstances and needs, which are organized according to local social norms. In all the six households observed, the primary water collectors were the female head, wife or female partner, or young girls. Observations concur with Delap (2000) and Rose (2000) that there is gender bias in allocating time to household work, especially drawing of water. This gender bias in time allocation for water collection tends to benefit the more physically able-bodied men at the expense of weaker women and children. However, the norms of the society are also important in regulating women and men's economic and household activities (Kevane and Wydick, 2001; Nukunya, 2003). The social structure and norms of the people of Akatsi District are noted to be the major determinant of drawers of water, thus conforming to Hunter's (2006: 172) assertion that:

“appropriate cultural gender roles appear to shape household strategy with regard to resource collection, while also shaping perceived opportunity costs associated with such strategies”.

These social relationships, Cleaver (2005: 896) notes:

“constrain as well as enable, and how the very embeddedness of institutions in social life and cultural norms reproduces relations of inequality and marginalization”.

Women in the study area were found to make the decision on which water to draw at a particular time and this has become routine whereby each member knows which water to collect at a particular point in time and for a specific activity. Using children to gather water for the household was not seen as a problem as shown by a female respondent who pointed out that:

“I gave birth to them (children) to assist me with the domestic chores. My children cannot cook for me at their age; neither can they assist me in the market. Look, I have to attend the farm daily or the market on market days. Water collection is the only activity that they can help me with” (LIH member 4, 2007).

This remark provides evidence of the important role children play in household maintenance and daily non-income earning activities in Ghana as in other African countries (Robson, 2004a; 2004b). There is no gender differentiation among children who draw water in a household. Both female and male children assist with water collection. Children are taught water collection at a young age by following their mother or other elder siblings whether they are girls or boys.

Observation of a low-income household in Torve showed that men drew water only when they needed it for a particular purpose or when water was not available in the house. In one of the low income households, there was a situation where water was not available in the house and the male member required water, he picked a bucket and drew water for his need and not for the entire household. Where he could not go and gather the water himself, he either borrows a bucket of water from a neighbour, returns it when water becomes available, or he asked a neighbour's child or wife to get him water. In one particular case, a man from a poor household returned from the farm but there was no water in the house for him to bathe. He

decided to draw water from the river himself but was stopped from gathering the water by a neighbour's wife who gave him a bucket of water to bathe. He explained:

“custom demands that women assist men in gathering water, especially the married men. Where a woman sees a married man gathering water, she has the responsibility of assisting him. She can either do this herself or ask someone to do it for him. This is just a sign of respect and nothing more” (LIH member 3, 2007).

This remark applies to gathering water in general, not only for bathing. An observation in the field showed that men drew water when they needed it for economic ventures like brewing ‘*Akpeteshie*’, a local dry gin, when they were building or repairing a house or when they earn income from it. In Torve, men in low-income households rarely draw water for the household let alone for their own use.

It was observed that households where both men and women have achieved higher levels of education, have higher income, and have a means of transporting water deviate from the normal practice of women gathering water for the household. Men in high-income households were seen taking trucks or cars to go and gather water for the household. A man from a high-income household who used a truck to gather water pointed out that:

“I have to gather the water for the house or I pay someone to gather it for the household. Since I do not have the money to pay someone to do it for me, I have to gather it myself. My wife will not pick a bucket or a basin to fetch water for the house as such I have to do it myself” (HIH member 1, 2007).

In households where both the man and his wife have achieved a high level of education (either secondary or tertiary level), the man therefore fetches water for the house by using his car. One such educated man who was seen using gallons to gather water with his car in Torve explained that:

“What is the point asking my wife to use bowls on the head to fetch water for the household while my car is available. She is not my slave but my partner as such I can assist her to fetch water when there is none at home. Don't forget my brother, if water is not available, there will be no food in the house and I cannot go to work” (HIH member 1, 2007).

This explanation clearly stretches gender norms in the society where women are seen as the main water collectors. This also conforms to the feminist argument that the difference between femininity and masculinity is not natural. Boys and girls, men and women are taught how to behave in culturally appropriate feminine and masculine ways in order not to be labelled abnormal or deviant (Laurie et al, 1999), but there are exceptions. People therefore try to conform to such appropriate gender behaviour and this is not different in water gathering. Feminist geographers have over the years shown that “*identities are constructed in and through particular sites, spaces and networks within particular places*” (Laurie et al, 1999: 29). These identities are being constructed in water collection in the study area. A man in a middle income household however points out that:

“he would not take a bucket or bowl on his head to go and gather water for his household. He will use his truck with the assistance of his children to gather water for the household if it becomes necessary” (MIH member 2, 2007).

These findings from Torve suggest that, gender is performed by both men and women in the water sector and not entrenched at the household. Performing gender in the water sector in the study area has been conceptualized in the form of gender norms where objects, activities and roles of water collection have been stereotyped culturally in terms of biological sex and assigned to women (Liben and Bigler, 2002). These gender stereotypes are in place at the household level and children copy them as they grow. Boys less than ten years of age were observed fetching water alongside their sisters using 4 litre emulsion paint containers. Boys from the same household but of older age were however told by their parents that bowls are meant to be used by girls and boys are to use buckets in water collection. When a bucket is not available in the house, boys refused to go to gather water with their sisters using bowls. Nothing is however wrong with a girl using a bucket to gather water for the household. In a sense, girls are reared to view water collection as their domain and boys also see water collection as a girl’s domain. This early gender development in the water sector in Torve is

not different from observation on the use of toys by boys and girls and can be associated with the socialization process (Ruble et al., 2007; Blakemore et al., 2009). The perception of boys using buckets and girls using bowls to gather water can be attributed to the ease with which water can be carried with a bucket as against bowls.

Women become the major collectors of water in the study area not based on their sex but due to the socialization process that emphasises differential treatment of boys and girls in water collection by their parents first and foremost at the household level. It is further extended to other family members and the entire community. I found gender norms, roles, behaviour and practices in water collection and use in Torve to be socially constructed (Leaper, 2000; Chodorow, 1995) which in turn affects the behaviour of boys in terms of water collection as they climb through the stages of life, creating a re-enforcing loop. This loop is however being changed through formal school education, income and technology, for example cars and trucks. Water provision should aim at bridging gender gap by making water easily accessible in every house. Having discussed the main reasons why women are the main drawers of water, the next section will be used in discussing the daily activities of people to bring water to the house.

#### **7.4 Daily Activities Involved in Bringing Water Home**

This section discusses the daily activities people engage in to bring water to the house. It involves the distance people have to walk from their house to the water source and back, and the time used in gathering the water before storing it. This will help determine whether the CWSP has achieved its aim of cutting down on; the distance people walk to gather water,

time spent in gathering water and use of untreated water. It should be noted that these factors also influence water sources that are used in the community.

#### 7.4.1 Distance Walked and Frequency of Gathering Water

A major characteristic of the CWSP in the Akatsi District is the remarkable geographical disparity of coverage of water points across communities and wards. The target of the CWSP is to decrease the distance people travel to gather water. A commentator on water supply projects in developing countries (Katui-Katua, 2002) point out that the distance travelled to gather water by women is decreasing as a result of water infrastructure provision in communities. The distance people walk in Torve and Akatsi, a district that was among the first in Ghana to pilot the CWSP, is shown in Tables 7.3 and 7.4 below.

**Table 7.3: Distance of Major Sources of Water in Akatsi and Torve Before CWSP**

Community	Percent Response of Distance of Major Sources of Water in Akatsi and Torve Before CWSP (%)							Total (n)
	Less than 30m	>30m but <100m	>100m but <500m	>500m but <1km	More than 1km	Source of Water not far	No Response	
Akatsi	29.0	23.0	12.5	3.5	4.5	0.5	0	73.0%
Torve	1.5	18.0	6.5	0	0	0.5	0.5	27.0%
<b>Total</b>	<b>30.5</b>	<b>41.0</b>	<b>19.0</b>	<b>3.5</b>	<b>4.5</b>	<b>1.0</b>	<b>0.5</b>	<b>100.0%</b>

Source: Fieldwork, 2007/2008 (n=200)

**Table 7.4: Distance of Major Source of Water in Akatsi and Torve After CWSP**

Community	Percent Response of Distance of Major Sources of Water in Akatsi and Torve After CWSP (%)						Total (n)
	Less than 30m	>30m but <100m	>100m but <500m	>500m but <1km	More than 1km	Source of Water not far	
Akatsi	36.0	32.5	3.5	0	0.5	0.5	73.0%
Torve	1.0	20.5	5.5	0	0	0	27.0%
<b>Total</b>	<b>37.0</b>	<b>53.0</b>	<b>9.0</b>	<b>0</b>	<b>0.5</b>	<b>0.5</b>	<b>100.0%</b>

Source: Fieldwork, 2007/2008 (n=200)

Table 7.3 shows that people on average walked more than one kilometre to gather water before the CWSP was initiated. Some of the residents in Akatsi pointed out that they have to walk to gather water from the dam that is about 2 kilometres from the city centre. There is no marked difference between income groups in distance travel to gather water before and after the CWSP was initiated. This can be attributed to the nature of housing in the communities. No income group can be said to dominate in a suburb of the communities. They are all mixed together.

The distance people walk to gather piped water in Akatsi has however decreased as a result of the construction of the stand pipes and boreholes in the town. Table 7.4 also shows that the majority of the respondents do not have to travel more than one kilometre to get water. The respondent who travelled more than 1km to gather water is in Akatsi. It can also be seen from Table 7.4 that only one respondent claim s/he travel more than 1km to gather water. Analysing Tables 7.3 and 7.4 shows that people in Torve did not experience any marked difference in distance travelled to gather water before the borehole was constructed and now. Although a potable water facility has been provided in Torve, people still find it more desirable to walk longer distances to gather untreated river water. Many people did not travel more than a kilometre to gather water before the borehole was constructed in Torve because the community was small and located near the river. The population was about 460 in 1984 but rose to 1,028 (GSS, 2002a).

Only 5.5% of respondents in Akatsi and Torve said they travelled more than 1 kilometre to gather water before the boreholes or pipes were constructed. Table 7.3, also shows that one respondent in Torve could not determine the distance travelled to gather water before the borehole was constructed claiming it was not far. This finding of people now acquiring water closer to their houses in Akatsi Township is a major achievement of the CWSP.

In Torve, people devise their own methods of gathering water at the river-side. People use the calabash to fetch water into their equipment such as buckets, barrels, and basins. Using a calabash to collect water does not disturb the water. Therefore people collect water that has low turbidity or low impurities as compared with water collected with plastic cups. Observation at the river-side shows that people who use larger equipment like drums to gather the water walk deeper into the water before using either 4 litre paint containers or buckets to gather water into their drums. This is done to fetch water that is clean with low impurities and to enable them to gather enough water in their buckets.

It was observed also that, the number of times one gathers water by and for a household depends on a number of factors like the household size and income. Larger households gather water more frequently than smaller ones. However, the income of the household is of greater importance. Higher-income households are able to purchase larger equipment to gather water every other day or weekly whilst some low income households gather once or twice a day. Table 7.5 below shows the responses on how often people gather water for their households.

**Table 7.5: Number of Times Water is Gathered for Use in a Household (n=200)**

Income Group	Number of Times Water is collected for Use in Akatsi and Torve (%)						Total (n)
	Once a Day	Twice a day	Anytime I need Water	Weekly	Occasionally	Unknown	
Poor	12.0	3.5	7.5	3.5	0	0	<b>26.5%</b>
Medium	7.0	2.0	3.0	4.0	0	0	<b>16.0%</b>
High	11.0	4.5	27.0	12.5	0.5	2.0	<b>57.5%</b>
<b>Total</b>	<b>30.0</b>	<b>10.0</b>	<b>37.5</b>	<b>20.0</b>	<b>0.5</b>	<b>2.0</b>	<b>100.0%</b>

Source: Fieldwork, 2007/2008

As can be seen, about 30% of households gather water once a day whilst 37.5% have no specific water collection time but rather they fetch water when they need it. All households observed preferred gathering water early in the morning than late in the afternoon due to the

fact that, river water collected during the morning is devoid of human mis-use. Since the water collected is at times used as drinking water, they find it appropriate to gather it early in the morning since it is considered more “pure” without human contamination.

Transportation of water in Akatsi and Torve is done either on the head mostly by women and children or by truck at times by men as shown in Plate 7.2 and 7.3 respectively. Using a truck to gather water is done by both men and women but men were found to undertake it more often than women. People who use drums always carry the water home on trucks while women use basins to carry the water home on their heads. At times, men undertake water collection using trucks either alone or with the assistance of a relative. The trucks are privately owned. Some people hire their trucks to others to gather water.

Plate 7.2: Women Carrying Water Home



Source: Fieldwork, 2007/2008

Plate 7.3: Man Gathering Water with a truck



Source: Fieldwork, 2007/2008

Women and children who use trucks to gather water most of the time do it in groups of 3 or 4. The number of people who push the truck also depends on the number of drums put on the truck (the average is two). This method of water gathering reduces the number of trips people have to make to water points thus saving time for other ventures. The use of trucks by men in

a sense changes gender norms in water collection, however men gather water with trucks in order to avoid paying for water collection by others as explained by a respondent:

“I will use my truck with the assistance of my children to gather water for the household if it becomes necessary” (MIH member 2, 2007).

Using truck to gather water reduces the time used in water collection as discussed in section 7.4.2 below.

#### 7.4.2 Time Used in Gathering Water

Time spent in gathering water is of paramount importance to the CWSP in Ghana and other developing countries. This is because time gained from walking long distance to collect water can be used in undertaking income generation ventures for poverty reduction. One of the main aims of the CWSP is to reduce the time spent by people, especially women, in gathering water. The total time respondents said they spent to gather 20 litres of water was calculated for the round trip. My observation in Torve showed that women spent more than 20 minutes on average gathering a 20 litre bucket of water. Table 7.6 below details the time people said they spend doing a round trip to gather water in Akatsi and Torve.

**Table 7.6: Round Trip Time Spent by Respondents in Gathering Water**

Income Group	Round Trip Time Spent in Gathering Water for Use in Akatsi and Torve (%)					Total (n)
	Less than 30 mins	> 31mins but <1hr	Over 1hr	Between 1hr and 2hrs	Unknown	
Poor	5.5	9	4	8	0	<b>26.5%</b>
Medium	8	3	1.5	3.5	0	<b>16.0%</b>
High	22	21.5	5	7.5	1.5	<b>57.5%</b>
<b>Total (%)</b>	<b>35.5</b>	<b>33.5</b>	<b>10.5</b>	<b>19</b>	<b>1.5</b>	<b>100.0%</b>

Source: Fieldwork, 2007/2008 (n=200)

The majority of the respondents (35.5%) spent less than 30 minutes gathering water, followed closely by between 31 minutes and one hour. Combining the two responses suggest that 69%

of people spend less than 1 hour gathering water. It is a fact that time spent in gathering water will depend on the location of the house of the individual and the water source. However, it is part of the requirement of the CWSP to cut down on the time people spend in gathering water (CWSA, 1996). It should be noted that the time used in water collection is not remunerated by the household. The more time women used in gathering water, the lower time that is available for them to use in other income earning activities. A household with an average of five people requires over 150 litres of water a day. Assuming only one individual gathers water for the household, then, a total round trip for a household of five adds up to over four hours a day spent in gathering water. The time used to gather water before the borehole was constructed in Torve was said to be the same but in Akatsi it has actually increased due to the time spent in queues waiting for water to flow.

Women spent more hours gathering water than men for a number of reasons. The first is that men are given preferential treatment when they arrive at the water point, be it the river or the communal water stand. Secondly, men pointed out that they do not like to be seen drawing water, especially by women. As such at times they run to the water point to draw the water and rush back home, cutting down the time spent on the round trip and this re-enforce the gender norms discussed above. Some do not go to draw the water themselves but send other relatives to gather water for them.

In Akatsi, the stand pipes do not flow every hour of the day. The water flow in the stand pipes between 08:30hrs and 12:00hrs. One woman complained bitterly about this saying that the pipes are opened when women are at work even though the members of the WSDB and the DA knows that people will not be at home when the pipes are opened. A female respondent lamented that;

“we complained to the water board, the assembly man and the Member of Parliament to let them open the pipes at a time conducive to all especially workers but it fell on deaf ears” (PPA 2 , 2008).

A board member responded that;

“the time of opening the pipes was arrived at a consensus between the community and the water board. The board works on a voluntary basis as such that is the time most suitable to the volunteer” (WSDB member 2, 2008).

Another reason given for opening the pipes during these times has to do with the distance of the pumping station to Akatsi Township. Another water board member pointed out that someone has to travel to the water source (over 5 miles away) to open the pumps and come back to open the reservoir for the taps to start running:

“I would volunteer to wake up early to go and open the valves for water to flow if am paid well for the job am doing” (WSDB member 2, 2008).

This clearly adds to problems with the CM of water facilities which was discussed in detail in Chapter 6.

Women have innovated a system to cut down on the overall time spent on water gathering in Akatsi, which is to use water containers to queue on a first-come, first-serve basis. This is now recognised all over the town. Rarely does conflict emerge as a result of this innovation. Individuals place their water containers in a queue overnight or on a daily basis and when the water starts flowing in the pipe, word goes round the community and the owners rush to draw the water. Plate 7.4 shows a typical scene in Akatsi at 5:30 pm when everybody knows that water will not be available at that time.

**Plate 7.4: A Typical Water Point in Akatsi Township**



Source: Fieldwork, 2007/2008

This practice not only cuts down the time spent gathering water, but also prevents the development of confusion surrounding who come first to gather water. People can spend long hours gathering water in Akatsi due to the long queues as a result of the times the stand pipes are open and the number of hours the water flow. What is more, it becomes very difficult for children to assist in gathering water for the household due to the time that the water taps are opened which is around 08:30hrs when most of them are in school.

#### 7.4.3 Water Storage

The water gathered from the different sources is stored in different ways based on the income of the household. Storing water in huge earthen-ware or cement pots inside a compound house (a house that is shared between different households as shown in Plate 7.6) is a common method in both Akatsi and Torve. High-income households construct large storage reservoirs which they use to harvest rainwater as shown in Plate 7.5. Plates 7.5 and 7.6 are typical rain-water harvesting facilities of different income groups in Akatsi.

**Plate 7.5: Rain Water Harvesting in a High-Income Household in Akatsi**

**Plate 7.6: Medium-Income Household's Rain Water Harvesting System in Akatsi**



Source: Fieldwork, 2007/2008



Source: Fieldwork, 2007/2008

Some rich households however, assist the poor by offering rain harvested water for free. Those rich households who sell water as a source of income however exploit the poor. Findings in Torve showed that low-income households that do not have large storage facilities tend to purchase harvested rain water from richer households, making sense of the saying that the rich shall take away from the poor what they have due to their poverty. In Torve, a bucket of rainharvested water costs twice as much as it cost in Akatsi. A respondent from a poor household in Torve pointed out that;

“it cost me 20 pesewas (10 pence) to purchase 25 litres (a bucket) of rain water. There is nothing that I can do but to buy the water since the river is muddy during the dry season and not good for drinking” (LIH member 4, 2007).

Further, it defeats the CWSP aim of providing water based on CM principle mainly for the poor. The CWSP however insists on providing boreholes in towns and rural areas. Constructing household water storage facilities such as shown in Plate 7.5 is capital intensive. However, a local arrangement is in place in the communities between the artisan and the customer for the construction of the small storage facilities. The amount charged is calculated according to the prevailing market price of cement. At the time of the study, a bag of cement cost  $\text{¢}8$  (£4). Constructing a 100 litre storage facility will require about 5 bags of cement

which adds up to around ¢40 for cement alone. Adding ¢40 as workmanship totals ¢80 (£40). An artisan told me that they charge the full expenditure incurred in constructing a storage facility as a guarantee against breakage. More often than not they face problems of replacing a badly constructed storage facility due to a number of factors like inadequate cement and sand combination, or poor sand quality. Should the facility develop faults or cracks, they are forced to reconstruct it from their own resource. As such they charge the full cost of cement used in the construction in order to be able to replace a damaged water storage facility. In total, a household spends about ¢80 cedis (£40) on a 100 litre storage facility. This amount, when compared to the income of poor households amounts to over two months income which they cannot afford because the storage facilities are individually owned. The inability to construct large storage facilities increases the number of trips poor households, especially women, have to make in water collection which could have been used in other income generating ventures to earn income to improve their standard of living.

Low-income households were observed storing their water in buckets, bowls, pots or drums with low capacity. Middle and high-income households do not gather water daily since they have larger equipment as compared to poor households to store water. Water gathered in yellow gallons called 'Kuffour gallons' also serve as storage containers. However water directly gathered from the river in bowls or buckets are poured into pots or containers outside the house and this container is not covered with a lid to prevent environmental contamination most of the time. The gallons were introduced during the administration of former Ghanaian President John Kuffour (hence their name). A cup or calabash is used to fetch the water either from the outer container or from the inner pot (a detailed discussion of the inner pot follows in section 7.6.4). Most of the time, the inner pots are covered to prevent its contamination. This is a contradiction, because the inner pot has a roof over it whilst the outer container is exposed to all sorts of contamination. No explanation was given for this practice. It should be

noted that the gallons are at times beyond the means of low-income households leading to their dependence on bowls and buckets which increases the round trip spent on water collection. Having discussed drawers of water and how the water is stored by different income groups, the next section will be devoted to what the water gathered is used for.

## **7.5 Uses of Water**

In section 7.4, it is shown that water is gathered mainly by women and children and collecting water at the public stands increases the time used by households to gather the water and decreases the time available to undertake other income ventures. People therefore resort to using their usual water sources like hand-dug wells and streams that are free or closer to users. Also, men do not necessarily gather water for the household under normal circumstances.

It was difficult to determine the amount of water used by each individual due to factors like laundry being done weekly, people bathing at times once or 3 times a day depending on age of the person, sex and season of the year. People also used different types of water for different purposes like sachet water for drinking while others spent most of the day in the farm. These problems made it methodologically difficult to calculate the amount of water used by a household a day. Above all these, the water mostly used is not potable. On average each individual in a middle-income household uses about 40/l of water a day for cooking, personal hygiene, laundry, drinking and cleaning utensils. Therefore, a middle-income family of 7 uses about 300/l of water a day. This figure is substantially below international guidelines such as WHO's (1993; 2008) recommended average of 80-100/l per day per person.

As can be seen from table 7.7 below, the only use to which the borehole water is put is for construction such as mixing cement and for buildings. People rarely use the borehole water for domestic activities. There was a story in Torve that a European contractor brought a water tanker, added some white chemicals to the borehole water and used a mechanical pump to draw the water into his tanker before leaving. When members of the community fetched the water from the borehole, its taste was better due to the chemicals added and they started to use it. After about two to three weeks, the water quality reverted to its former bad taste and the people stopped using it. Critics might argue that the contractor was merely being physically developing the borehole water for the people to use the water and no chemicals were added at all. The question then is why the taste of the water changed after the contractor added the white substances? This shows that at least the water is somehow good when treated, but due to the policy of demand-oriented CM of water facilities, it is difficult for the community to procure the resources to purchase the chemicals resulting in the under-utilization of the water from the borehole. Water gathered from the river, borehole, rain-harvested, or sachet water are all used for different purposes depending on the source and the activity one is involved in. Two threads however can be seen from these uses. They are used basically for domestic purposes and for income generation ventures as discussed below.

#### 7.5.1 Domestic Uses

It is important to note that women have to consider many things before they pick up their equipment to gather water. This decision making process has not been considered by water experts in their provision of rural water facilities. The domestic use of the water gathered becomes very important in order to highlight the social and economic issues relating to water gathering. In Torve, water use patterns revolve around the river and rain water even though they have the opportunity to use borehole water for other purposes like brewing alcohol and

drinking. A female member of a poor household observed in Torve illustrated the nature of water use decision-making;

“I have no alternative but to use different sources of water or different purposes. When it is for drinking, I buy water from the rain water vendors, when it is for cooking and bathing, I gather water from the river”. I always pray for rain so that I can harvest it for use” (LIH member 4, 2007).

A man also pointed out that;

“I do not take any decision on which water to use. All I do is to fetch water that is available to bathe or drink. It is the responsibility of my wife and the children to fetch water. When there is no water at home, I ask my children to fetch me some” (LIH member 3, 2007).

Tables 7.7 and 7.8 below shows the different sources of water and what the source is used for by poor and rich households in Torve.

**Table 7.7: Uses to Which Different Water Sources are Put by Poor Households in Torve**

Sources	Drinking	Laundry/ Domestic Cleaning	Cooking	Brewing Alcohol	Bathing	Construction
Sachet Water	X					
River	X	X	X	X	X	X
Rain water	X	X	X		X	
Borehole						X
Pond		X	X		X	X

Source: Fieldwork, 2007/2008

It can be seen from Table 7.7 above that the river is a main source of drinking water for the poor households observed. Most of the respondents pointed out that the river is good that’s why they mostly drink it.

**Table 7.8: Uses to Which Different Water Sources are Put by Rich Households in Torve**

Sources	Drinking	Laundry/ Domestic Cleaning	Cooking	Brewing Alcohol	Bathing	Construction
Sachet Water	X					
River		X	X	X	X	X
Rain water	X	X	X		X	X
Borehole						X
Pond		X	X		X	X

Source: Fieldwork, 2007/2008

In contrast to the poor households, it can be seen from Table 7.8 above that, rich households mainly drink rain harvested water unlike the poor households who rely mainly on the river shown in Table 7.7. Also, high-income households buy sachet water but preferences also exist in which one should be bought which is discussed in section 7.6.4. In essence, income-based preferences exist regarding which water is to be used in a household. In Akatsi, the decision-making process becomes very complex due to the availability of different water sources like the community piped system, sachet water, rain, borehole, hand-dug well and water from the dam which is distributed by vendors using water tanks.

**Table 7.9: Uses of Different Sources of Water in Akatsi**

Sources	Drinking	Laundry/ Domestic Cleaning	Cooking	Brewing Alcohol	Bathing	Construction
Sachet Water	X					
River		X	X	X	X	X
Rain	X	X	X		X	X
Borehole	X	X	X		X	X
Pond		X	X		X	X
Hand-dug Well	X	X	X	X	X	X
Pipe	X	X	X		X	

Source: Fieldwork, 2007/2008

The majority of people in Torve still use the river for their daily household activities like cooking, washing, cleaning, child care, and drinking. However, people in Akatsi use water either from the stand pipes or privately connected to their houses and hand-dug wells for their domestic chores and mainly for drinking as shown in Table 7.9. The water sources that are used mainly for all household domestic purposes are the hand-dug wells and harvested rainwater however, this water source does not form part of the demand-oriented water provision under the CWSP in the district. Not a single hand-dug well was constructed to assist in income generation activities but the people are expected to pay for the use of the piped water system. People in Akatsi Township are restricted in their use of water due to the cost involved in its acquisition and the time they have to spend in gathering the commodity

due to its rationing by the water board. Water from rivers and the dam are used for all domestic including drinking purposes however, respondents pointed out that they do not boil it before drinking even though they are aware of the benefits to be derived from boiled water.

Some of the reasons given for not boiling water before it is used include;

“I have no time to boil the water. My household have never been affected by water borne disease so why should I boil the water? I would have boiled the water to prevent guinea worm but there is no guinea worm in it” (MIH member 4, 2007).

A man in another household also responded that;

“we would have boiled the water before drinking but we do not drink water from the river most of the time. Also, it is very difficult to get fire wood or charcoal to cook these days let alone to boil water before drinking” (MIH member 1, 2007).

In effect, lack of energy sources is seen as a very important limiting factor for boiling water before use. The lack of water borne diseases in the community has also encouraged the use of raw water from the river. Water use differs in terms of location of the water from the household. The longer the distance one has to travel to gather water, the lower the water usage. For instance, people living in Kpotame in Torve use less water a day compared to people in central Torve due to their distance from the water. Observation also shows that poor households use less water mainly due to the number of times they have to collect water and the inability to purchase large water storage devices. People have to walk over 1 kilometre from Kpotame to the river to gather water. Also important however is the equipment used to gather the water. People with push trucks use bigger containers to gather water and therefore use more water compared to people who gather water on their head. This simple difference in water collection also reflects the wealth of the household. People with high incomes are able to purchase push trucks to gather water while people with low incomes have to gather water on their heads or rent push trucks to gather water at a cost of  $\text{¢}5$  (£2.5) a day.

The assumption that rural water users will use any available water for any activity that requires water does not apply to water use in Torve. People refused to adjust their water

related practices to the water sources that have been provided for them and continue to use their more convenient sources instead. People in Torve are not using the potable water for drinking purposes. People did not change their behaviour to the use of potable water sources like boreholes because the water tastes bad (salty). This can be said to be the best explanation for the lack of behaviour change in water use. This defeats the expectations of the water providers to provide potable water at a close distance for drinking purposes. It seems the water might be used for income generation which is discussed below.

### 7.5.2 Water for Income Generation

Many studies point to the role women play in providing water to the household (Green and Baden, 1995; Nyong and Kanaroglou, 2001; Eguavoen, 2007; Eguavoen and Youkhana, 2008). Findings from this study confirm the role played by women in providing, managing and safeguarding water at the household level. However, women's role in water far extends beyond the provision of water for domestic use. Women are now at the forefront in using water for income generation and micro-enterprises.

Observation in Akatsi and Torve showed that some women use water for activities like the production of food for sale to the community. Some of the foods produced include *koko* (porridge made from fermented corn flour) beans with *gari* (cassava flour), *kenkey* and *banku* (all prepared from fermented corn). Some women use the water in watering their livestock of sheep, goats or poultry. People of Akatsi and Torve also use water for their gardens and small scale irrigation near their houses especially during the dry season. Some of the crops they water include pepper, tomatoes, okra, cabbage, carrots and lettuce. These crops are seen as "women's crops" and are mainly for home consumption but some are sold to neighbours in case the produce is too much for the household to consume.

Many people interviewed both in Akatsi and Torve complained of the cost of water for small scale productive use. A respondent in Torve pointed out that;

“We do not have piped water in our community. They constructed borehole for us and we were happy. After using it for some time we realised the taste has changed. It is now salty and we do not like salty water. Some people ask me which water I use for my food and I have to tell them the truth. It is more expensive to use rain water but I have to use it otherwise, people will not buy my food” (MIH member 4, 2007).

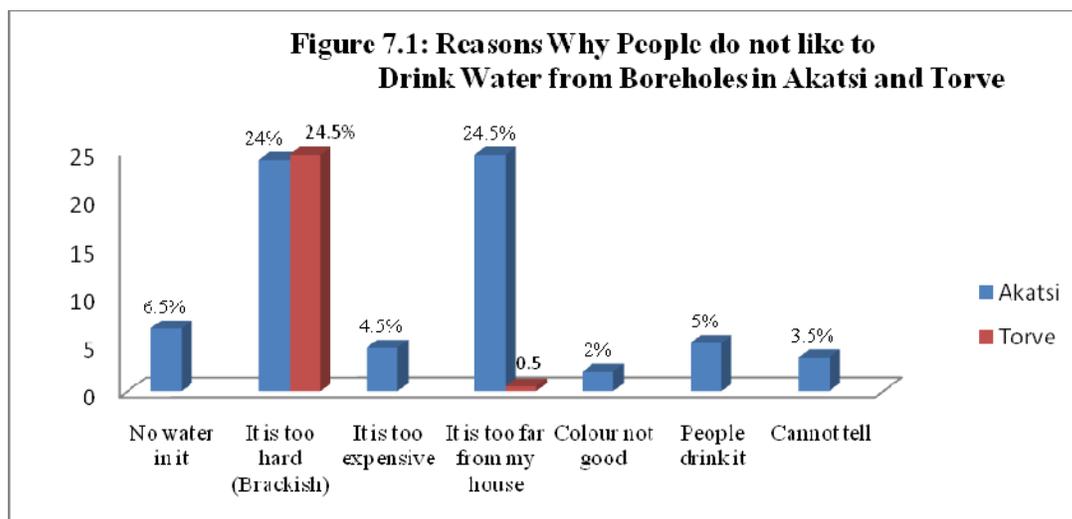
The major productive use to which water is put in Torve is for the brewing of ‘*Akpeteshie*’, a traditional dry gin which contains about 50% volume of alcohol. Brewing of this product is a major occupation for women and this economic activity has attracted a lot of people to Torve due to the easy and free access to river water all year round. It was observed that people who produced alcohol most of the time own trucks for water collection and they happen to be within the middle-and-high-income groups of the community. Those who do not own trucks have to hire one from neighbours. Women in a group of two or three use trucks to gather water for brewing *Akpeteshie* and domestic use. At times, women hire men to gather water with push trucks for them. The *Akpeteshie* is used mostly during celebrations and traditional gatherings but is also abused by some people both men and women.

Men use water from the river for brick making and the construction of houses. It was observed that these activities are done far from the river to prevent contamination. Men also use water for irrigating crops near the house. However, this use is mostly women’s affair. Men also use water from the river for their animals but their animals are reared on a commercial basis unlike women who undertake watering of animals for the household. This shows the uses to which different sources of water are put, apart from borehole water. Providing borehole water as a source of drinking water did not stop people from using usual sources of water in the community but only solves a fraction of the uses to which water is put. Even Akatsi Township which has different sources of water suffers from a lack of

patronage of the new demand-oriented water facilities due to a number of factors as will be discussed in the next section. It can be argued also that, the new water policy does not cater for productive uses of water like petty trading, manufacturing, brewing and gardening. The reasons for the rejection of the water sources are discussed in section 7.6 below.

## 7.6 Reasons Why People Do Not Use Water from the Boreholes

There are a number of factors that makes people of Akatsi District, specifically Torve, reject the use of the borehole water that has been provided for them by donors and through their own contribution. In Torve, just like other rural communities in Ghana, where there are alternatives to water sources, people do not like to drink water from the borehole as intended due to its poor quality as can be seen in the responses from the study in Figure 7.1 below.



Source: Fieldwork, 2007/2008 (n=200)

Figure 7.1 shows that the majority of people in Torve pointed out that the borehole water is too hard (brackish) leading to its rejection. Only one person mentioned distance as the reason why the water is not being used. In contrast, people in Akatsi mainly mentioned distance and hard taste as the reason why it is not used. There are no differences in responses to taste by different income groups. Age is also not a factor that prevents people from using the water. Members of all households both young and old pointed out that the hard taste is the main reason for not using the borehole. The price people pay for water is discussed next.

#### 7.6.1 Payment for Water

Water pricing is very important for developing countries in terms of poverty reduction, its sustainability and the achievement of the MDGs. Providing water to rural communities in Ghana involves a lot of fixed costs and high recurring expenditure in the form of electricity bills of small town water projects. Water pricing policy in developing countries can be seen to comprise of a lot of financial considerations like economic efficiency, cost recovery, equity and water conservation (Diakite, et al, 2009). Findings from Akatsi show that water pricing is undertaken mainly to cover operating costs and some aspects of fixed costs.

Designing and fixing water price in Ghana as discussed in Chapter 5 is left with the PURC and the communities themselves depending on whether the community is an urban or rural one and this has brought a lot of differences in the prices that each community pays for water. In the case of Akatsi, the WSDB fixed the price to be paid for the water in consultation with the DA. Privately connected houses pay a fixed water price based on volumetric consumption of  $\text{¢}0.83\text{m}^3$ . This system is very clearly a pricing option to encourage the consumption of water in a community that is not used to paying for water and where different sources of water are used for different purposes. It also falls in line with the MDG's objective of

increasing the number of people with access to potable water. However, this is different from what pertains in urban areas of Ghana where the pricing system follows the increasing block rate system as can be seen on the bills of urban consumers in Appendix 8. However, one wonders what the 2% rural charge is used for based on the fact that community participation and management entails rural communities paying 5% of the construction of their water sources and managing their water resources locally. The GWCL however pointed out that they pay the 2% urban people pay for rural water to the central government which is used to finance the government's share of initial rural water construction.

The increasing block-rate system discourages consumption only when it is set very low. Generally, it is set above the volume level that most domestic consumers use. The increasing block-rate is aimed specifically at achieving equity through redistribution of income from the rich to the poor. In reality however it is often a subsidy for privileged consumers (rich) who are already on the network. If rural people are being asked to use potable water and pay for it based on what they consume through flat rate metre reading as is being done in Akatsi, the best option available for them is to use it for specific purposes like drinking and use other sources for other less important activities like washing, cleaning and bathing. Even though the Akatsi WSDB uses a fixed flat rate to charge for its water, its customers complained that the price they pay for the water they consume is too high. One resident complained that the water board still continues to bill them even though their meter has been disconnected due to non-payment of bills (Appendix 8). Other respondents complained of the quality of the water that is given them. A privately connected resident pointed out that her household could not pay the bills due to the fact that;

“the bills are too high, and we do not get water. The water board only pumps air into our meter leading to high meter consumption whilst we actually do not consume such a quantity of water. When we complain that the bills are not correct or the meter is faulty, they do nothing about it. The water board is only interested in money without considering our consumption or income” (Fieldwork, 2008).

The response above can be interpreted that the consumers are actually using more water than they realize because ‘meters do not lie’ but picks what is consumed. It can also be interpreted as showing that the people are not ready to pay for the water they use and trying to find ways of justifying why they default in paying their water bills. These comments can be compared with the number of people that are connected to the water network in Akatsi. Only 200 privately connected households are connected to the network after the water facility was constructed five years ago.

About 93% of the survey respondents pointed out that they are not connected to the Akatsi water network even though they are aware of the systems in place to be connected. In sum, a number of factors like borehole water quality as compared to the river water quality, the use-values that beneficiaries derives from boreholes and other sources that are available to them and the price they are paying for the water all act as impediments to the community’s use of the demand-oriented water infrastructure in Akatsi. Even though this strong value-based position is not taken by the community explicitly, their actions of not getting connected into the system and using specific water for specific purpose speak for itself. Also, majority of people of Akatsi mostly live in “compound houses” where one can see three to four different households in a house. These residents do not have a fixed tenure arrangement as such are not obliged to contribute towards water connection in their houses. Landlords are also not willing to connect to the network due to the initial connection cost which include initial deposit of Ghc150 (£75) which have to be paid in full before WSDB plumber is sent to a house to undertake water connection to the network, expenditure by landsords to lay underground pipes to connect water to the house and in-house water distribution and storage equipments are all expensive leading to non-connection to the network. The secretary to the WSDB

points out that the plumber promptly connects people who pay the connection fee “without delay”.

The changes in policy from supply-oriented to demand-oriented water supply led people in Akatsi District to pay for water. Some respondents mostly in Torve pointed out that “*water is a free good from God as such why should I pay for it?*” (Fieldwork, 2007). After much education in Akatsi, people now realise that they have to pay for the water they use. But just like any other aspect of a household’s economic life, paying for water has gender implications.

It is not uncommon for gender and development experts to say that women pay for water used by their households (UN, 2005) and this has increased their burden of looking after the house and curtailed their income generation to alleviate their poverty. The study tried to probe the reason for this by asking women whether their husbands give money for the payment of the water. Some of the women responded negatively by saying “*no, I do not get separate money from my husband to purchase water*” (LIH member 2, 2007). A question was directed to men as to why they do not pay for water used by their households. A man from a poor household responded by saying:

“I pay all bills in the house by putting daily money on the table before leaving. The fact that I do not remove money from my pocket to pay for the water does not mean I did not pay for it” (LIH member 3, 2007).

Another male respondent pointed out:

“what is the point of giving market days money my brother? It is for the upkeep of the house. If it is not enough and my wife adds her income to it, there is no problem with it. In such a case we all pay for the bill” (MIH member 1, 2007).

Market days occur every 5 days of the week in Eweland in notable towns like Ho, Denu, Agbozume and Akatsi and men are supposed to give money to their wives to purchase

provisions for the household. This finding confirms earlier finding by Green and Baden (1995) in Tanzania that women are more willing to pay for water than men. I observed that women in Torve pay less for water used by their household in comparison to those in Akatsi due to the use of the river. However, women are burdened in spending more time and energy walking longer distances to the riverside to gather water in Torve than in Akatsi. With regards to paying for sachet water, men were found to use more sachet water than women and children due to the fact that men have more disposable income to spend on such “luxurious commodity” as and when they want it. It therefore suffices to say that men pay part of the water bills indirectly through the weekly market money they give their wives but the responsibility of ensuring such bills are paid falls on the shoulders of women leading to their claim that they pay for water bills. Water policy therefore needs to focus on the income of those who actually pay for the resource that is used by the household in order to encourage its use for sustainability and the achievement of the MDG. Section 7.6.2 below discusses the quality of the water in Torve.

#### 7.6.2 Borehole Water Quality

Water quality is very important for the health of people using water under the CM concept in Ghana. The cost of guaranteeing water quality in many communities using boreholes is a very big problem in the Akatsi District. It was learnt that about ₵300 to ₵600 (£150 to £300) is needed to carry out a simple water quality test on boreholes under CM in the study area (conversation with Akatsi Water Board Technician, 2008). Indeed, most of the water quality tests undertaken under the CWSP of Ghana and in the study area do not take into consideration trace elements like arsenic and other metals that pose a threat to human health and survival (Kortatsi et al., 2008). Arsenic in domestic water is very harmful when its concentration is higher than the required WHO and Ghana Standards Board (GSB)

recommended quantity. The presence of these metals and trace elements in drinking water can be observed in the taste, odour, or the appearance of the water. High concentrations of arsenic in water can result in skin diseases like hypo (white spots) and hyper pigmentations (dark spots) on the skin. Other health problems that high arsenic and metal levels can cause includes hypertension, cardiovascular diseases, reproductive defects like low birth weight, miscarriages, decreased production of blood cells, liver and kidney damage and a feeling of “pins and needles” in the hands and feet (Carlos, et al., 1997; Kortatsi et al., 2008).

Findings from the study revealed that the hardness of water is very important in determining what the water is used for. The people interviewed and observed pointed out that “*the water from the boreholes is very hard*” compelling them to use the untreated river water. Water hardness was assessed by residents mainly through its reaction to soap during washing and bathing, and its taste. The hardness comes about as a result of the presence of major ions like  $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ ,  $\text{Cl}^-$   $\text{SO}_4^{2-}$ , some minor ions like  $\text{NO}_3^-$ ,  $\text{F}^-$ ,  $\text{Fe}$  and  $\text{Mn}^{2+}$ , and other trace elements like  $\text{Cu}$ ,  $\text{I}$ ,  $\text{Cr}$ ,  $\text{Zn}$ ,  $\text{F}^-$ ,  $\text{Ni}$ ,  $\text{Mo}$  and  $\text{P}$  (see Appendix 9 for meaning of symbols). Indeed, all these ions and trace elements are vital for human health however, their occurrence above the recommended limits can lead to adverse health problems to consumers. Water hardness in the range of 0-60 mg/l, 61-120 mg/l, 121-180 mg/l and above 181 mg/l are regarded as soft, moderately hard, hard and very hard respectively (Hem, 1970 in Kortatsi, 2007). For instance, chloride ( $\text{Cl}$ ) is expected to be present in drinking water but it is not to be above 250 mg/l due to its taste. The same applies to sulphate ( $\text{SO}_4^{2-}$ ) and sodium ( $\text{Na}^+$ ). Fluoride ( $\text{F}^-$ ) is very important to human health especially in preventing tooth decay and has to be added to water where it is not present (WHO, 2008), however at high concentrations, it can result in dental or skeletal tissue/fluorosis otherwise known as teeth or skeleton molting (Kortatsi, 2007; WHO, 2008).

The Water Research Institute (WRI) of the Centre for Scientific and Industrial Research (CSIR) of Ghana gathered data on water points in the Akatsi District for the CWSA and published the result in 2007 (Tay, 2007). The data from this study is used in this section. About 34 boreholes in the Akatsi District were sampled using washed polypropylene containers. The samples were analysed using international standards like the water quality assessment of the United Nations Environmental Programme (UNEP) and WHO. Turbidity, total dissolved solids (TDS), fluoride content, magnesium ion (Mg) concentrations, sulphate ion concentration, alkalinity were all determined.

Tay's (2007) study found that turbidity and total dissolved solids in borehole water in the Akatsi District are within acceptable international standards. The WHO (1993; 2008) and the GWCL provided a guideline of maximum acceptable limits for TDS in drinking water which is 1000 mg/l however, it was found that TDS in boreholes of Akatsi District was between 80 to 3220 mg/l and the mean value was found to be 729.21 mg/l. The TDS for Torve was found to be 3220 mg/l a concentration higher than the acceptable limit. 2450 mg/l is regarded as the critical value above which there is bound to be long term health effects on users of such water (Kempster et al., 1997). The people of Torve thus have every cause to reject the borehole provided them on health grounds even though findings of the chemical properties of the water has not been disclosed to them neither were they warned not to use the water.

Total alkalinity and water hardness was also found to be generally soft in the district but Torve has water hardness of 1190 mg/l which is not acceptable locally and internationally. This finding of water in Akatsi District and Torve in particular shows that dissolved  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  in the boreholes of the community are beyond acceptable limits. No wonder the people refused to use the water that has been provided them even though it is free. The taste of the water was the main reason given as to why people do not use the borehole provided. The taste

of the borehole water in Torve can be attributed to the level of  $\text{NH}_3\text{-N}$  (ammonia nitrogen) which is 2.09 mg/l. This is beyond the acceptable limits by GWCL and WHO. Calcium and magnesium ion content beyond acceptable limits also renders water to be hard. Chloride ion content in Torve was found to be 992.6 mg/l and sodium ion content 471 mg/l. Constant consumption of water laden with such chemicals like sodium can result in health hazards. For instance, the permissible limits of sodium by WHO (1993; 2008) for drinking water is 200 mg/l but that in the Torve borehole has far greater levels. It should however be noted that, the hardness of the water can contain more propitious substances and minerals that can neutralise the harmful substances when ingested but since the people consider taste and reaction of the water to soap more important than the “good” substances it contains, they opted not to use it no matter the amount of education given them.

The people of Torve pointed out that they do not use the borehole for washing or laundry because it “*result in the wastage of soap when used for washing and bathing*”, a wastage that the people are not ready to bear. A respondent in Torve expresses a strong sentiment on the use of the borehole for laundry:

“my son, do you know how much it take to get money to buy detergents? I have no steady job but I have to buy soap to wash our clothes. Using water from the borehole to wash our cloths will last less than 1 week. When we use the same amount of soap to wash with rain or water from the river can last for a month. I will not use it today or tomorrow” (MIH member 2, 2007).

It is shown in section 7.4 that people of Akatsi District store water in pots and plastic containers. This water is used until it is finished and a new one has to be gathered. It was found in Torve that water collected from the boreholes and pipes becomes harder when stored. At times, its colour changes to reddish when stored for a long time especially in the inner chamber pots. It is therefore not suitable to draw water from the borehole and store it for household use. I experimented myself to determine the veracity of such a claim by

drawing water from the borehole in Torve. I stored the water in a mineral water bottle for 3 days and then drunk it. The taste was bitter and saltier than the fresh one from the borehole even though the fresh water from the borehole is already salty (hard). Keeping the water in containers for longer than necessary also results in discolouration, a change in state that the people regard as bad and an incident that should not happen to good water. The people of Torve felt water should turn clear when kept in the pot rather than turn brownish. This discoloration of the stored water from the borehole can be attributed to the soluble ferrous ion ( $\text{Fe}^{2+}$ ) present in the ground water. When the water containing  $\text{Fe}^{2+}$  is exposed to the atmosphere, it oxidised to  $\text{Fe}^{3+}$ , which later hydrolysed as ferric hydroxide, which can turn brownish at times and cannot be used for drinking and washing. A woman in Torve lamented:

“The water from the borehole when stored for two of 3 days and used for laundry stain our white clothes as such we do not even use it for washing” (MIH member 4, 2007).

This study posits that, the borehole water people in Akatsi and Torve are using is not hygienic as claimed by the CWSP. Borehole water is rejected since it cannot be used even for laundry or washing plates. It seems the geology of Akatsi District and Torve in particular is very important in determining the chemical quality of water in the boreholes of the area (Langmuir, 1997). Based on the findings above and the behaviour of the people of Torve who refuse to use so called “clean and affordable water” provided them, this study refutes the pronouncement that unpolluted water is available below the surface and can deliver clean, affordable and reliable water supplies to local communities in developing countries (Reynolds, 1992; Singh et al., 2004). This situation does not apply to communities in the Akatsi District especially Torve and Akatsi. The quality of this water is a source of worry to both residents and water managers but since the people have no alternatives, they use it.

Building aerators on the borehole can remove the ion concentration in the water but due to the high costs involved, and the community participation and management concept as currently being practiced under the demand-oriented CWSP in Ghana, communities find it very difficult to gather financial resources to install the ion removing plant to enable them to use the boreholes provided. My argument here is that, it is just not enough to construct water facilities, there is the need to provide adequate mechanisms to maintain them. From the discussion above, it seem people rely heavily on the river Tordzie that runs through Torve for daily domestic water. The quality of the river that leads people to depend so much on it is the subject of the next section.

### 7.6.3 River Water Quality

In comparison to the borehole, the quality of surface water bodies in Akatsi and for that matter Ghana vary widely depending on geology, anthropogenic forces at work at the source region and other environmental factors. Among the geological factors, the chemical composition of the rock that forms the soil constituent upon which the water flows is the major determinant of the qualities of water in Akatsi District (Tay and Kortatsi, 2007). All flowing water bodies can transmit a number of viruses, bacteria, protozoa and parasitic worms (helminths) to people that drink such waters as well as diseases like cholera, guinea worm, typhoid fever, dysentery, gastroenteritis, eye and skin diseases. For technical and economic reasons it is not possible to test and determine all the micro organisms in water (Hurst et al., 1997) as such some organisms called indicator organisms are used to monitor the purity of water bodies.

Also already pointed out in Chapter 5, the main river that drains Akatsi District is the River Tordzie which passes through Torve. This river is the major river used by the people of the community for all domestic and economic purposes. Every citizen in Torve pointed out that

the river is their main source of water. People do not find the water injurious to their health.

A respondent pointed out that;

“I have been using this water since I was born and my parents used it but not a single individual in my family and the community to the best of my knowledge have ever suffered from water borne disease like guinea worm or bilharzia. Had it not been this water, the community will first and foremost not exist. The water attracts and retains all of us in the community and it provides a source of livelihood especially for the production of Akpeteshie” (LIH member 4, 2007).

Even though, no chemical and microbial characteristic analysis had been undertaken on the River Tordzie in Torve, some data exist on it at other locations like Kpetoe and Shia. These communities lie about 30 kilometres and 70 kilometres respectively north of Torve. This is the data being used for this study since the cost of undertaking water quality tests on the river at Torve was beyond the means of this study. Table 7.10 shows water quality tests undertaken by the Water Research Institute (WRI) of Ghana on the River Tordzie at Shia and Kpetoe and published in 2007.

**Table 7.10: Upstream Water Quality of River Tordzie**

Parameter	pH-unit	Na	K	Ca	Fe <sup>2+</sup>	Cl	HCO <sub>3</sub>	TDS	Total Alkaline	Mg Hardness	Total Hardness
Shia	7.4	5.4	2.9	15.2	0.1	8.4	46.0	130.5	7.0	0.8	38.8
Kpetoe	7.1	7.7	9.1	19.7	0.0	11.2	88.0	148.5	88.0	33.3	82.6

Source: Tay and Kortatsi, 2007

The chemical properties of the river upstream show very interesting results. The values for Shia, which is closer to the source of the river, contain a low amount of chemicals however, that at Kpetoe which is not far from Torve is a bit higher. This result can be attributed to anthropogenic factors connected to the communities through which the water flows. Overall chemical content of the river shows that the water is better than the borehole for human consumption. The problem however is with the microbial properties of the water. Total coliform and faecal coliform was found to be 13 and 0 at Shia and that of Kpetoe was 51 and 0 showing that the water is not good or safe for human consumption (Tay and Kortatsi,

2007). A possible source of high concentration of microbial substances in the river can be attributed to open defecation by people living along the river banks or its transportation by rain from nearby communities that do not have any form of sanitation facilities. An elder of Torve complained that;

“People now do what they want to the river. Some even wash their dirty clothes along the bank of the river, some water their animals while others bathe in it. The laws are there but the youth of today do not respect it and no one dare punish them” (Fieldwork, 2007).

Sanitation is very poor in all rural communities living near the bank of the river. Even though, water is considered a resource that should be preserved for future generations and its misuse comes with sanctions, people at times misuse it. It is not uncommon to find herds of cattle being shepherded to drink and graze near the river. Even though customary law prohibit people from taking their animals to drink directly from the river (Opoku-Agyemang, 2001; Sarpong, 2004), nothing can be done to people who water their animals upstream. Also, one can see people doing all sort of things downstream and these people go unreprimanded by the community due to the waning of the customary system of managing water resources in the country. Since no adverse health problems have been attributed to the river, coupled with the absence of a good alternative, the people see it as a good source of water. A resident of Torve commented on the quality of the river;

“the river water is soft and quenches thirst unlike the borehole which is salty. What we have to do is gather it and let it stand for impurities to settle down for it to be used. River Tordzie is a gift from God to us” (MIH member 2, 2007).

Another possible explanation as to why people in Torve use this water on a daily basis but do not suffer from any form of water borne disease can be attributed to the change in state of the water. As the river flows along its course, the concentration of the chemical properties, viruses, protozoa and parasitic worms are reduced or are changed as a result of growth, settling of sediments, chemical reactions and decay (DWAF, 2000; Tay and Kortatsi, 2007).

This change in state of the properties of the chemical constituent of the river can be used as a resource and developed for the benefit of communities lying along the course of the river rather than using hard-won money on boreholes that are not used for its intended purpose. It is argued here that because the development of the river as a water source is not in the development donor's interest, the people living along the river are left to use it without any assistance. The use-values people attached to water that is available for their use leading to their rejection and acceptance of certain water sources is discussed below.

#### 7.6.4 Use-Values of Water

Value can be said to relate to the qualitative attributes of a thing to an individual and this value can be the social, economic, religious or utilitarian benefits that the individual perceives to be inherent in the good or service (Otieno, 2001). Water is valued based on its perceived usefulness and this differs from one individual to another, and from one geographic region to another depending on water scarcity and the socio-economic conditions of the people in the area. The use-value of water as used in this thesis denotes a standard or quality that water possesses to make it desirable to the people. The section discusses only the value of how water reacts to detergents, taste and smell when stored either in a pot or container to be used, rather than wider issues of religious or spiritual and aesthetic values. This is because the study is mainly concerned with domestic water supply and use at the household level rather than with water use for religious or spiritual purposes.

Women have been noted in this study to be the main drawers of water. In performing this role, they have been constrained by the quality, inaccessibility and non-reliability of their water sources. Domestic water management in Torve and Akatsi District is built upon the

fulfilment of locally perceived water values of taste, freshness, reaction to soap and feeling on the body after washing rather than the mere yardsticks of access to convenient, reliable and sustainable sources nearby. These use-values come from women's experiences of water use. Women are not just passive water gatherers, but rather the use to which the water is to be put is taken into consideration before distance from house, convenience and accessibility come to mind. This can be observed in the statement by a respondent that:

I consider the different uses to which I will be putting the water to before I gather water. I collect water for drinking from people with rain water harvesters. When I want to wash, cook and clean my self, I gather water from the river" (MIH member 2, 2007)

Saline drinking water is abhorred in Torve for it is seen as unsuitable for cooking and cannot quench thirst in the humid tropical weather. A respondent pointed out that:

"water from the borehole does not give taste to the food I prepare for my husband. I remember using the borehole water to prepare food for him and he pushed the food away. I felt ashamed and explained to him it was not my fault. To prevent the occurrence of such an incident and to preserve my marriage, I refused to use water from the borehole to cook" (MIH member 2, 2007).

This study therefore reveals that the basic water needs of women in Torve revolves around the type of domestic use water is to be put. In this sense the river is preferred to the borehole for it lathers well even though it discolour clothes when. A respondent points out that;

"qualities of colour does not matter when washing coloured clothes however, clothes that are white demands the use of clear and colourless water" (LIH member 2, 2007).

These qualities as outlined by people of Torve are in line with findings by Briscoe et al. (1981) and Singh et al. (2004) in India. In communities where there is no available substitute for water, and when the main taps are closed as is often the case for residents in Akatsi Township itself, people have no alternative but to draw the available water for all domestic chores. Where there is alternative water, people walk the distance to gather it for such specific purpose even though water might be available at a closer distance. A respondent in Akatsi explained that;

“we do not drink water from the pipes in my house. It is too salty and does not taste well. We buy sachet water to drink and at times drink rainwater. We use the pipe water for cooking, bathing and washing, however the best water for washing is the rain water because it lathers well” (Fieldwork, 2007).

Environmentalists including geographers also express values in relation to the environmental goods and services that users perceive to be of importance to them (Chee, 2004; Wilson, and Hoehn, 2006). Touching on values, Harvey (1996b; 155) points out that environmentalist’s valuation criteria of natural resources:

*“cannot escape from the confines of its own institutional and ontological assumptions. . . .about how the world is ordered as well as valued’.*

The people of Akatsi and Torve value water in relation to taste and reaction to soap, here water is reduced to what it can be used for, and the satisfaction they derive from its use and not just its provision and availability.

Smoked clay pots are locally used to store drinking water in rural areas of Ghana to develop a smoke flavour (Johnson et al, 2009). Plant materials like palm nut husk or dry plantain leaves are burnt inside the pot for about 30 minutes before it is cleaned with water and put in the inner chamber before water is poured in it. The pot containing the water is covered to prevent its contamination. Water collected from the smoked pot preserves the freshness of the water and it gives the water a distinctive taste and aroma as can be found in rain harvested water. Plate 7.7 is a typical clay pot used to give the distinctive taste and flavour to water in Torve. The water collected from a clay pot can be as cool as refrigerated water during the dry season in Ghana.

**Plate 7. 7: A Clay Pot Used to Give Flavour to Drinking Water**



Source: <http://www.ezakwantu.com>, 07/03/2009

The practice of giving flavour to water has been extended to sachet water even though not yet recognized by the Foods and Drugs Board of Ghana (Johnson et al, 2009; Tano-Debrah et al, 2007) because there is inadequate research on its toxicity. Public criticism on the wholesomeness of water from smoke flavoured sachet water products led to studies on it. Some of the smoking processes used by these commercial sachet water producers could contaminate the water with toxic constituents like polycyclic aromatic hydrocarbons (PAHs). PAHs are pollutants, and some were identified to be carcinogenic to living things, mutagenic and teratogenic) (Tano-Debrah et al, 2007). Respondents point out that the borehole water poured into smoked pots turns oily after a day. As such they do not use it. A female respondent from a poor household responded that:

“I tried the borehole water in my pot once but I could not drink the water because it turns oily on my tongue. The borehole water poured into smoked clay pots bites the tongue as such she does not encourage it in her house” (LIH member 2, 2007).

Another one also points out that:

“The water turn sour, worse than the normal borehole water as such I do not use it” (LIH member 4, 2007).

Tano-Debrah et al., (2007: 970) conducted laboratory controlled tests to assess PAH content in smoke-flavoured tap water in Ghana and concluded that:

“the physico-chemical characteristics, notably, pH, turbidity, conductivity, colour, total hardness, dissolved oxygen content and biochemical oxygen demand, of the smoke-flavoured water, produced with spent palm nut fibre in both traditional and commercial processes, did not affect the safety of tap water processed. Generally also, there appeared to be no significant increase in the concentration of the possible contaminants of the tap water due to the smoke-flavouring process.

This conclusion implies that it is possible to produce safe smoke-flavoured drinking water by using tap water. In contrast, the responses from the people of Torve and Akatsi can be true with regards to borehole water because, PAHs are lipophilic, meaning they dissolve easily in oil. Smoking the pots with palm nut husks produces PAHs which easily dissolve the major and minor ions, trace elements and phosphorous in borehole water giving it its oily taste and bite when drunk.

The values people derive from their drinking water sources therefore need to be taken fully into consideration in future water policies and programmes for sustainable use of them in order to meet international development targets like the MDGs. Because in Torve, the meanings and values associated with water are diverse based on the use to which the water is put. In a sense, values attached to water used in *Akpeteshie* distilling, washing plates, bathing, and drinking are different and are changing. Even though, sachet water is seen as water for drinking, different values are attached to different brands of sachet water. The production of sachet water is now a lucrative business that it is not possible to count the different brands available. Some are valued in high esteem based on their taste. A woman points out that;

“all the sachet water in the market are good but I value those that smell like distilled pot water. They are close to what we used to produce at home. I feel satisfied when I drink it especially when I belch and smell the water” (MIH member 4, 2007).

This feeling does not apply to borehole water thus its rejection. In this sense, values attached to water are interconnected and what people value about water in Torve, and for that matter Akatsi District, contradicts the established official prescription of providing boreholes for

communities in order to achieve the MDG and reduce water borne diseases (GoG, 2003). Indeed, all households observed confirm the preference for treated sachet water that has the distinctive smell. High-income household however purchased more expensive sachet water than low income households. All households prefer water that is soft and easily reacts to soap.

In the words of Griffin (1984: 3) “*we have experienced an almost libertarian outpouring of market-oriented recommendations for allocating water*” and in Ghana, this was led by the WB and IMF policy which have been imbibed by the international donor community. The policies of these institutions threaten the interests and lifestyles of poor Ghanaian rural dwellers whose valuation of drinking water is close to what nature provides from the sky rather than thinking that increasing water demand can best be solved by drilling more boreholes (Fruhling, 1996).

In Torve, water is valued for its uses, both domestically and productively. Even within domestic uses, drinking water is valued differently from washing and cooking. Even at the level of drinking water, something more than a satisfying taste is attached to it in the form of smell. River water, rain water and borehole water all have different use-values. Even though Gibbs’ (2006) observation are abstract and based on agricultural uses of water in Australia, findings in Torve conforms to her observation about the inability of policy in natural resource management especially domestic water supply planners to incorporate use-values people attached to domestic water in their planning decisions. Attaching goals of providing water to every community without taking cognisance of the use-values people attached to water and the uses to which that water is put will not lead to good use of the water facilities. In the case of Torve, natural resource management strategies fail to incorporate the use-value people derive from drinking water. These use-values of water led Strang (2005) to assert that the

diversity of uses to which water is put is the key to its meaning to the people who use it. This insight is yet to feed into natural resource management strategies and the CWSP in Ghana.

It can therefore be argued that water is not just used by people of Akatsi District for any purpose, as the case may be for other urban areas of Ghana. Rather, the perceived notions of water quality which have been built over the years still count in water use. The piped or borehole water has not replaced the usual water sources like the river, ponds, rainwater and hand-dug wells rather, they are utilised depending on the use-values the people hope to derive from them coupled with the price that is being paid for the 'commodity'. A brief conclusion is given to the Chapter in section 7.7 below.

## **7.7 Conclusion**

Having shown the sources and uses to which water points constructed under the new water policy of Ghana are put by beneficiaries, it is argued that the provision of clean water by donors, the communities themselves and the District Assemblies has not yielded the expected or intended use or uptake of new facilities. This is due to the fact that water experts do not understand the values which people attach to water. The way people of Akatsi District value, use and manage water are influenced by their perceived value of the reaction of water to detergents, taste and smell when stored either in a pot or container before it is used. There is close association in Akatsi District between socio-cultural views of water and how it is being used. Providing water that does not suit the social uses of water will lead to people using their local water sources like river, hand-dug wells and rain water even when the borehole water is free.

The findings from this study show that people from different income groups in Akatsi and Torve take active decisions as to which water to gather for a specific use at a point in time. Decisions are taken not only with potable water sources like the borehole and community pipes but also with regards to their usual sources like hand-dug wells, rainwater and rivers. The findings also demonstrate that there is the need to adequately understand the water gathering process, its storage and uses, as well as the quality concerns of the people who actually pay for the water used by their households, before designing water projects. The water needs of men and women of Akatsi and Torve are part of the society's knowledge system of water, which is interwoven around their value system of purity of water and expectations from water, and not just available water whether it is free or not.

The Chapter shows that the current provision of water points in rural communities does not necessarily lead to people using the facility even though this might be the expectation of the donor of a water project. There are differences in access to water, time spent in water collection, distance people have to walk to gather the water and expenditure to be made on water by different income groups. Poor households have no choice but to depend solely on untreated water sources because of the cost involve in the acquisition of other potable sources like harvested rainwater. Water use practices are not changed due to water availability but rather women and men take decisions as to what the water is to be used for, the cost involved in water collection, the time that will be used in gathering the water, the equipment to be used in gathering the water, the distance that will be trekked to gather the water and above all, the values and perceived benefits to be derived from the water. This perception of water quality leads to the decision as to which water to collect and which one to use for the household and for income generation activities.

Water is valued based on what the users perceive the water to give her/him and differs from one individual to another and from one geographic region to another depending on water scarcity and socio economic conditions of the people in the area. Locally perceived water values of taste, freshness, reaction to soap and feeling on the body after washing are more important than access to convenient, reliable and sustainable sources nearby and these values come from people's experiences of water use over time. Such values should be considered in water policies and programmes in the country for sustainable use of the resource.

What motivates men and women to pay for water in Akatsi and Torve depends on the economic status of the household, the power a woman wields within the household in terms of her disposable income and the availability of alternative water sources and the social values as outlined here. Women in low-income households were found to use untreated water sources like the river and hand-dug wells more than those in middle and high-income households. It is therefore concluded here that money is a very important factor leading to people not using quality water like rainwater. To meet the MDG in Ghana and other developing countries requires a rethinking and repackaging of water provision to be holistic in meeting local, cultural, economic and technological needs rather than the present situation where rural people are to accept everything that comes their way and furthermore, to pay for it. Water experts and the donor community need to take into consideration different status within households and the community when designing community water projects that are meant to reduce time and distance in water gathering.

## CHAPTER 8: SUMMARY AND CONCLUSIONS

### *Water Always Find a Way Out*

#### **8.1 Introduction**

This final Chapter of the thesis concludes the study of the management and use-values of the demand-oriented community water facilities in the Akatsi District of Ghana. By explicitly investigating CM of water services, this thesis is among the few arguing in line with Bakker (2008) that merely calling for water management by a community cannot be the panacea for improved water services. I argue that even though CM in Akatsi reduces the distance used by the people to gather water, it does not consider the poor in the community or poor communities in water provision. The most important issue is that, under CM of water, water quality is ignored, yet the quality of water is among the factors that dictates which water sources people use. It is concluded that the sustainability of CM water facilities is at stake and this may leave CM of water in the same financial predicament as the GWCL that was dissolved in the 1990s in Ghana as a result of WB and IMF austerity measures. This study therefore calls for the re-instatement of state-agency management of water facilities or a variant of CM and public sector management of water facilities in rural communities of Ghana.

The Chapter is organized into 5 sections. Section 8.2 concludes the study by relating it to the literature reviewed. Section 8.3 broadens the conclusion by relating it to the implications for policy and gender issues in water management. Section 8.4 provides the contributions this thesis has made to the literature. The final section (8.5) provides suggestions for future areas of research in domestic water supply provision and management.

## **8.2 Conclusions**

This section concludes the findings in relation to the literature discussed in chapter two in the light of the importance being accorded CM of water facilities as complementary to the management of water facilities in developing countries like Ghana. It argues that, while in principle Ghana is on course to achieve the MDGs, in reality people who have alternative water sources in their community hardly use the potable water facilities provided for drinking in their communities. This statement can be extended to the whole of the southern section of Ghana based on the fact that they all share the same geological formation from which the water is pumped to the surface for use. What is more the study shows that where people do not have alternative water sources they turn to use the available facilities but where there are alternatives like rainwater harvesting and rivers, they continue to use these ‘traditional’ water sources.

### **8.2.1 Summarizing CM of Water in Akatsi and Torve**

The last two decades have seen an increase in the privatization, commercialization, partnerships and CM of water infrastructure around the world in contrast to state provision and management in developing countries (Boag and McDonald, 2010). Following these shifts in management of water, there has been much debate on the impact these trends are having on the people (Bakker, 2005; Brennan et al, 2004; Bouguerra, 2006; Budds and McGranahan, 2003; Eguavoen and Youkhana, 2008; Engel et al, 2005; Komives et al, 2007; McDonald and Ruiters, 2005; Page, 2003; 2005; Swyngedouw, 2004; Whittington et al, 2008). The literature also critiques alternatives to the management of water by the private sector (Assies, 2003; Bakker, 2007; 2008; Bond, 2008; Shiva, 2002; TNI, 2005). In Ghana, the literature is mostly

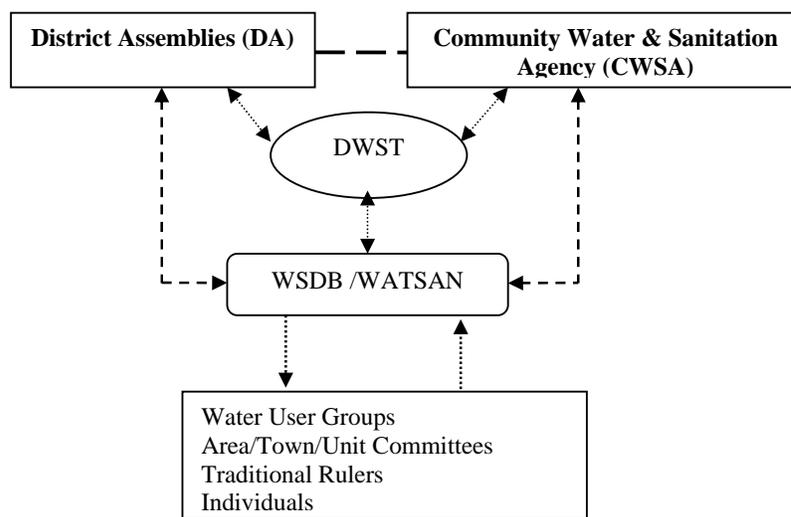
in favour of CM of water facilities (NCAP, 2005; GWP, 2007). Based on the findings of this study, I argue against communities managing their water facilities.

Findings of this study shows that communities in Akatsi District, specifically Akatsi and Torve receives some form of post construction support from the DA, CWSA and the DWST however more can be done to improve this support especially buy appointing specialist water managers to take charge of these duties being currently performed by people appointed from the various departments and ministries in the district. Findings from this study show that some institutions are free-riding on the bill-paying population of Akatsi and this makes it difficult for the WSDB to recover the fixed cost incurred in the construction of the water facilities and providing new facilities in neighbouring communities like Torve as envisaged under the growth pole concept of providing water facilities in district capitals like Akatsi.

The reliance on community members to manage water systems is also problematic on the grounds that ordinary people in Akatsi regard their WSDB members as people employed by the DA to manage the facility on behalf of the community rather than the residents employing the water managers on behalf of the community. Further, people of Akatsi did not see the water facilities being managed by the WSDB as belonging to the community because the water facility was provided by GTZ and the DA paid the 5% community share of capital cost of the project. Therefore, it does not necessarily mean there is a sense of ownership of a water facility when the facilities are provided by a donor and handed over to local leaders who are appointed or elected to manage the facility. Also, CM is advocated as a compliment to private or state institution's management of water (NCAP, 2005; GWP, 2007) however, this study shows that the reliance on official rules governing water facility management reduces the flexibility being advocated under CM.

This study also shows that people of Akatsi are not organized enough to demand water managers (WSDB) to open their books and render accounts of the facilities they are managing. Here comes the role of the DA, however, when the DA tries to instill discipline in a chaotic CM process, it is taken as meddling in community affairs. Figure 8.1 below shows the current relationship between the different actors in the CWSP in the Akatsi District.

Figure 8.1: Relationship between Actors in the CWSP in Akatsi District



Source: Author, 2010

Figure 8.1 above shows that all the actors in the CWSP in Akatsi and Torve are independent and do not interact with each other as expected to bring about the good aspects of CM that is being argued by Evans and Appleton (1993), Laryea (1994), Lockwood (2002), McCommon et al., (1990) and Schouten and Moriarty (2003). The figure however concurs with Harvey’s (2008) point that CM does not actually empower community water managers on ways and means of managing their water facilities because they have no choice as to how the water facilities are to be managed apart from what has been dictated by donors. The communities, in this case are “agents of commodification” (Page, 2003) through which the government is relieved of providing and managing water facilities.

CM of water in Akatsi is bringing what Castree (2004) termed “exclusionary localism” because decision-making in the WSDB of Akatsi is dominated by those who can afford to participate. There is therefore mistrust and “cold antagonism” between those who claim “citizenship” to Akatsi and those who live in Akatsi. What makes participation and management of water facilities problematic in Akatsi is the fact that facilities that assist in broad base participatory processes like accommodation that hosts the community at meetings is not adequate to allow all interested in attending community meetings to attend. Further, information is not disseminated to people to attend meetings and be informed of developments in the WSDB. In line with Taylor (2003), findings from this study suggest that community associations actually do not represent the diversity of interests within a community. This division therefore leads to majority of people in Akatsi seeing the water facilities being managed by the WSBD as DA owned rather than community owned.

Findings from this study also show that it is not everybody in a community who wants to participate in community affairs (Young, 2000). This is because participation has become very expensive to the WSDB. In order to cut the costs associated with the participation of all members of the community in deliberations of the board, the WSDB failed to advertise meetings. This can be attributed to the cost recovery principles spelt out in the facilities management plan and the inability of the WSDB to generate enough funds to meet recurrent and fixed cost of the water project. Cost cutting measures are being adopted in CM of water in Akatsi Town leading to low involvement of people in decisions regarding their water.

It is often asserted that including women in water management can serve as an entry point for the empowerment of women in local decision making processes (Ivens, 2008; Verschoor, 2008). However, findings from this study show that this is not necessarily the case. Rather, women regard their participation as a source of employment but when their participation in

the management of water facilities does not live up to their expectations, they resign preferring to take on other jobs that are financially rewarding.

The different sources of untreated water like river, dam and hand dug wells are still being used in both Akatsi and Torve 15 years after the launch of the CWSP in the Akatsi District. Water is mainly gathered by women and girls in Akatsi and Torve however, these are people not consulted or who do not participate in decisions affecting water management. People use specific water for a specific purpose however water is used mainly for domestic uses and for income generation. These findings attest to the fact that people in Akatsi and Torve have multiple uses of water and the extent to which people use multiple sources of water depends on the availability of alternatives. Findings from section 7.4.3 shows that the poor mostly rely on untreated and inferior water sources since they actually pay more per bucket of water fetched or due to their inability to construct large storage devices to store rain water.

The water being pumped from boreholes to communities is saline and does not conform to the taste demanded by water users leading to the use of multiple sources of water. Further, the cost of metering water points and usage-based billing methods, which in Akatsi is a flat rate for water consumed, is high for the poor. This method of billing also impacts on the management of the facilities by the WSDB because it has to recruit people to read metres, prepare and distribute bills. These activities demand time which voluntary work cannot do satisfactorily. Metering of water points is mostly undertaken to cut down on water consumption and for accurate billing through the use of increasing block tariff system (Boland and Whittington, 2000). However, a flat rate is used in Akatsi to bill all water consumers instead of an increasing block tariff which penalises high water consumers and provides life-line water to poor households. Metering water points in Akatsi has the effect of discouraging water consumption in general and curtailing private water connection to houses.

Other factors preventing people in Akatsi from connecting to the network include the flat rate method of billing; insecure tenure; inability of WSDB to deal with flexible initial payment methods like splintering connection cost, perceptions of water quality, and the availability and reliability of the water system. These problems propel people in Akatsi township to use different sources of water for different purposes.

The use-values people derive from the consumption of a particular source of water like taste and ability to lather are of prime importance to water users. The quality of the river is seen by the people of Torve to be better compared to that of the borehole water. Community water provision through boreholes as is being done in Akatsi District and Ghana in general does not adequately capture these complex values leading to some water points not being used, especially where there are substitutes like rain harvested water. Instead of forcing communities to accept new water facilities that are being provided, there is the need to understand specific local values attached to water and what the people actually use a particular water source for in order to encourage its provision.

### 8.2.2 Concluding Demand-oriented Community Management of Water

CM of natural resources like water supply was promoted in order to provide improved services, equity in resource allocation and promote collective action, above all sustain the services being provided (Mtisi and Nicol, 2003; Apthorpe and Conyers, 1982). These principles under which CM are promoted are mostly base on the assumption that communities are homogenous in character with little division of interest but this thesis shows that it is not necessarily the case. This thesis has demonstrated that *“the ideals and pronouncements of international organizations, governments, donors, and NGOs do not always translate into reality”* (Carter and Howsam, 1998: 2). It is concluded in this study that

people's access to water in Akatsi is now better than before the CWSP was implemented in 1995. Akatsi is now a better place where government staffs are ready and willing to live and work. Also, women and children no longer have to walk more than one or two km to gather water or to pay exorbitant prices to water vendors to gather water from the river for them. People in Akatsi and Torve are already paying high amounts to use cleaner water sources like sachet water showing that there is the potential to gain from a more reliable and quality water provision.

These successes aside, this case study research shows that there are problems relying on CM institutions to deliver water supply in its required quality and quantity, on an equitable, sustained and efficient basis. Also, water management failed in Akatsi and Torve because the WSDB does not take into consideration equity issues in resource distribution. It is assumed by the WSDB that house owners will be able to afford the connection fee or everybody will pay-per-bucket to fetch water. The policy of paying for a metre and a connection fee created a disincentive to households in Akatsi to connect to the town's water supply network. It also leads to the poor to revert to the use of untreated or poor quality water.

Issues related to high transaction costs of water supply to poor households, community perception of water quality, consistency of supply, duration of supply and pressure in water taps are not addressed by the WSDB of Akatsi. The assumption by water engineers, planners, decision makers and those calling for CM as an compliment to private or state sector management of water sees communities such as Akatsi through the 'development agency lens' of being homogeneous and capable of managing water facilities on their own. Also, Akatsi WSDB's failure to address issues of cost recovery and assisting 'people in need' in the community should be seen as the failure of CM principle rather than the failure of Akatsi WSDB to manage the facility on behalf of the community. This is because there is a vast

difference between managing basic water facilities like hand-dug wells and rain harvested water, to managing sophisticated piped schemes in small towns like Akatsi. For instance, managing Akatsi water facility which is made up of different components like boreholes, pumping stations, electrical installations, pipes of different size transporting the water from the pumping station to the town spanning about 5km, storage, distribution and metering to mention only a few is a complex task that can not be done on voluntary basis as is currently being done in Akatsi and other small towns in Ghana.

The management of water facilities by a local community is often seen as an alternative to the management of water by the private sector or state agencies. In reality however, people working in the WSDB are now seen by the DA as professionals who knows what goes in and out of the WSDB calling for their re-appointment to serve in the WSDB of Akatsi. This seems necessary for the effective operation of the facilities, but this was what Ghana's development donors were against leading to the dissolution of the GWCL. The question to be asked and yet for which an answer cannot be provided here, is whether the aim of CM is solely to recruit people who can be paid allowances instead of salaries? Also, the over-reliance on the laws of CWSP is reducing the flexibility and local consideration offered by proponents of CM (Shiva, 2002; TNI, 2005). Since the Akatsi facility management plan was not designed by the WSDB of Akatsi, there will be no difference between the management principle being used by Akatsi WSDB and that of other small towns' water facilities like that of Adidome WSDB, which also benefited from the small towns water dispensation in Ghana.

The role of the state in providing and managing water in rural areas of Ghana is indisputable because of managerial, financial and equity considerations. There is the need to revert either to public sector delivery or a combination of public sector management and CM of services rather than only CM. This is because public sector management of water facilities brings

about unitary resource management and national cohesion rather than the “divide and rule” policy currently being undertaken in water provision and management in the country. Also, by reverting to state provision and management of a basic need like water, the importance and the presence of government can be felt and not seen purely as administrative machinery that is in the community to collect tax from its citizens. To echo Laird (2008:484) *“there is already so little state in many African nations that its further reduction, as opposed to its transformation, will mean its virtual disappearance”*.

In the same way Ghana was hailed as one of the successful pupils in implementing SAP during the initial stages (Anyemedu, 1993; Leechor, 1994), the CWSP has become a “model” success story of CM of water supply facilities to international development organisations and NGOs (UNDP, 2006). This designation is solely meant to relieve state agencies from managing water facilities. International organizations led by the WB and IMF are valorising Ghana’s CM of water in comparison to that of government agency management without due regard being given to what the water users use the water for. Also, Ghana’s CM is being seen as virtuous by the international community, NGOs and the Ghanaian government in order to carry out the austerity measures of relieving the state from water provision and management. Further, due to the realization that the state will be made to bear the management of the “unprofitable” rural water, CM is ‘being pushed down the throat’ of the rural population of developing countries like Ghana as dictated by the WB and IMF and in line with their “commodification” agenda.

The “imposition” of CM by the GoG and its development partners on the people of small towns and rural areas to instill a sense of ownership of the facilities is not a sufficient condition to manage water well. This conclusion was also voiced by Cleaver (2001: 36) that:

“the conundrum of ensuring the sustainability of development interventions is assumed to be solvable by the proper involvement of beneficiaries in the supply and management of resources, services and facilities..... yet, there is little evidence of the long-term effectiveness of participation in materially improving the conditions of the most vulnerable people or as a strategy for social change”.

With regards to the usefulness of the ladder of participation (Arnstein, 1969) in CM of water in the study area, it is concluded here that, people were given the right to participate in decisions affecting water supply in their communities but only few people participate because participation is seen as a source of income and where they were asked to participate on a voluntary basis for a long time, they withdrew. Even though local people’s participation has the advantage of protecting them from “*uninformed public opinion prevents the tyranny of the majority and serves as a check on corruption*” (Roberts, 2004: 316) it is seen with scepticism in Akatsi. Akatsi and Torve people are therefore still in the non-participation or tokenism stage of Arnsteins (1969) ladder of participation.

Getting institutions managing resources right becomes problematic because institutions in rural areas naturally somewhat evade their design and in attempting to get them right, people’s interests are overlooked (Cleaver and Franks, 2005). CM is not the solution to water provision and management on sustained basis but rather has led to water becoming dearer to the poor. This is because commodification has crept into water management even at the community level under the label of cost recovery. To this study, a u-turn back to state agency’s provision and management of water is necessary if water is to be supplied to people in small towns and rural areas equitably and to a large segment of the population. This study is not calling for the total removal of local people in managing water. Rather, what is being argued for here is that the management of small town water infrastructure is beyond the means of small towns without the requisite financial, technical and managerial backing.

The HDR is right in pointing out that the poor pay more than the rich in Ghana (UNDP, 2006). The UNDP is also right to state that Ghana needs to increase the rate of water provision by a factor of more than nine in order to achieve the MDGs (UNDP, 2006), because people still have to queue to get water in Akatsi. However, the conclusion of this study is that the rural water supply in Akatsi and Torve is a demand-oriented approach that is not sustainable. Following Bakalian and Wakeman's (2009) assessment of water projects sustainability, it is concluded here that the water facilities provided in Akatsi are not sustainable to meet the MDGs and beyond. Indeed, Ghana's demand-oriented CM of water facilities has filled a deep void that the GWSC could not solve because it was starved of the human and financial resources needed to deliver clean and affordable water facilities to an increasing population of 2.4% per annum (GSS, 2002a) in comparison with what has been delivered under the CWSP, but the projects do not show any sign of being sustained financially into the future.

Giving autonomy to local community members to manage water facilities will not lead to facilities being managed efficiently and sustainably to recover all the costs associated with water management on a sustainable and equitable way. In line with other studies like Cleaver (2005) and Purcell and Brown (2005) the findings from this study points to the fact that there is no need to romanticise CM of water. This is because CM perpetuates inequality and also depends on the vulnerability of women which is disempowering rather than empowering community members. Since it is women who were noted to pay for water used by their households the CWSP cannot be said to benefit them in terms of cutting on the amount of income spend on water. They therefore use a particular source of water that satisfies the need at hand but above all, people attached specific use-values to water from each different source.

This research clearly reveals that tremendous pressure is being put on the Ghanaian government especially its main lending institutions - IMF and WB in their neoliberal policy of SAP and HIPC leading to distorted impact on the poor. Adhering strictly to conditionalities of these institutions is vital for the acquisition of future loans, no matter the negative implications it has on the poor. Skidmore and Craig (2004) argues along the same line by pointing out that funding conditions, reporting requirements and structures put in place to account for funds can produce a reinforcing loop on old categories and divisions and old ways of working.

While CM of water facilities can promote participation, accountability and transparency in water management, there is no sign of it happening in the study area but was driven mainly to reduce the expenditure of the central government on services provided to satisfy poor rural people. The overall goal of the neoliberal agenda in Ghana and other developing countries is to reduce government's "*deficits and improve the government's ability to pay back its loans*" (Amenga-Etego, 2003: 3). It has nothing to do with reducing poverty and increasing participation for the management of the water facilities. This study contributes to the debate of how neoliberal ideas of water supply are being managed and how it affects local people's use of water individually, at the household and the community level. This study demonstrates synoptically the understanding of CM of water by placing Akatsi and Torve in the wider context of attempts to improve water provision – water supply development through privatization and cost recovery principles. As a result of wider international development policies, citizens become confused as to who is responsible for managing social problems in their localities (Uitermark and Duyvendak, 2008) and water facilities provision and management is one area that this confusion is becoming very paramount. Lacey and Ilcan points out that due to neoliberalism, the state now "*engages in the production of various modes of subjectification where particular individuals, citizens, or groups are viewed as*

*responsible subjects who are to take greater responsibility for existing social and economic problems”* (2006: 36) even when it is obvious that they are incapable of managing the resource sustainably.

Community participation and management of facilities is being pursued with the aim of creating community oriented behaviours and perceptions among citizens or people living in a given area (Navarro, 1994) in order to increase their standard of living and the sustainability of these facilities but there is not sign of sustaining these facilities and expanding them in other communities. It however shows Bell and Franceys (1995: 1177) assertion that;

“communities lacking the modern management skills, those which do not conform to the new “model community” image or who do not display the necessary consumer individualism, will once again become obstacles to development to be excluded on grounds of their irregular incomes and weak institutions.

Findings from this thesis are far from Blanchard’s (1988) operational strategies of bottom-up model of community development. Some of these strategies are community participation; motivating local communities to engage in the management of their facilities; expanding the learning opportunities of community members; improving local resource management; replicating human development; increasing communication and interchange of ideas; and localizing financial access (in Larrison, 2002).

Holman (2000) also affirms that projects rooted in a community can lead to inclusive tendencies through the election of community managers, the formation of self made policies and the handling of accounts by local staff (In Turner, 2007). Indeed, some of these strategies have been identified in this study. However, they are not being applied to the later leading to poor results in the management of the water facilities. This thesis therefore shows that it is difficult and rhetorical to point out that the demand-oriented CM of water facilities is working to sustain the facilities for the future. There is the need to better understand

structures that are impeding the bottom-up model, which this thesis has brought out as inadequate participation of community members in community affairs, reliance on profit rather than quality of services being provided, the politics of ownership, appointment and election, and stunted opportunities for community managers to learn from outside rather than what they themselves have evolved are some of the necessary factors that impede the accomplishment of the stated goals of community participation and management. This realization is not new to this study but was echoed elsewhere by Turner (2007). Management and priorities of the people are actually identified not within the community but outside which can be said to contradict the bottom-up model of CM as discussed in chapter two of this thesis.

It has been shown in chapter 2 of this study that community is a word with many meanings and uses (Doe and Khan, 2004). In Ghana, the CWSP assigned community to mean a place where people live however, Checkoway (1995) sees a community as a unit of solution in society and is a process through which people take initiative and act collectively. A community is about a group of people, with common interests who are capable of taking collective decision and action for their common good but collective action was seen to be a problem in a small town like Akatsi. Majority of small towns in Ghana do not exhibit the characteristics of an organized group to act collectively. What is more, Wood's (1994) definition of community management as management through democratically elected representatives of the community does not hold sway in the case of Akatsi, a small town in Ghana. In the words of Arnstein (1962: 219) participation should not be undertaken as "window-dressing" to give members of the communities the satisfaction that they are participating and to give the donor or development partners the sense that they have undertaken what is required in involving the people in the provision of facilities.

### **8.3 Policy Implications and Recommendations**

The results from this study indicate that water quality is a problem to sustainable water provision under the CM principles in Akatsi District. This problem can be attributed either to seawater intrusion (Schäfer et al, 2009) or the geology of the southern region of Ghana. Akatsi is less than 10km from the Keta lagoon which is a salty lagoon. CM of water does not lead to reliable, quality and efficient water services leading to people relying on their usual sources like rivers, hand-dug wells and rain-harvested water. The implication is that, the provision of water facilities by development partners and NGOs will only be a one-off investment in the water sector because the facilities are not being used to generate income to replicate it in other towns and villages. There will be no room for future expansion of the water facilities to meet a rapidly growing population. This development perpetuates dependence on these development partners. The implication is that, these rural communities, and for that matter Ghana will always be assisted with water provision instead of the communities being trained to develop their own water facilities. Here comes the suggestion by Nicol (2000) that water facilities will be sustainable when the people who are to benefit from the facilities are provided with sustainable livelihoods.

As noted in section 5.7, GTZ spent over £390,000 to construct the Akatsi town water facility. The CWSP is thus over-reliant on donors to finance the projects and this is becoming the order in all developmental activities in the country. The implication is that, no water facilities will be provided when these funds are not forth coming as projections by UNDP (2006) shows that, Ghana will have to increase its construction of potable water facilities in order to achieve the MDGs. In the wake of the current global financial crisis, progress in the achievement of the MDGs is at stake. Strenuous efforts therefore need to be undertaken to

rely on some local provision and management strategies to curb the reliance on foreign funding.

Another implication of CM of water is that community institutions like the WSDB operate in creating spaces for exclusion of the poor and inclusion of the well to do in water usage. Since supervising managers of the water facilities in rural areas and small towns like Akatsi is absent and so much responsibility is placed on members of the WSDB who are not being given refresher courses to do their work and paid stipends for the work done, in future, the failure of the water facilities will be blamed on the community and not the government or the CWSP. For the water facilities to make a sustained impact on the lives of the beneficiaries, attention should be given to this managerial problem which has been identified by this study as one of the very weakest part of CM of water. For, without managerial training of water managers, the ability of the people to use the facilities will not materialize even if the facilities are being managed by the communities themselves, the state or private companies.

The sustainability of the facilities may require payment to access water whilst equity considerations in accessing water may favour vulnerable groups which go against cost recovery. But the question is which one comes first, poverty reduction and health improvement promotion through the use of potable water, or payment to sustain water facilities? This study is arguing for equity of access to a minimum quantity of water which can sustain life as is being done in poor communities of South Africa (Bond, 2008; Funke et al, 2007; Goldman, 2007). If this is not done, the implication is that, poverty will be entrenched in the rural areas when WSDB/WATSAN committees insist on the poor paying to access water.

One major policy implication of findings from this study is that, gender mainstreaming is at stake by the over reliance on public stand pipes of water provision. This is because, men are not comfortable picking bucket to go and gather water from the public taps. In this case, if the agenda is to provide water nearby to make men assist in household activities in order to spare sometime of women to undertake income generating ventures (Ivens, 2008), then the current provision of water under the demand-oriented principles is not enough. There is the need to encourage the provision of water in and around the house and not at the public space as currently being done. This call for the reduction or removal of metering and connection fees which was found to be a major factor hindering connection to the network. There is the need to incorporate existing local water management strategies like rain water harvesting into the CWSP. Some buildings in the community like schools can be used to serve as rain water harvesting platforms for onward transportation to a main reservoir. These reservoirs can be locked during rainy season to be used during the dry season when good drinking water sources are scarce and expensive to access.

Also, a very important finding identified by this study is that ideas, use-values as well as social and institutional practices that affirm gender inequalities are still present within the water sector despite political and institutional call for its eradication. There is the need to pay people, not just women who work in rural areas in managing resources. These salaries cannot be in equal terms with what is given other workers in urban areas but attempt should be made to pay people a living wage for poverty reduction among community workers as well. By doing this, one can conclude whether payment for the management of community resources can lead to the sustainability of the resources.

In terms of the implications of this study for understanding of gender issues, development planners, scholars, and activists have come to the realization that empowerment of poor

women in the third world is the key to solving some of the problems of poverty, hunger and environmental degradation (World Resources Institute, 1994). Women not being paid for the work they do for their communities in managing water will lead to entrenchment of their poverty. This is because, Dempsey (1987) showed how divisions in gender roles translate into real economic inequalities in terms of employment and income and this is being perpetuated in the water sector. What is more, just putting a quota on the number of women that should form WSDB or WATSAN committees will not lead to the promotion of the interest of women in water management. The implication here is that women will fill the position but will not contribute to debates to better their lot due to their inability to take part in debates.

Participation in community affairs like managing water facilities also brings about differential burdens on women as they will still be responsible for major works at home even after being given the opportunity to take part in decision making process (Phillips, 1999). Women's participation in decision making is a measure that will help alleviate some of the suffering of women however, there is the danger of perpetuating 'myths and stereotypes' in the water sector when women are asked to participate in it without due remuneration. Since it was shown in this study that women pay for water used by their households, the gender implication of shifting water management to the community level and payment for water by women is that they tend to use water sources that are cheap or not paid for instead of the potable once provided through the public stands. No wonder, the WSDB is complaining that people tend to use other sources of water than the one from the public stands. The choice women have in using water and engaging in income earning activities has been compounded as a result of the CM of water in Akatsi. Policies that exclude or blatantly lead to inequality of women in the water sector should be condemned as being done in this thesis. Women and men's roles and responsibilities in planning water facilities are important for development

and for improving the sustainability of the facilities however, this approach to the provision and management of resources like water failed to focus on what development can do for women in contrast to what women can do for development (Momsen, 2004). It is strange that gender activist in developing countries accept women to participate in managing water resources even at the midst of calls for transformations of economic, social and political structures at the local, community, national and international levels for the betterment of women, their households and the community in general. Indeed, Boserup's work showed that most housework done by women is undervalued because it is unpaid work leading to *“misallocation of resources between men and women..... a comprehensive understanding of the impact of development policy on both households and the individuals within them still evades us and the gender benefits often remain uncertain”* (Horrell and Mosley, 2008: 2) but these same work has been accepted within the water sector purely because it is for their betterment. In such a case it will be beneficial to focus on 'weeding out' gender inequalities within the household for all to benefit from development.

To this study, asking women to take part in the management of water resources at the local level will not assist in women to occupy high positions in society like representation in parliament (Awumbila, 2007) but rather lead to their subservient to men in the water sector. UN resolutions and agreements requiring gender mainstreaming in policies, programmes and institutions as echoed by Momsen (2004) and Chant and Pedwell (2008) is not being applied in water management in developing countries like Ghana.

There is therefore the need to deal with injustices that socially, economically and materially marginalized women through the enactment of legislation to reduce inequality and improve wellbeing for poverty reduction in rural areas of developing countries and not Ghana alone. There is therefore the need to re-evaluate Ghana's CM strategy to accommodate the

inequalities that has been shown in this study especially on the issue of payment for the work women do in their WSDB/WATSAN committees. Since it was shown that gender is performed in the water sector, it stand to reason that there is room for change in how boys and girls are reared up for them to appreciate that boys can perform girls roles and vice versa. The media and ubiquitous NGOs in Ghana can up take this challenge.

The CWSA and DA's who have the main responsibility of facilitating and managing WSDB and WATSAN committees should be resourced to provide long-term support to WATSANs and Water and Sanitation Development Boards (WSDBs). It was realized that because they were not well resourced, they find it difficult to assist the WSDB and WATSANs. Also, accountability should be enshrined in the principles governing the water sector. This will not only improve the management of community water facilities and services but also go a step further in ensuring that the people are accountable to their communities and not only the DAs.

Sector co-orporation is essential for the success of the CWSP. It was realized that there is no cooperation between the different state institutions in the DA. Each agency, ministry and department is autonomous even though, water management has been decentralized. There is the need to establish a body in the form of a community water directorate within the DAs to assist in sector management and help facilitate linkages with the other sub-sectors and key Ministries, Departments and Agencies that have a role to play in the new water dispensation of Ghana.

The findings from this study show that there is no coordination of activities between: the people of Akatsi and WSDB officials; the WSDB and the DA; the DWST and the DA; and the DWST and the CWSA. Improving the coordination of activities between these

institutions will be a long process but could easily be done through the formation of pilot water management points in a town. Success or drawbacks of such coordination between these institutions could be established and improved. Also related to the above is on education. The WSDB members have to be educated on participatory techniques in order to ensure the success of such a task. Indeed, improving WSDB members' knowledge and skills in the methods of participatory approaches is a necessity however, this is not an end. The interest of the people of these communities especially those in small towns like Akatsi also have to be developed under the demand-oriented CM principles of Ghana. NGOs could raise this awareness among the people on the possible benefits and problems that they stand to gain or lose from their participation or non participation through village meetings.

Lockwood (2004: 7) commenting on recommendation for the sustainability of water facilities points out that:

“other options do exist and may become more relevant as demand for more sophisticated systems and higher service levels increase. More complex systems may well build on and include aspects of community control and management, but they will probably also include combinations of management responsibility: private sector, public sector and community”.

The remarks by Lockwood is happening in the study communities as such there is the need to provide more sophisticated water facilities that are acceptable to the people like the piped water scheme from the Volta river being enjoyed by communities along the Keta lagoon in the Keta District. Akatsi District is not far from these communities as such it will not be too expensive to extend this facility from Sogakope to the Akatsi District.

Among others, the study recommend that deprived communities that are not able to provide the 5% commitment fees for facilities construction should not be left on the way side but mechanisms for assisting these communities should be developed. This will not only increase coverage but also assures rural people that their government cares for them and are part of the

good Ghana agenda being promoted. Budgetary allocation to all districts in the form of the district assemblies' common fund should not only be released on time to enable districts to contribute their 5% cost of facilities provision but their amount should be increased. They can be supported through the heavily indebted poor countries (HIPC) initiatives that Ghana is accessing. For flexibility and the need to provide water to all, the HIPC funds should be used to absorb the 5% cost of community contribution towards capital cost of a facility provision.

Urban communities in Ghana pay a levy equivalent to a percentage of their water usage to cater for rural water provision. There is need to institute policies that govern the collection and disbursement of these funds to meet the water and sanitation requirements of extremely deprived communities who are unable to access water systems on their own. The demerit of relying on this approach to assisting poor communities is that the communities that have been assisted will not have the opportunity to demonstrate commitment which could undermine the ownership principle upon which the water provision concept is being implemented. However, ample evidence has been shown in this study that majority of towns are already resisting this policy as such there is the need to remove it altogether from the water sector in Ghana.

This study identified a number of limitations within the CM model of water management and use. These limitations include: those within the community itself like community dynamics, political or social conflict, failure to generate enough revenue to keep the water system running beyond its intended lifespan, lack of cohesion within members of a community and lack of capacity (managerial, technical and financial). There is the need to take care of all these community generated limitations for CM in order to ensure the realization of the goal of sustainability of water facilities.

Constraints external to the community like cost of the water system, poor implementation of the CWSP, poor resource allocation to communities, lack of supportive policies and legislation and inadequate long term support to help communities through major repairs all needs to be tackled for success of the programme. Water facility management at the local or district level cannot happen without the support from the national level. At the national level, efforts are required to provide positive enabling environments of the water sector. There is the need to modify sector policies, legislation, regulations and laws to develop planning mechanisms to favour the CM model as identified by experts like Rosensweig (2001), Lockwood (2002) and Schouten and Moriarty (2003).

Financing water facilities construction and management is one of the greatest challenges to the CM model. Financial resources are needed to address different set of costs like: capital costs for replication of facilities; debt servicing costs; community level operation and maintenance costs; the cost of participation in facility management; creating a positive enabling environment and providing capacity building to all stakeholders under the CWSP; and last but not the least the costs of creating and sustaining the institutional support mechanisms at all levels to provide back-up support to water users in a community.

#### **8.4 The Contribution of this thesis to Knowledge**

This thesis represents a divergent and momentous contribution to the debates over water supply in developing countries. This study argues that it is not all domestic water sources within a community that is bad for human consumption but rather quality tests should be undertaken to ascertain to improve on older views of community water supply like rivers and rain water harvesting. The thesis is among the few if not the first to point out that the policy

of women participation in water management on the ground that they manage water at the household level does not necessarily lead to women making informed decision on water management using Akatsi and Torve as a case study. Even though, the 30% women number in the WSDB was met in Akatsi, women still performed gender stereotyped roles of being found at the lower echelon of decision making compared to men. That, women participation in water management does not necessarily lead to the poor or women interest being served. This study shows that the women water managers in Akatsi and Torve are not necessarily the poor members of the public. What is more, the study showed that these women water managers are rather being disempowered because they no longer undertake their normal economic activities when managing community water facilities. Where they do, the women lose in terms of income because the neoliberal water policies pay them allowances to undertake 'full-time' jobs in contrast to the avowed claim by water policy that, women should take part in water management for their empowerment (Ivens, 2008).

This study brings to the fore problems the poor and women face in water management under the CM principle in Ghana. For instance, even though Radcliffe (2006) notes that gender mainstreaming is gaining new policy and public visibility; it however comes at a time when neoliberal policies have entrenched gendered differences and impoverishment in developing countries. This study has shown that despite the rhetoric of women and community empowerment, gender discrimination in wages still remains a force in the water sector not only in Ghana but developing countries as a whole. This thesis therefore challenges the status quo that peasant rural people should continue to provide or manage environmental services on voluntary or allowance basis whilst their urban counterparts are paid wages even though the resources they are managing are becoming complex due to societies' increasing and changing demands for better quality services. Reliance on this policy cannot bring about poverty reduction as being claimed in the development literature because people rely on

income they earned from services they render to an entity which is then injected into the economy for growth. The policy of women being seen mainly as volunteers in rural areas whilst those in urban areas are paid wages for the services they render is perpetuating inequality. This cannot bring about poverty reduction of women who in Ghana and other developing countries are seen as predominantly poor. Morality and selectivity of the commodification agenda is questioned in this study and a call for its redress is being advocated.

Indeed, the argument about remuneration or allowance being paid to community water managers is little known within the water and sanitation sector of developing countries and this thesis has gone a step further by showing how it leads to double standard of paying some water managers at a bigger geographical scale whilst those at a smaller scale like villages and small towns are paid allowances for the work they do. This is an area that I can say I have made original contribution to the literature by arguing my case across these lines.

This study is among the first to show that CM of domestic water supply in Ghana does not necessarily lead to its expected outcome of majority of community members participating in decision making concerning their water. Also, this thesis contributes to the participatory development literature in geography and development studies by pointing out that CM does not necessarily leads to equity in access to water use by all members of the community and management of the facilities for sustainability rather, the community water managers are not accountable to the community they are expected to serve. This study showed that development partners' support in the community water sector of the Akatsi District meant to increase transparency and accountability by water managers to their community (Woll, 2008) is failing its goal.

In terms of the positive aspects of CM, this study has established that interventions in improved rural water services in Akatsi town is bringing some improvement in distance people travelled to gather water however the challenges on the welfare of the poor is insurmountable. That, more intervention is needed for the community to enjoy water in the right quantity and quality needed for Ghana to achieve the MDGs. This study therefore serves as the much needed feedback loop to policy-makers for the improvement on policy formulation and implementation of rural water schemes. Main contribution is in the area of water management at the lowest level of decision making-community and household levels. The study points out that it is impossible to rely on the growth pole concept, decentralization or bottom-up principles of water management to generate revenue to be used in replicating water facilities in other communities.

This study is one of the first to fill the gap in knowledge by combining both scientific water quality test and local knowledge in water quality to point out that people refuse to use the community managed water facilities for its intended purposes because use-values of water like taste, scent and ability to lather are important but never use in water management under CM of water. That, women who are the traditional water users in Akatsi and Torve have use-values they derive from water sources and appreciating these use-values of water can have implication for the sustainability of the water facilities. The water needs of the beneficiary communities have been assessed from the micro level and I pointed out that the water needs of people in Akatsi and Torve are obviously changing and currently not satisfactory to what is being provided under the CWSP leading to people in a community like Torve not to use the borehole constructed for their use. The universal policy notion of 'hygienic' drinking water does not apply to people of this community rather, water is reduced to benefits the local people derive from it in the form of taste when stored in the pot, when used in cooking and

reaction to soap. This study therefore contributes to the debate in Ghana on the shift of providing water to communities, base on the principle of CM of their water sources.

This study has contributed to the literature on bottom-up management of natural resources by pointing out that the demand-oriented community water programme of Ghana which aims to promote women's participation in water governance at the local level is not working to empower women, and serve as a stepping stone to occupy future leadership roles. In reality, it does not empower them to take part in economic activities that will benefit them and their households. The argument here does not imply that seeking women's participation in the management of water at the local level should be abandoned altogether. Instead, there is the need to understand the nature of women's participation in managing water resources and how it affects their economic status within and outside the household (Singh, 2006b). Also, this study shows that there is the need to holistically analyze factors that impede women's participation and empowerment as being propagated within the development literature in order to sensitize water planners, gender activists and development institutions on the institutional contradictions that are being perpetuated within the water sector in order to enable women to define the terms of their involvement themselves.

This thesis also contributes to the literature on participation by pointing out that the participation and management of hitherto marginalized rural communities in development projects that affect them have become the new development rhetoric being capitalized on by international development institutions like the WB and IMF. Indeed gender activists have raised their voices on the representation, agency and voice of women in development literature (Cleaver and Elson, 1995; Cleaver, 2001; 2005) however, no one was able to question the status quo of women providing essential services for the benefit of their communities without due remuneration. Through the exploration of women participation in

WSDB, this study points out that strategies and tactics being applied in the water sector of Ghana to make participatory development more gender sensitive actually dis-empowers women economically by preventing them from engaging in meaningful income generating ventures. The study pointed out that involving women is not the same as addressing gender needs of women for poverty alleviation. Also, income is a major determinant of types of water people use in Akatsi and Torve. This study points out that there is discrimination on the part of water managers even at the local level where it is assumed the interest of the poor will be present.

Another contribution of this study to development studies and geography can be seen in gender being performed in water collection and not based on biological sex as argued by Butler (1990). This study, by using water collection at the household level extends the works on gender as performance which was first introduced by Goffman on gender practices where he pointed out that “*gender displays do not so much allow for the expression of natural differences between the sexes as for the production of that difference itself*” (Goffman, 1977: 324). Boys can decide whether to perform gender in the water sector or not to. In this sense one becomes subject to the performance in the water sector and our performances of others towards us. The performative stance of Butler provides this study with the ideals of masculinity and femininity that makes water collection in a household acceptable to girls and seen as bad for boys.

Another area this study has contributed to knowledge is on the drawers of water debate where I argue that current norms of gender may marginalize many men and that social constructions of gender excludes those who do not neatly fit into the categories of male and female. In Ghana, these deeds extend beyond the household into the community where some aspects of water collection are seen as manly - those that bring income to men and others that are not

done for income are viewed as work of women. This study contributes to the development and geographical literature by pointing out that water collection and use is changing. Men are assisting in water collection due to socio-economic transformations, the level of education of men and women within a household and the availability of transportation to carry the water. This study is therefore in line with Gregson and Rose's (2000: 434) view that "*a notion of performance is indeed crucial for a critical human geography concerned to understand the construction of social identity, social difference, and social power relations, and the way space might articulate all of these*". This study mapped out themes that surfaced in water collection, management and use at the various spatial units of analysis starting from the household, the community and district by showing that gender is performed and the reasons why gender is performed is based on social construction of the roles that boys and girls have to play at the household level.

This thesis also contributes to the debate on women empowerment by pointing out that policies that continues to create gender inequality and subordination of women to men are still present and not only being perpetuated by households but by the institutions that are calling for empowerment of women in developing countries like Ghana. Indeed, gender inequalities have not been removed in developing countries like Ghana due to some of these policies like neoliberal agenda imposed on governments by major lenders like the WB and IMF without corresponding remuneration of water managers.

## **8.5 Suggestions for Further Research**

Water abstraction on a large scale as being done in Akatsi and other small towns in Ghana definitely deprives other communities from having a fair share of their available water.

Studies should be conducted to determine whether large scale water abstraction under the small towns CM concept deprives or curtail other communities from accessing water.

This study depends on only two communities in the Akatsi District to understand water use and management. Future studies in community water management should endeavour to include more communities in the district to ascertain reasons for success and failure of CM of water facilities. Also, studies should be undertaken to show whether community contribution to capital cost of a facility actually lead to a sense of ownership of the facilities and how these relates to the sustainability of the facilities.

It was shown in this thesis that geology and location of Akatsi District might be a factor leading water hardness in the area. There is the need to conduct studies to determine for certain the reasons why underground water facilities in the southern section of Ghana to contain high levels of acidity. Also related to the above is the recommendation that studies should be undertaken to determine the health impact of the use of the current high pH, fluoride ion, sodium ion and salt laden water on the people of the study area. This is because it was made know that increasing consumption of water with high levels of acidity is bound to affect the health of the people. Water from boreholes in Akatsi and Torve were found to contain pH levels, fluoride and sodium ion levels far higher than the “maximum acceptable limits but also greater than 2450 mg/l, considered to be the critical value above which some long-term health problems might be anticipated” (Tay, 2007: 8). Abiding by this recommendation will not also assist in diagnosing the problem early than for it to affect large number of people in the future.

This study relies on findings from a small town in Ghana and a rural community to come out with the conclusion that performing gender in water collection at the household level is

changing mainly due to education, income and technology but not necessarily providing water near the community. Research should be made in other communities to ascertain how gender relations are changing in the household as a result of water availability within shorter distance. Men are meant to assist in water collection and it will be very interesting to know how this is changing in big urban areas like Accra, Tema and Kumasi. This will help to make stronger claims that providing water at community or household levels is improving gender relations and status of women within the household or the community at large.

Another area for further research relates to an examination of policy and legal instruments of CM of water supply facilities in small towns and rural areas. It was shown in this study that because the WSDB is not legally empowered to sue and be sued, it could not institute legal action against its defaulting customers. Studies should therefore be undertaken on how the laws of the CWSP are impeding the smooth operation of the WSDB for remedial actions to be taken to improve the works of WSDB in Ghana.

This thesis does not specifically address gender issues in water management but this issues crops-up in the course of the discussion of findings. It was thus realized that a number of issues relating to water management in the study areas has to do with women. There is the need to devote a study on how the management of water resources at the local level by women is impacting on their well being and poverty. This will help shed light on how the bottom-up approach to resource management is impacting positively or otherwise on women in particular.

Carter et al, (1999:12) asserts that “*government’s inability to build and maintain water supply infrastructure has been (one of) the major factors leading to the promotion of community participation in water management*”. In the same vein, this study also shows that local

government agencies like the DA have been given enormous task to perform in the midst of dwindling financial and manpower resources at their disposal. Further studies is required to show how financial and human resource at the disposal of Ministries, Agencies and Departments in Ghana at the local level are impeding on water facilities provision and delivery not only at the rural areas but in other urban areas as well.

**Appendix 1: Sample of Questionnaire Administered in Akatsi and Torve**

UNIVERSITY OF LEICESTER, DEPARTMENT OF GEOGRAPHY

**TOPIC: MANAGEMENT, USES AND VALUES OF DEMAN-ORIENTED COMMUNITY WATER FACILITIES IN THE AKATSI DISTRICT OF GHANA**

**SECTION 'A': PERSONAL DATA**

- 1 Community Name:  
a. Akatsi  b. Torve
- 2 Sex: a. Male  b. Female
- 3 Age (in years)  
a. 18-24  b. 25-30  c. 31-35   
d. 36-40  e. 41-45  f. 46-50   
g. 51-55  h. 56-60  i. 60 +
- 4 Marital Status:  
a. Single  b. Married  c. Consensual Union   
d. Separated  e. Divorced  f. Widowed
- 5 What is your highest educational attainment?  
a. None  b. Non-Formal Edu.  c. Primary   
d. Middle/JSS  e. SSS/'O' Level.  f. Comm/Voc/Technical   
g. Post Sec./Nursing/Polytechnic  h. University   
i. Other (specify)
- 6 What is your main occupation?  
a. Farming  b. Trading  c. Civil Servant   
d. Hunting  e. Artisan  f. Others (specify).....
- 7 Are you engaged in any other income earning activity?  
a. Yes  b. No
- 8 If yes, what is this?.....
- 9 Kindly tell me the house type that you leave in?  
a. Cement house  b. Mud house with thatched roof   
c. Brick house  d. Brick with Iron roofed   
e. Others.....

**SECTION 'B': IMPACT OF CWSA PROJECTS**

- 10 In your opinion, would you say there has been improvement on water facilities in your community in the past ten years? a. Yes  b. No
- 11 Can you please explain why this answer?.....
- 12 Who provide the piped water to the community?  
a. District Assembly  b. N.G.O.   
c. Individuals  d. Community through donations   
e. Others.....

- 13 How would you rate your access to the water facilities provided in your community?  
a) Easy access [ ] b) Access with some difficulty [ ]  
c) Access with great difficulty [ ] d) No access [ ]
- 14 What is the major source of domestic water to this community?  
a. Pipe borne water [ ] b. Borehole [ ]  
c. Hand-dug Well [ ] d. Rainwater /Reservoir [ ]  
e. Dam/River/Lake/Pond [ ] f. Others..... [ ]
- 15 What was the major source of domestic water to this community before pipes were constructed?  
a. Pipe borne water [ ] b. Borehole [ ]  
c. Hand-dug Well [ ] d. Rainwater /Reservoir [ ]  
e. Dam/River/Lake/Pond [ ]
- 16 What is the distance from your house to the major source of domestic water now?  
a. Less than 30 metres [ ] b. Over 30m but less than 100m [ ]  
c. Over 100m but < 500m [ ] d. More than 500m but < 1km [ ]  
e. More than 1 km [ ] f. Other----- [ ]
- 17 What was the distance from your house to the source of domestic water before the pipes were constructed?  
a. Less than 30 metres [ ] b. Over 30m but less than 100m [ ]  
c. Over 100m but < 500m [ ] d. More than 500m but < 1km [ ]  
e. More than 1 km [ ] f. Other----- [ ]
- 18 What is the estimated total quantity of water (in buckets) used by your household per day now? If respondent can not tell, please estimate quantity for different types of uses. For example quantity for cooking, bathing or washing of plates, clothes etc.  
a. a. Less than 3 [ ] b. Between 4 and 5 [ ]  
c. Over 5 but less than 7 [ ] d. Over 8 but less than 10 [ ]  
e. Between 12 and 14 [ ] f. More than 15 [ ]
- 19 What is the colour of the water you use in your house?  
a. Cloudy [ ] b. Milky [ ] c. Clear [ ]  
d. Brown [ ] e. Other..... [ ]
- 20 Which benefit (s) have you derived from the water facilities provided in the town in priority?  
a. Less time spent collecting water [ ]  
b. Shorter distance for water [ ]  
c. Cost of water now cheaper [ ]  
d. Reduction of water borne diseases [ ]  
e. Others ..... [ ]
- 21 Can you please list some of the problems you encounter with the water facilities according to priority  
1.....  
2.....  
3.....

**SECTION ‘C’: WATER SOURCES, USES AND MANAGEMENT**

- 22 Do you have piped water in your house?  
a. Yes [ ] b. No [ ]
- 23 How did you/people manage to connect piped water to your/their houses?

- .....
- 24 How much does/will it cost to get water connected to your house?  
.....
- 25 If you have no pipe, would you accept piped water to be connected to your house?  
a. Yes  b. No
- 26 Will you and your household be willing to pay the cost of water connection to your house?  
a. Yes  b. No
- 27 Why this answer? .....
- 27b If pipe water is available in your house are you willing to pay?  
a. The total cost of its production  b. Above the current cost of water   
c. Maintain the existing water price  d. Reduce current water price   
e. Can't tell
- 28 What is the reason why people do not use/drink water from the borehole?  
a. There is no water in it  b. It is too hard (brackish)   
c. Too expensive  d. Too far from my house   
e. The colour is bad  f. Others .....
- 29 Do you use different types of water for different purposes in your house?  
a. Yes  b. No
- 30 If yes, can you please tell me why?.....
- 31 Please rank according to order the kind of water you use most often in your house?  
1. .... 2. ....  
3. .... 4. ....
- 32 What do you use the first prioritised water for?  
a. Praying  b. Laundry   
c. Drinking  d. Cooking and food preparation   
e. Bathing  f. Watering crops   
g. Others.....
- 33 What do you use the second prioritised water for?  
a. Praying  b. Laundry   
c. Drinking  d. Cooking and food preparation   
e. Bathing  f. Watering crops   
g. Others.....
- 34 Do you buy water from water vendors?  
a. Yes  b. No
- 35 If yes, how much does it cost?.....
- 36 How often do you buy water from a vendor?  
a. Every day  b. At least once a week   
c. At least once a month  d. Very occasionally   
e. Never uses water from vendors  f. Others.....
- 37 (Ask if said yes to Q36) How much water do you buy on each day or week?  
.....
- 38 Do you buy sachet/bottled water?  
a. Yes  b. No
- 39 Can you please tell me why? .....
- 40 When do you buy the sachet water if you do buy?  
.....
- 41 Kindly tell me in priority what you do if you do not have domestic water to use in your house?

1. ....
2. ....
3. ....
- 42 Are there seasonal differences in water availability to your community?  
a. Yes [ ] b. No [ ]
- 43 How much do you pay per bucket to fetch water?  
a. 50 [ ] b. 100 [ ]  
c. 150 [ ] d. 200 [ ]  
e. Never pay for water [ ] Others..... [ ]
- 44 Do you think the price is too expensive?  
a. Yes [ ] b. No [ ]
- 45 Why do you say that?.....
- 46 Who pays for the water use by your household?  
a. Husband [ ] b. Wife [ ]  
c. Son [ ] d. Daughter [ ]  
e. Others..... [ ]
- 47 How much do you pay for water every month?.....
- 48 What happens if you do not have money to pay?  
a. Go for river water [ ] b. Will be disconnected [ ]  
c. Borrow money to buy [ ] d. Get water from neighbours [ ]  
e. Never uses water from pipe [ ] f. Others..... [ ]
- 49 Who is the main collector of water in your house?  
a. Wife [ ] b. Son (boys) [ ]  
c. Daughter (girls) [ ] d. Husband [ ]  
e. Children [ ] e. Others..... [ ]
- 50 How much time is spent in water collection?  
a. Less than 30min [ ] b. Less than 1 hour [ ]  
c. Less than 1 hour [ ] d. Over 1 hour [ ]
- 51 Is the collected water used differently by men and women?  
a. Yes [ ] b. No [ ]
- 52 How is the water used by women? .....
- 53 How is the water used by men? .....
- 54 Who uses water most in your house?  
a. Mother [ ] b. Son [ ]  
c. Daughter [ ] d. Husband [ ]  
e. Relative [ ] e. Others..... [ ]
- 55 Who is the second most important user of water in your house?  
a. Mother [ ] b. Son [ ]  
c. Daughter [ ] d. Husband [ ]  
e. Relative [ ] e. Others..... [ ]
- 56 Why this answer?.....
- 57 Does this use differ during the dry season?  
a. Yes [ ] b. No [ ]
- 58 Why this answer? .....
- 59 What type of storage facility (ies) do you use for the collected water?  
a. Bucket [ ] b. Earthen pot [ ]  
c. Urn [ ] d. Jerry Can [ ]  
e. None [ ] e. Others..... [ ]

- 60 How often do you have to collect the water?  
 a. Twice a Day [ ] b. Once a day [ ]  
 c. Anytime I need water [ ] d. Weekly [ ]  
 e. Cant Tell [ ] e. Others..... [ ]
- 61 Do you boil the water you use for drinking?  
 a. Yes [ ] b. No [ ]
- 62 If no, why?.....

**SECTION“D”: DOMESTIC ROOFWATER HARVESTING**

- 63 Why do most people in this community use rainwater?.....
- 64 Do you think the use of rainwater harvesting on a large scale will be accepted in the community if introduced? a. Yes [ ] b. No [ ]
- 65 What are your concerns with the use of domestic rainwater harvesting?  
 a. The water quality [ ] b. Water quantity [ ]  
 c. The cost of installation [ ] d. Inadequacy of rain [ ]  
 e. Other concerns.....
- 66 What type of storage facility (ies) do you have for harvested water?  
 a. Bucket [ ] b. Earthen pot [ ]  
 c. Tank [ ] d. Underground reservoir [ ]  
 e. None [ ] e. Others..... [ ]
- 67 What is the capacity of this storage facility?.....
- 68 Why do you use this facility to store your water?.....
- 79 Which recommendation can you give to improve domestic water infrastructure in the township?.....

**THANK YOU**

## Appendix 2: Observation Guide

### A Observations

Detailed observation done on 6 households for a week

- 2 – Poor households- Swish and Thatched roof houses. They live on their own at times without extended family. Six people (father, mother and kids) sharing similar resources were observed
- 2 – Medium households- Brick and iron/aluminum corrugated sheet with or without extended family. Seven people (father, mother and kids) were observed
- 2 – Rich households –Cement house and live independently without extended family. Five people were observed in this house. Father does not live in the house but stays in Accra and comes home during the week end.

### B Sources of Water, Transportation and Storage

- River, rain harvesting, borehole, hand-dug wells and sachet water
- Rationale for preference for one against the other
- Activities involved in bringing water home
- Distance traveled to gather water
- Water gathering process at the river side
- Transportation of the water and its health problems  
Head, wheel barrows, Trucks, Equipments used.
- Sources of water contamination
- Time used to gather water
- What they would use the time for if water is available at home
- People involved in water collecting
- Time water is collected and why
- Distance from house to water sources
- Storage of the water
- Equipments used and why it is being used
- Cost of equipment
- Uses of Water
- Domestic Uses
- Productive Uses-Distillation/livestock
- Amount of water used
- Water saving/managing water in times of scarcity
- Traditional Water Management
  - Narrations on water quality between boreholes and river water
  - Why borehole is not used
  - Technologies used in household water treatment
  - Filtration
  - Thermal and solar disinfection
  - Flocculation-alum
  - The Two-Pot System and sterilization of pot with fire
- Culture and changing use of water
- Occupation and income of households
- Cost of water

- Amount of income spent on water
- Paying for Water
- Willingness to pay for water
- Ability to pay for water
- Gender and ability to pay for water
- Gender and uses of water
- Perceptions on water in general
- Observations on differences between income and water usage
- Determinants of water use
  - Number in the house
  - Number of women in house
  - Educational level
  - Wealth
  - Distance from house to source
  - Prices
  - Time spent at stand pipes to gather water
- Income and water storage
- Water related diseases

### **C General Observation in Akatsi and Torve**

- Akatsi township water supply facilities
- Local Water Management Organizations in the Study Area
  - Sale of hand-dug well water
  - Sale of borehole water
  - Sale of water at the public stand pipes
- Water availability between privately connected and public stands
- Price Difference between piped water, boreholes and hand-dug wells
- Domestic Rainwater Harvesting
  - Technologies for Domestic Rainwater Harvesting
  - Reservations against Rain Water Harvesting and Use
  - Other Issues Involved in Rain Water Harvesting
- Water vending by Tanker owners and push Truck users
- hand-dug wells and Boreholes
- Sachet water vendors
- The Impact of Different Water Sources and Use on the Household
- General preference for different forms of water
- Water Quality Issues
- Pricing and Affordability Issues
- Accessibility Issues
- Percentage of Income Used on Water
- Quantity of water used
- Income spent on income
- Rationale for Preference for Untreated River Water
- Water-borne and Water-related Diseases in the Study Area

### **D Group Discussions**

The 6 households that I observed and asked them of issues related to the study. Males who gathered at the town meeting place and I asked them questions related to the study.

### **Appendix 3: Sample of Focus Group Discussion Guide**

#### **A. Water Collection**

Who is the main collector of water for the household?

Why is this person the main water collector?

Why do you allow your children to go and gather water?

Why is it that men do not gather water for the household?

When do men gather water?

Would you say water sources used by this household have improved over the last ten years?

Why do you say that?

Has the provision of boreholes help in potable water collection? Why this answer?

Would you say the distance you used to walk to gather water is now shorter or the same?

Do men and women make major decisions in the households regarding water to use?

Who makes such decision?

I observed water is cheap during the dry season but expensive during the dry season. What do you do to get water during the dry season?

Do men and women have to make a decision regarding the type of water to use?

Which decisions men have to make regarding the water source?

Which decisions do women make regarding the type of water to use?

#### **B. Water Transportation**

Some women use trucks to gather water. Why?

How do people acquire the trucks?

Why is it that men do not use the basin to gather water?

How do you feel after fetching water on your head?

Does carrying water on the head affect your health?

I saw some people washing at the river side. Why?

Why don't they gather water and wash their cloths in the house?

#### **C. Water Storage and Use**

What do you use the water from the river for?

Drinking river water can lead to diseases. Why do you continue to use it?

What do you use water from the borehole for?

What do you use rain water for?

Please compare the satisfaction you derive from drinking rainwater, river, sachet water and borehole?

Why do people rely heavily on sachet water these days?

When do people mostly drink sachet water?

Who in your household mostly drink sachet water?

Which type of sachet water do you like most?

Who in the household uses water most and why?

Do you boil the water from the river before you use it? Why do you not boil the water?

Why is it that people do not use the borehole constructed in the community?

Why is it that you do not use the borehole for cooking?

Why is it that you do not use the borehole for washing cloths or bathing?

Are you and your household willing to pay to use pipe borne water in your household?

The water from the borehole can be use for drinking when stored?

Don't you think using the coloured river water to wash white cloths can spoil it?

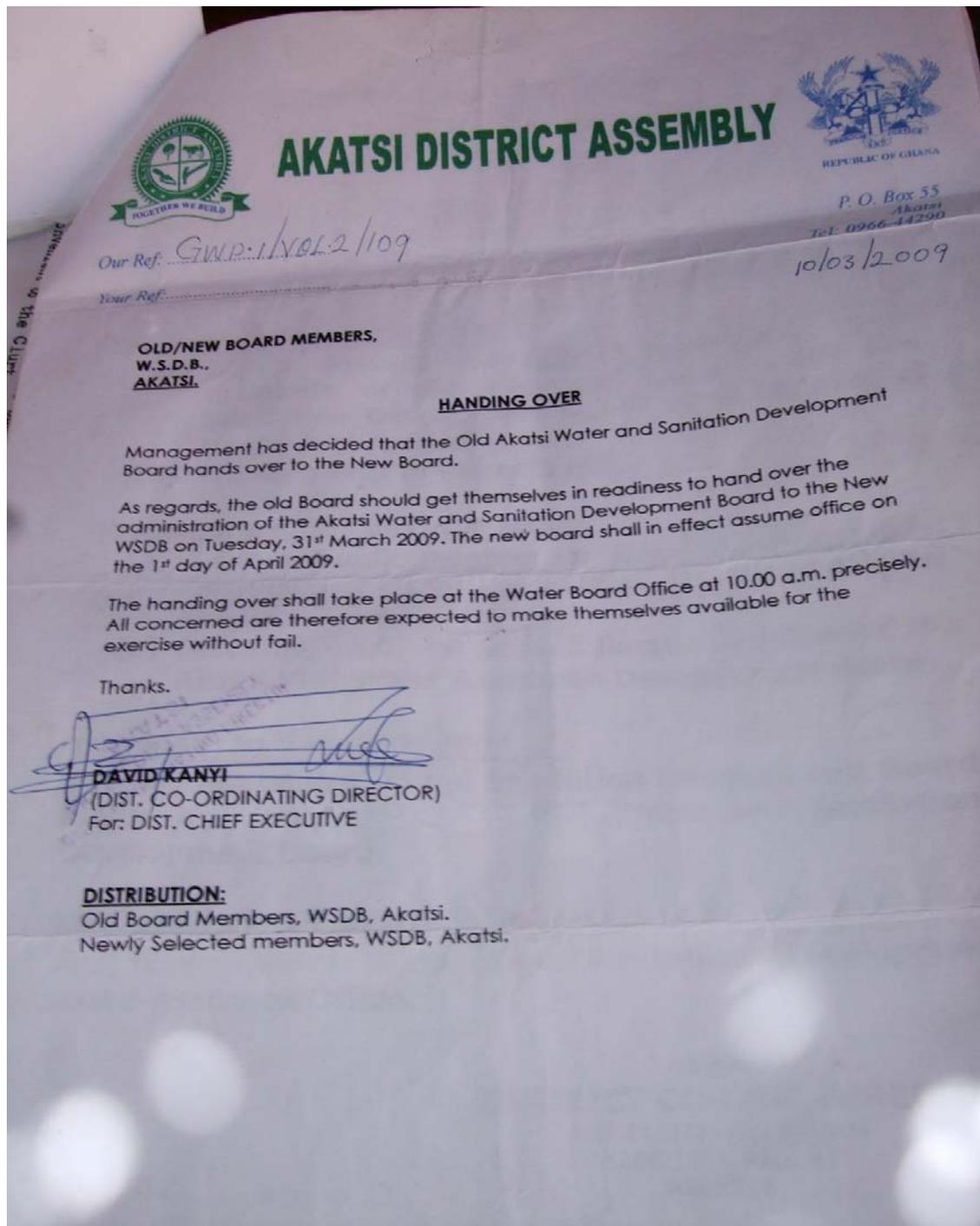
**Appendix 4: People who the informal discussion was done on for the study**

- 1 District Planning Officer
- 2 Chairman, Akatsi Water Board
- 3 Technician, Akatsi Water Board
- 4 Accountant Akatsi Water Board
- 5 2 Female Members of Akatsi Water Board
- 6 Secretary, Torve WATSAN Committee
- 7 Director, CWSA, Akatsi District
- 8 Deputy Akatsi District Co-ordinating Director
- 9 Environmental Health Officer/ District Water and Sanitation Team Member
- 10 District Water and Sanitation Team Member
- 11 4 Water vendors manning the water points

**Appendix 5: December 2007 Electricity Bill of Akatsi WSDB**

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**Appendix 6: A letter from the Akatsi District Co-ordinating Director to WSDB Members**



**Appendix 7: Water Bill of an Urban Customer-Tema, Ghana**

**GHANA WATER COMPANY LIMITED**

**CUSTOMER PARTICULARS**

TEMA 611 TEMA REGION

REPORT ALL LEAKAGES AND OTHER COMPLAINTS  
PROMPTLY AT GWCL TEMA REGIONAL OFFICE  
NEAR STADIUM TEL: 022-202832/3

**CUSTOMER NUMBER**  
611-23-38-2081

**GEOGRAPHICAL CODE**  
2338 - 2081

NUMBER	METER	TYPE
99 0007906		KLTS

**BILL DATE**  
31 March 2007

**MONTH**  
March 2007

PRESENT READING (IN 1000)	PREVIOUS READING (IN 1000)	CONSUMPTION/DETAILS (IN 1000'S)	AMOUNT
638	628	10	
		10 @ 4,031	40,310.00
		WATER CHARGE	40,310.00
		1% FIRE FIGHTING	403.10
		2% RURAL WATER	<u>806.20</u>
		CURRENT CHARGES	41,519.30
		PREVIOUS BALANCE	<u>701.29</u>
		<b>** TOTAL CHARGES</b>	<b><u>42,220.59</u></b>
		PAYMENT	(50,000.00)
		CREDIT BALANCE	(7,779.41)

Date of Reading: 16/03/2007  
Last Payment Date: 21/02/2007

GPC, ASSEMBLY PRESS, ACCRA

Source: Field work, 2007/2008

**Appendix 8: A Water Bill of a Disconnected Consumer in Akatsi, Ghana**

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## Appendix 9: Chemical Symbols and their Names

Na <sup>+</sup>	Sodium ion
K <sup>+</sup>	Potassium ion
Ca <sup>2+</sup>	Calcium ion
Mg <sup>2+</sup>	Magnesium ion
Cl <sup>-</sup>	Chloride
SO <sub>4</sub> <sup>2-</sup>	Sulphate
NO <sub>3</sub> <sup>-</sup>	Nitrate
F <sup>-</sup>	Fluoride
Fe	Iron
Mn <sup>2+</sup>	Manganese ion
Cu	Copper
I <sup>-</sup>	Iodide
Cr	Chromium
Zn	Zinc
Ni	Nickel
Mo	Molybdenum
P	Phosphorus
NH <sub>3</sub> -N	Ammonia Nitrogen
Fe <sup>3+</sup>	Ferric Ion
Fe <sup>2+</sup>	Ferrous ion
pH	Level of acidity
Na	Sodium
K	Potassium
Ca	Calcium
Fe <sup>2</sup>	Ferrous ion
HCO <sub>3</sub>	Bicarbonate
TDS	Total Dissolved solids
Mg	Magnesium

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