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Arthur, Dominic Degraft

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BY
DOMINIC DEGRAFT ARTHUR

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AALBORG UNIVERSITY
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Dominic Degraft Arthur

AALBORG UNIVERSITY
DENMARK

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PhD supervisor:	Associate Professor Steen Fryba Christensen Aalborg University, Denmark
Assistant PhD supervisor:	Dr. Frank Teng-Zeng University For Development Studies, Ghana
PhD committee:	Professor w.s.r. Steffen Bo Jensen (chairman) Aalborg University
	Professor Lisa Ann Richey Roskilde University
	Visiting Professor Timothy M. Shaw University of Massachusetts, Boston
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AUTHOR CV

My name is Dominic Degraft Arthur. I am a lecturer in Political Science at the University For Development Studies, Ghana. My PhD thesis is on decentralization of water and sanitation services delivery in Ghana: Empirical perspectives from rural and peri-urban communities in the Wa Municipality of the Upper West Region. This PhD thesis is sponsored by the Faculty of Humanities, Aalborg University and Faculty of Integrated Development Studies, University For Development Studies, Ghana. The PhD thesis is supervised by Associate Professor Steen Fryba Christensen of the Department of Culture and Global Studies and Dr. Frank Teng-Zeng of the Department of Social, Political and Historical Studies.

My research interests are institutional dimensions in governance and development with special interest in decentralization, administrative reform especially in the public sector, politics of food aid, decentralization of water and sanitation services delivery in rural Africa and distributive politics and distributive goods in Africa.

I had my master's degree in Political Science in 2004 and the Bachelor of Arts degree in Political Science and Sociology in 1999 from the University of Ghana, Legon. Since graduation, I have researched and published extensively in both local and international journals. I am a member of American Political Science Association.

ABSTRACT IN ENGLISH

Water and sanitation services are vital for socio-economic development of every country. However, in Ghana, current scholarship estimates that, there are about 3.5 million urban and 7 million rural dwellers that do not have access to efficient, quality and sustainable water supply services. In addition, there are only 22.9% of the total population who have access to improved sanitation facilities. In reality, in the rural and peri-urban communities in the Wa Municipality of the Upper West Region, there are about 35% and 65% of the population who do not have access to efficient, quality and sustainable water and sanitation services.

This thesis was conducted to investigate the nature and implications of decentralization of water and sanitation services delivery in the selected communities in the Wa Municipality. Data were collected from 354 users of the services, and 50 key informants using in depth interviews, focus group discussion and questionnaire survey. Documentary data were also used to complement the primary data for the analysis. It was found that water and sanitation services delivery in the selected communities in the study area were associated with numerous challenges, thereby causing households to rely on doubtful and traditional sources for water supply services.

In addition, residents also openly defecate in bushes as well as disposing off their refuse in open places in the communities. The study revealed that decentralization of water and sanitation services delivery in the rural and peri-urban communities in the study area could only be successful if the challenges such as ineffective legislative framework, poor institutional procedure for selecting the beneficiary communities, limited management capacity and lack of coordination and collaboration among the external donor agencies are addressed by the stakeholders in the water and sanitation sub-sector.

RESUMÉ PÅ DANSK

Adgang til effektiv og bæredygtig vand- og sanitetsforsyning af høj kvalitet er helt afgørende for den socioøkonomiske udvikling i alle lande. Imidlertid vurderer nyere forskning, at der i Ghana er omkring 3,5 millioner indbyggere i byområder og 7 millioner indbyggere i landområder, som ikke har adgang til effektiv og bæredygtig vand- og sanitetsforsyning af høj kvalitet. Herudover har kun 22,9% af den samlede befolkning adgang til god sanitetsforsyning. Denne afhandlings primære fokus er Wa-kommunen i Upper West-regionen af Ghana.

I landdistrikter og bynære samfund i Wa-kommunen i Upper West-regionen har kun henholdsvis 35% og 65% af befolkningen adgang til effektiv og bæredygtig vand- og sanitetsforsyning. Hensigten med denne afhandling var at undersøge beskaffenheden af og implikationerne forbundet med decentraliseringen af vand- og sanitetsforsyningen i de udvalgte samfund i undersøgelsesområdet.

Data blev indsamlet fra 354 brugere af vand- og sanitetsforsyningen og 50 kerneinformanter ved hjælp af dybdeborende interviews, fokusgruppediskussioner og spørgeskemaundersøgelser. Dokumenterende data blev også brugt som supplement til analysens primære data. Undersøgelserne viste, at serviceydelser inden for vand og sanitet i de udvalgte samfund i undersøgelsen var forbundet med mange udfordringer, hvilket gjorde, at husholdningerne måtte sætte deres lid til tvivlsomme og traditionelle vandforsyningskilder. Ydermere forretter beboerne i disse samfund åbent deres nødtørft i buske og skaffer sig af med deres affald på åbne arealer.

Undersøgelsen viste, at en decentralisering af vand- og sanitetsforsyning i landdistrikter og bynære samfund i undersøgelsesområdet kun vil kunne lykkes, hvis interessenterne inden for vand- og sanitetssektoren tager hånd om udfordringer som ineffektive lovgivningsmæssige rammer, dårlige institutionelle procedurer for udvælgelse af begunstigede samfund, begrænset forvaltningskapacitet og manglende koordinering og samarbejde mellem eksterne donororganisationer.

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DEDICATION

I dedicate this work to my wife Mrs. Benedicta Oweridua-Arthur and my lovely children (Penuela, Jeshuruna, Kofi and Ekow) whose unfailing love and moral support has brought me this far in my academic ladder.

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ABBREVIATIONS

ATR	African Traditional Religion
AfD	Agence Francaise de Development
AfDB	African Development Bank
BHSW	Busa Households Stored Water
CARD	Country Aid for Rural Development
CD	Compact Disk
CHSW	Charia Households Stored Water
CIDA	Canadian International Development Agency
COWAP	Country Water Programme
CPR	Common Pool Resources
CSO	Civil Society Organizations
CRS	Catholic Relief Services
CWSA	Community Water and Sanitation Agency
CWSSD	Community Water and
DACF	District Assemblies Common Fund
DAs	District Assemblies Fund
DANIDA	Danish International Development Agency
DfID	Department of International Development
DWST	District Water and Sanitation Teams
EPA	Environmental Protection Agency
EU	European Union
ECIEL	European Community & International Environmental Law
EIB	European Investment Bank
FGD	Focus Group Discussion

GPRS	Ghana Poverty Reduction Strategy
GWCL	Ghana Water Company Limited
HSD	Hydrological Services Division
IDA	International Development Association of the World Bank
IDA	Irrigation Development Authority
IGF	Internal Generated Fund
ITS	Information Technology Services
IRC	International Red Cross
ISSER	Institute of Statistics, Social and Economic Research
IWRM	Integrated Water Resources Management
KfW	Germany Bank for Integrated Development
KOICA	Korea International Development Agency
KVIP	Kumasi Ventilated Improved Pit
LI	Legislative Instrument
MBO	Municipal Budget Officer
MC	Mineral Commission
MCD	Municipal Coordinating Director
MCE	Municipal Chief Executive
MFEP	Ministry of Finance and Economic Planning
MFO	Municipal Finance Officer
MLGRD	Ministry of Local Government and Rural Development
MMDAs	Metropolitan, Municipal and District Assemblies
MOFA	Ministry of Food and Agriculture
MP	Member of Parliament
MPO	Municipal Planning Officer

MWH	Ministry of Works and Housing
MWRWH	Ministry of Water Resources, Works and Housing
MSD	Metrological Services Division
NCCE	National Centre for Civic Education
NCWSD	National Community Water Services Division
NCWSP	National Community Water Services Programme
NDPC	National Development Planning Commission
NGOs	Non -Governmental Organizations
PNDC	Provisional National Defence Council
PNDCL	Provincial National Defence Council
PNP	People's National Party
PPPH	Public Private Partnership in Hand washing with Soap
PURC	Public Utilities Regulatory Commission
PWD	Public Works Department
RCC	Regional Coordinating Council
SMC	Supreme Military Council
SPSS	Statistical Package for Social Solutions
STWSP	Small Towns Water Supply Project
UNCHS	United Nations Centre for Human Settlement
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNICEF	United Nations International Children Emergency Fund
UNSD	United Nations Statistics Division
URWSP	Upper Region Water and Sanitation Project
USAID	United States Agency for International Development
VRA	Volta River Authority

WATSANS	Water and Sanitation Committees
WCED	World Commission on Environment and Development
WHO	World Health Organization
WRPM	Water Resources Planning and Management
WSDB	Water and Sanitation Development Board
WSSD	Water and Sanitation Services Division
WRC	Water Resources Commission
WRI	Water Research Institute

CHAPTER 1: INTRODUCTION

Throughout the world, access to efficient, quality and sustainable water and sanitation services are essential parts of successful public health programmes (Bain et al., 2014; Freeman et al., 2014). The benefits linked with access to efficient, quality and sustainable water and sufficient sanitation services delivery include diarrhoeal diseases prevention; which are the most important single group of diseases, particularly affecting children, leading to stunted growth and sometimes resulting to death of children under five (WHO and UNICEF, 2014; Valleman et al., 2014; Oza et al., 2015), improved nutrition, financial and economic savings and improved the level of education, specifically for girls (Bartram and Cairncross, 2010; Prüss-Ustün et al., 2014; Wolf et al., 2014).

In spite of the above, access to efficient, quality and sustainable water and sanitation services are still a problem for a large number of people; an estimated total of 1.2 billion people (about one sixth of the global population) do not have access to efficient, quality and sustainable water[1] while another 2 billion (about two–fifths of the global population) have no access to sanitation facilities. These people continue to suffer from diseases resulting from poor water and sanitation services delivery (WHO and UNICEF, 2014; Cumming et al., 2014). Studies have shown that there are marked geographical inequalities, in terms of access, efficiency, quality and sustainability of water supply and sanitation services between countries (WHO and UNICEF, 2014; Pullan et al., 2014; Bain et al., 2014). Further, access to or, more significantly, the practice of safe hygiene is difficult to estimate; because, it is not currently reported at a global level. Nonetheless, the most widespread published analysis to date, in line with the results of a systematic review of literature indicates that there are fewer than 1 in 5 people globally who wash their hands with soap in critical times; before eating and after defecation (Freeman et al., 2014). Although water and sanitation services situation is a global

[1] Safe water is water free of harmful elements and chemical substances (bacteria, toxics, nitrates, heavy metals, hydrocarbons and pesticides) and has no unpleasant taste or odour (Gleick, 2000; WHO/UNICEF, 2014).

challenge, Africa and South Asia face the greatest challenges; in terms of access, efficiency, quality and sustainability of water and sanitation services delivery (WHO and UNICEF, 2014). The following table presents total households' access to water supply and sanitation services by different regions.

Table 1 Total households' access to water supply and sanitation services by different regions

Regions	**Water**	**Sanitation**
Africa	62	40
Asia	82	52
Arab States	83	75.4
Oceania	85	89.6
Europe	94	91
Northern America	99.6	99.7

Source: WHO and UNICEF (2014).

In addition, studies have documented that within developing countries, disparities do exist between urban and rural areas in terms of access to efficient, quality and sustainability of water and sanitation services delivery (WHO and UNICEF, 2014). According to the studies, in 2012, there were 500 million more people without access to quality water in rural areas than urban areas whilst there were about 1 billion more without access to sanitation services in the rural areas than urban areas. The unserved population which constitutes about 25% of the population living in developing countries depends on water from vendors for water supply services. They usually spend an average of 10% to 20% of the household's income on payment of water for household uses. This unserved population in developing countries which relies on water vendors is most likely to consume little water than the standard daily required for good health, as a result of the unsafe and unreliable water sold to them for domestic purposes. Besides, the vast unserved population which often could not afford to buy water from water vendors mostly confront the gruelling task of walking about 5 miles or more to fetch water from lakes, dugouts, wells and rivers for domestic purposes. Waiting in line at the water supply point is also a time-consuming task for women and children

who usually fetch water for domestic uses (WHO and UNICEF, 2014).

In view of the above, a number of studies including Gleick (2000) have stressed the need to shift from using the "supply-driven approach" towards the "demand-driven approach" (which is an innovative and all-encompassing approach) to water and sanitation projects design, implementation and management because improved investments and focus on technology alone, while important, are not adequate to sustain water and sanitation projects in Africa.

Corroborating the above position, multi-sectoral development and community participation approaches were adopted to undertake the International Drinking Water Supply and Sanitation Decade Projects (1980-1990). As to the existing projects, it was concluded that single-sector programmes should be linked directly with other sectors, especially the health promotion programmes within the framework of the primary health care (Fust, 2006). The emphasis on "demand-driven approach" in new projects was focused on community and private sector participation in projects designs, implementation as well as the management of the projects in the communities. The benefits associated with "demand -driven approach" in water and sanitation projects are in three-fold; first, it allows for decentralization of capacity building and empowerment of the residents at the local levels, second, it enhances the level of sustainability of the projects due to an improved beneficiary commitments, and thirdly, it helps to improve an efficient learning strategy for improved projects design, implementation and management in the future (Fust, 2006).

1.1 STATEMENT OF THE PROBLEM

In Ghana, rural water supply and sanitation services delivery was managed and controlled by Ghana Water and Sewerage Corporation, now Ghana Water Company Limited (CWSA, 1997; CWSA, 2008). The goal was to provide universal accessibility to efficient, quality and sustainable water and sanitation services to the citizens, because access to efficient, quality and sustainable water and sanitation services have been considered a human right (United Nations, 2006). However, during the early 1990s, direct state involvement in the provision of water and sanitation services was seen as fragile and economically unsustainable (Batley 2004). The concern led to a shift from the state involvement in the provision of community water and

sanitation services to the District Assemblies, community residents and private sector organizations to design, implement and manage the water and sanitation services in the rural and peri-urban communities. The policy was in line with a neo-liberal philosophy which believes that private sector participation in the water and sanitation sub-sector will result in increased technical responses, improved private capital investment and improvement in services delivery (Hanson, 2008).

In Ghana, WHO/UNICEF (2012) estimates reveal that the country has attained and even exceeded its 2015 national Millennium Development Goals target of 78% for water supply services coverage by 6%. Although, much progress has been made in the water and sanitation sub-sector, in a real sense, this report does reflect the situation on the ground. Current scholarship estimates that there are about 3.5 million urban and 7 million rural dwellers that do not have access to efficient, quality and sustainable water supply services. In addition, there are only 22.9% of the total population of Ghana who have access to improved sanitation facilities -such as public toilet facilities, septic system connection, pour-flush latrine, simple pit latrine, ventilated improved pit latrine, decent dumpsites and hygiene promotion education (Water and Sanitation Sector Assessment, 2015). Besides, within the regions, there are disparities in coverage of sanitation facilities between the rural, peri-urban and urban communities in Ghana. Current estimates revealed that there are about 69% of the rural dwellers and 60% of the urban dwellers who do not have access to efficient, quality and sustainable sanitation facilities (Water and Sanitation Sector Assessment, 2015).

In reality, the rural and peri-urban communities in the Wa Municipality of the Upper West Region of Ghana share similar problems. Report has shown that the Wa Municipality of the Upper West Region of Ghana had experienced numerous yellow fever outbreaks in the previous years; the most serious outbreak witnessed was in 1996 and 1997. Besides, the ten major diseases prevalent in the Wa Municipality of the Upper West Region have been identified as malaria, upper respiratory tract infection, skin diseases, gastrointestinal disorders, anaemia, diarrhoea, pneumonia, intestinal worms, urinary tract infections and acute eye infections (Kendie, 2002). More importantly, out of the ten major diseases, many of them are caused by unsafe use of water supplies and sanitation services. In

addition, water quality test and monitoring of the boreholes which supplied water to the households have not been frequently carried out in the communities in the Wa Municipality (Kendie, 2002).

In a survey carried out by the Ghana Water and Sewerage Corporation in 1992, the Wa Municipality of the Upper West Region recorded the highest score average of eighty percent (80%) of the population without access to sanitation services (Kendie, 2002). Added to this, recent report has shown that there are about 35% and 65% of the population who do not have access to efficient, quality and sustainable water supply and sanitation services respectively (Ghana Statistical Service, 2011). Further, the Wa Municipal Health Services Report (2015) had also documented that 12.6% of sampled households had the incidence of diarrhoea in children less than five years. The report further revealed that 21.9% of sampled households had the incidence of complicated malaria test positive in children less than five years (Wa Municipal Health Services Report, 2015).

In view of the above, it is argued that despite the well-defined goals associated with the decentralization of water and sanitation services delivery, the policy has not led to significant progress to resolve the water-borne and sanitation-related diseases to improve the socio-economic welfare of the people. Based on that, this study is conducted to examine the nature and implications of decentralization of water and sanitation project on access, efficiency, quality and sustainability in the rural and peri-urban communities in the Wa Municipality. In addition, in the face of the complex nature of the problem confronts this thesis, a number of specific research questions have been raised to address the problem of access, efficiency, quality and sustainability of water and sanitation services delivery in the rural and peri-urban communities in the study area. The specific research questions are outlined below;

1. Are there challenges in the decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality?
2. What are the users and service providers' perceptions and experiences on the outcomes of decentralization of water and sanitation project in terms of access, efficiency, quality and sustainability in the rural and peri-urban communities in the Wa Municipality?

3. Is there a relationship between households access to efficient, quality and sustainable water and sanitation services delivery and health of the households in the rural and peri-urban communities in the Wa Municipality?

The focus of this thesis is to address specific challenges of the decentralization of water and sanitation services delivery in the Wa Municipality and also contribute to build on the existing literature on decentralization of water and sanitation services delivery in terms of access, efficiency, quality and sustainability in the Upper West Region of Ghana.

1.2 CENTRAL RESEARCH OBJECTIVE OF THE STUDY

The main objective of this study is to assess the nature and implications of the decentralization of water and sanitation project on access, efficiency, quality and sustainability in the rural and peri-urban communities in the Wa Municipality of the Upper West Region of Ghana. The study, especially the data gathering process, is guided by the following specific research objectives.

1. To assess the challenges of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality;
2. To examine the users and service providers perceptions and experiences on the outcomes of decentralization of water and sanitation project in terms of access, efficiency, quality and sustainability in the rural and peri-urban communities in the Wa Municipality; and
3. To evaluate the relationship between access to efficient, quality and sustainable water and sanitation services delivery and health of the households in the rural and peri-urban communities in the Wa Municipality.

1.3 DELIMITATION OF THE STUDY

This study is focused on decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. Water and sanitation services are used as case studies because water and sanitation services have been considered as one of the essential services for community development in the region. The idea is that, access to efficient, quality and sustainable water and sanitation services is likely to contribute to lower the mortality rate of

children and improving life expectancy. Furthermore, it limits the burden and hardship caused by water -borne and sanitation-related diseases, leading to significant benefits to the households and the society (Fust, 2006). This, in turn, will help to improve the economic and social welfare of the people in the Wa Municipality.

In addition, through discussions with policy makers and actors (stakeholders) in water and sanitation sub-sector in Ghana coupled with the review of current and existing studies on the topic, a three prong criteria were used to identify and select the Wa Municipality as the research setting for this study. They were District Assembly with a high number of low income workers, the District Assembly with poor access to efficient, quality and sustainable water supply and the related sanitation services and finally, the District Assembly with a large number of ethnic communities (CWSA, 2008).

1.4 SIGNIFICANCE OF THE STUDY

Decentralized provision of basic public goods and services (such as water and sanitation services) in recent times has taken the centre stage in the developmental discourse of both developed and developing countries around the globe. In many of these countries, governments have entrusted powers into local government institutions to initiate their own policies in anticipation that the policies will help to ensure improvement in basic public goods and services delivery (Ahmed et al., 2006). Based on that, it is argued that, research on the decentralization of water and sanitation services delivery, with particular emphasis on the rural and peri-urban communities in the Wa Municipality, is not only timely, but significant for the following reasons.

The study will help the government and other allied institutions to develop strategies and policy decisions to help improve access to efficient, quality and sustainable water and sanitation services in the rural and peri-urban communities in the Wa Municipality through the provision of vacuum trucks and the necessary spare parts to repair existing fleets and facilities in the sub-sector.

The study will provide vital information to external donor agencies, Non-Governmental Organizations (NGOs) and other faith-based organizations which are playing a vital role in the water and sanitation sub-sector. This information will enable the stakeholders in the water

and sanitation sub-sector to provide financial and technical assistance to help improve access, efficiency, quality and sustainable water and sanitation services delivery. This, in turn, will help to accelerate the development of the services delivery in rural and peri-urban communities in the Wa Municipality.

In addition, the report of the thesis will help the actors in the water and sanitation sub-sector to define project objectives in order to focus directly on meeting the basic needs of the households in the rural and peri-urban communities in the Wa Municipality. Besides, the report of this thesis will also serve as references for academics and practitioners in the field of water and sanitation worldwide.

1.5 STRUCTURE OF THE THESIS

The thesis is structured into 8 chapters. Chapter 1 is the background to study. It examines the problems of decentralization of water and sanitation services delivery from the global, the African and the Ghanaian perspectives. The chapter further justifies the need for the study. It also discusses the contributions that the study is likely to make to government and its allied institutions and it concludes by outlining the structure of the thesis.

Chapter 2 is devoted to the theoretical and conceptual frameworks underpinning decentralization of water and sanitation services. Included in the review are the institutional theory, the theory of collective action and the conceptual framework. This chapter is critical in the study because the theories serve as building block on which the results of the research are analysed and interpreted. The chapter concludes with a summary.

Chapter 3 presents the conceptual and empirical perspectives on decentralization of water and sanitation services delivery. The chapter focuses on the review of the definitions and dimensions of decentralization, appropriate conditions for successful performance of decentralization and citizen participation in the decentralization programme. Further, the review also focuses on the impact of decentralization on public goods and services delivery. The researcher also reviewed work on centralization of public goods and services delivery, empirical studies on decentralization and public services delivery, the concept of water governance, studies on access to water services as well as households' access to quality and sustainable

sanitation services. The intent of the chapter is to create a synergy among the core variables underpinning the study for easy understanding of decentralization of water and sanitation services delivery. The chapter concludes with a summary.

Chapter 4 focuses on the research design and methodology for the study. This chapter presents the methods employed to collect and analyze the data. The chapter focuses on the research philosophy, study area, methodological approach to the study, study design, target population, sampling, sample size and technique, fieldwork, sources of data (primary and secondary data), data collection techniques and instruments (questionnaire survey, focus group discussion and in-depth interview), pre-test of data collection instruments, procedure for water quality test (detection of bacteriological parameters–Total Coliform, and Escherichia Coliform), ethical considerations, data processing and techniques of analysis, field challenges and how to circumvent the challenges of the study. The chapter concludes with a summary.

Chapter 5 provides an evaluation of the development of water and sanitation services during the colonial period, the post-colonial period and contemporary Ghana. Included in the chapter are the process of the progress of water resources and sanitation services in Ghana, the roles played by the stakeholders involved in water and sanitation projects, historical evolution of water supply services in the Wa Municipality, current trends of water supply services in the Wa Municipality and the appraisal of the sanitation situation in the Wa Municipality. The chapter is relevant to the study in that it forms part of the basis on which the analysis and discussions are anchored. The chapter concludes with a summary.

Chapter 6 centres on the challenges of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. The first section of the chapter focuses on the demographic information of the respondents. The second section of the chapter examines the challenges facing decentralization of water and sanitation services delivery in the rural and peri-urban communities in the study area. The purpose of this chapter is two-fold. First, the chapter helps to shape the researcher's knowledge of the importance of the demographic information of the respondents in the management and use of water supply and sanitation services in the

communities. Second, the chapter also helps to develop a deeper insight into the challenges facing decentralization of water and sanitation services and the effects of the challenges on water and sanitation services delivery in the rural and peri-urban communities in the study area. The chapter concludes with a summary.

Chapter 7 focuses on the examination of the perceptions and experiences of the users and service providers on the outcomes of decentralization of water and sanitation project in terms of access, efficiency, quality and sustainability in the rural and peri- urban communities in the Wa Municipality. It also examined the relation that exists between water and sanitation services on one hand and health of the people on the other. This chapter is critical in this study in that water and sanitation services delivery is a key responsibility of every government in both the developed and developing world because access to efficient, quality and sustainable water and sanitation services delivery are essential component to health promotion. The chapter concludes with a summary.

Chapter 8 is devoted to summary and general conclusion of the study. The chapter focuses on five main issues of concern. First, it presents the general overview of the study; second, it discusses the summary of the key findings. Third, it presents the general conclusion drawn from the key findings of the study. Fourth, it focuses on the contributions of the study to knowledge and the final section is devoted to considerations for further research.

CHAPTER 2: THEORETICAL AND CONCEPTUAL FRAMEWORKS OF DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY

This chapter presents the theoretical and conceptual assumptions underpinning decentralization of water and sanitation services delivery. Included in the review are the institutional theory, the theory of collective action and the conceptual framework. This chapter is critical in the study because the theories serve as building block on which the results of the research will be analysed and interpreted. The chapter concludes with a summary (See section 2.1 for the detailed discussion of the Institutional Theory).

2.1 INSTITUTIONAL THEORY

The Institutional Theory which is associated with Selznick (1957) and Riggs (1971) is commonly used in political and administrative discourse. The review of theory aims at providing a foundation to analyze the institutions and their influence on water and sanitation services delivery. The review is focused on definitions of institutions, types and the relevance of the theory. According to Williams and Vorley (2014), institutions are defined as social structures that have reached a greater level of resilience. Institutions are made up of cultural-cognitive, normative and regulative elements, which influence and mould the interactions and behaviour among actors (Thornton et al., 2012). Broadly defined, institutions are the constructive rules of agreement through which regulative rules are imposed as obligations to shape and coordinate behaviours. This means that institutions can be constraining and superimposing check on some kind of action on people in society (Thornton et al., 2012). Institutions focus on the dynamics of the rules which control the social and institutional structures in respect of the management and control of the resources of society (Meyer and Höllerer, 2014). Institutions mould human interrelations by helping individuals to appreciate what other people are doing, and what these people are capable of doing. Institutions also

allow individuals to identify what they are capable of doing and what they are not capable of doing in society (Kostova, Roth and Dacin, 2008). Institutions are conveyed by diverse forms of carriers including symbolic systems, relational systems, routines and artefacts which provide meaning and stability to the social life of the people in society (Autio and Fu, 2014).

Institutional theory has been applied by many scholars including Greenwood, Raynard, Kodeih, Micelotta and Lounsbury (2011). According to Greenwood et al., (2011), institutions are considered as any social pattern associated with standard ways of interactions in society. Institutions, in general, do not strictly determine what the actors should do, but provide checks and balances, promote cooperation, minimize transactional costs and political uncertainties of a public policy.

Corroborating the above position, Hearne (2004) and Seleth (2006) in their separate studies assert that institutions are made of various segments. These are formal institutions, informal institutions, formal organizations and informal organizations. The application of institutional theory is based on a two-by-two institutional matrix. First, the two columns represent institutions and organizations, whilst the two rows partition them into formal and informal institutions and organizations. These four segments are discussed in turn.

2.1.1 FORMAL INSTITUTIONS

A growing number of studies including Hearne (2004) define formal institutions as the ‘formal rules’ which influence and mould the interaction and behaviour of the actors in the society. These actors are the service providers, users and government. The "formal rules" are designed in the form of laws, policies, regulations, guidelines, codes and standards. They also include international treaties and protocols of which the national government is a signatory. They are formulated and implemented by the state or regional and municipal authorities in the state. The presence or absence of the "formal rules" to shape interaction and behaviour is quite critical to determining the level of orderliness or chaos in the society (Hearne, 2004). Although each of the components of the matrix has a potential influence over other components, formal institutions are the most powerful (Hearne, 2004). One explanation is that formal institutions help to decide on the type

of the informal institutions that can be espoused, tolerated or restrain certain practices in society. This argument is culturally tenable or technically feasible primarily because certain activities of the communities can be restrained by law if the activities can have negative effects on the society. For example, several countries in the developing world have passed formal rules (laws) to proscribe the use of the pan or bucket to carry latrine on heads to the dumpsite, a common practice which has been carried out by several households in many communities for numerous years. This analysis suggests that formal institutions are powerful and therefore have greater influence on the other segments.

2.1.2 INFORMAL INSTITUTIONS

Informal institutions are also found in the segments in institutional matrix. The informal institutions mostly manifest themselves in the form of "unwritten laws" such as traditions and cultural practices. The "unwritten laws" have been practiced by many societies for centuries. Consequently, these practices reflect the deep-seated traditional value system of the people in the society. As a result, the "unwritten laws" can have influence on the formal institutional framework such as constitutions, laws and legal systems of a society (Helmke and Levitsky, 2004; Zilber, 2008).

According to Hall and Thelen (2005), informal institutions are critical to influence the commitments of the various actors towards public policy making and analysis. In a social context, for example, in Ghana, at the community level, people are strictly adhered to the "unwritten laws" such as the norms, beliefs and traditions of the society. Although these "unwritten laws" are not codified rules and regulations of the society, they help to regulate the behaviour of the people in terms of the use and management of public goods and services in the community.

Traditionally, the institutional approach to influence the outcome of the management and control of public goods and services can also be negative or positive. For example, traditional rules, which uphold sound water management and environmental practices such as positive attitudes to personal hygiene, proper waste disposal, willingness to pay for services, commitments to public interests and law enforcement, respect for sanitation professionals are likely to be

positive, whilst the traditional institutions which conflict with best practices are likely to be negative. In this way, it is argued that, these positive practices should be explored and incorporated into the local institutional systems, while the negative practices require the use of tactics such as the provision of intensive education to the stakeholders and dialogue to change them (Hall and Thelen, 2005). This is because institutions have a degree of permanence and are quite stable. Consequently, institutional change can be made possible through a collective action of both the central government and the people of the society (Kingston and Caballero, 2008; Battilana and D'Aunno; 2009).

2.1.3 FORMAL ORGANIZATIONS

Formal organizations consist of groups of individuals engaged in purposive activity (Seleth, 2006). Generally, formal organizations are the main custodians of institutions as well as the wheels on which institutions are run. Key distinct aspects of formal organizations are that they are officially recognized authorities in society. Formal organizations also possess certain entities such as offices, personnel, equipment, budgets and legal personality (Bandaragoda, 2006). In addition, there are also bodies with visible structures and hierarchy of authority. These bodies include the state, ministries, departments and agencies, municipal authorities, private companies, non-governmental organizations (NGOs), and external support agencies. Formal organizations perform their mandatory responsibilities in accordance with the formal rules (formal institutions) of the society. This shows the paradox of institutional-organizational relationships. In this way, although the formal laws are enacted by the formal organizations, these bodies perform their various responsibilities including provision of public goods and services within a framework defined by formal institution. For example, the regulatory policy on the provision of community water and sanitation services is enacted by the Act of Parliament, Act 564 of December 1998. The Act mandates the Government to provide the facilitative role, whilst other actors (stakeholders) provide water and sanitation services to the rural communities. The policy orientation is to allow the Government to share responsibilities on water supply and related sanitation services delivery with private organizations (CWSA, 2008).

2.1.4 INFORMAL ORGANIZATIONS

Informal organizations are groups with some common interests (Zilber, 2008; Seleth, 2006). They are not officially established by the (national or local) government; nonetheless, they are critical actors (stakeholders) in public policy outcomes. This is primarily because they have the potential to facilitate and influence policies which have important public consequences. They are community-based organizations, pressure groups, opinion leaders, traditional leaders, women groups and local religious bodies (Seleth, 2006).

The relevance of the institutional theory to the decentralization of water and sanitation services delivery is quite crucial. First, the theory helps us to understand that in every society, institutions are truly organized patterns of behaviour of individuals and groups which can have a great influence on the outcome of public policies. Second, institutions help to provide stability in a society that would otherwise not exist and thus help to improve the explanatory and predictive capacity of the social sciences (Peters, 1983). Although the institutional theory has made enormous progress, there is still a litany of issues associated with it. One key issue is that, the theory is usually static in nature (Ahmadjian, 2016). The theory of collective action is discussed in turn in the ensuing section.

2.2 THE THEORY OF COLLECTIVE ACTION

The focus on local participation in the provision of public goods and services underscores the significance of collective action. The discussion of the Theory of Collective Action is focused on the work of Mancur Olson (1965). Olson (1965) defines collective action as an act which is taken by members directly or on behalf of the group to benefit the common interest. In his seminal work, Olson (1965) argues that sound and self-interested behaviour do not imply that members in a group are likely to work in their self-interest, unless they are reasonably small or there are some other mechanisms to ensure that members operate in their common interest. Olson (1965) further indicates that the lack of motivations to share common interest in a group results in the free-rider problem. This usually occurs where individual members of a group abstain from making contributions and yet enjoy the advantages arising from group membership.

According to Ostrom (2010), common pool resources are resources where users obtain substantial gains from them, nonetheless, they have a high likelihood of being deleted because it is difficult to set up rules and regulations to manage the resource use, as well as to punish the culprits. He indicates that the smaller size of a group is not a basic condition to help promote collective action in the management and sustainability of a common pool resource. According to him, to guarantee the sustainability of the common pool resource, self-designed institutions are crucial to manage the use of resources by the beneficiaries themselves. The institutions are of either traditional or modern origin (Marquette and Peiffer, 2015). The traditional institutions are generally the body of unwritten rules such as the norms, traditions, values and beliefs that are passed from one generation to another, whilst the modern institutions are usually the body of written laws which are implemented by the state or its agencies (Marquette and Peiffer, 2015).

Similarly, Katz, Lazer, Arrow and Noshir (2004) argued that collective action is a driving force to help manage common resources for the benefit of the members in a group, because it is built on the premise that people form groups and build trusting relationships for themselves in order to exploit the collective ability of the members such as the support, resources, information and knowledge to benefit the group interest. Nonetheless, collective action often does not emerge, due to the absence of incentives of the individuals to act in the group to benefit their common interest (Marquette and Peiffer, 2015). This line of thinking is shared by Booth and Cammack (2013). According to the authors, many of the development crises in the Third World countries are often caused by collective action problems. A collective action problem occurs when individuals in a group fail to perform their roles together to achieve a result that is likely to benefit the group.

To address the complexities linked with collective action, Ostrom (2010) identified a number of conditions that help collective action to operate in a group: First, group boundaries and the Common Pool Resource (CPR) boundary itself must be clearly outlined. The definition of who has what right to the CPR essentially also defines who has to be eliminated from accessing the resource. This is the key step in establishing a framework for regulating how the Common Pool

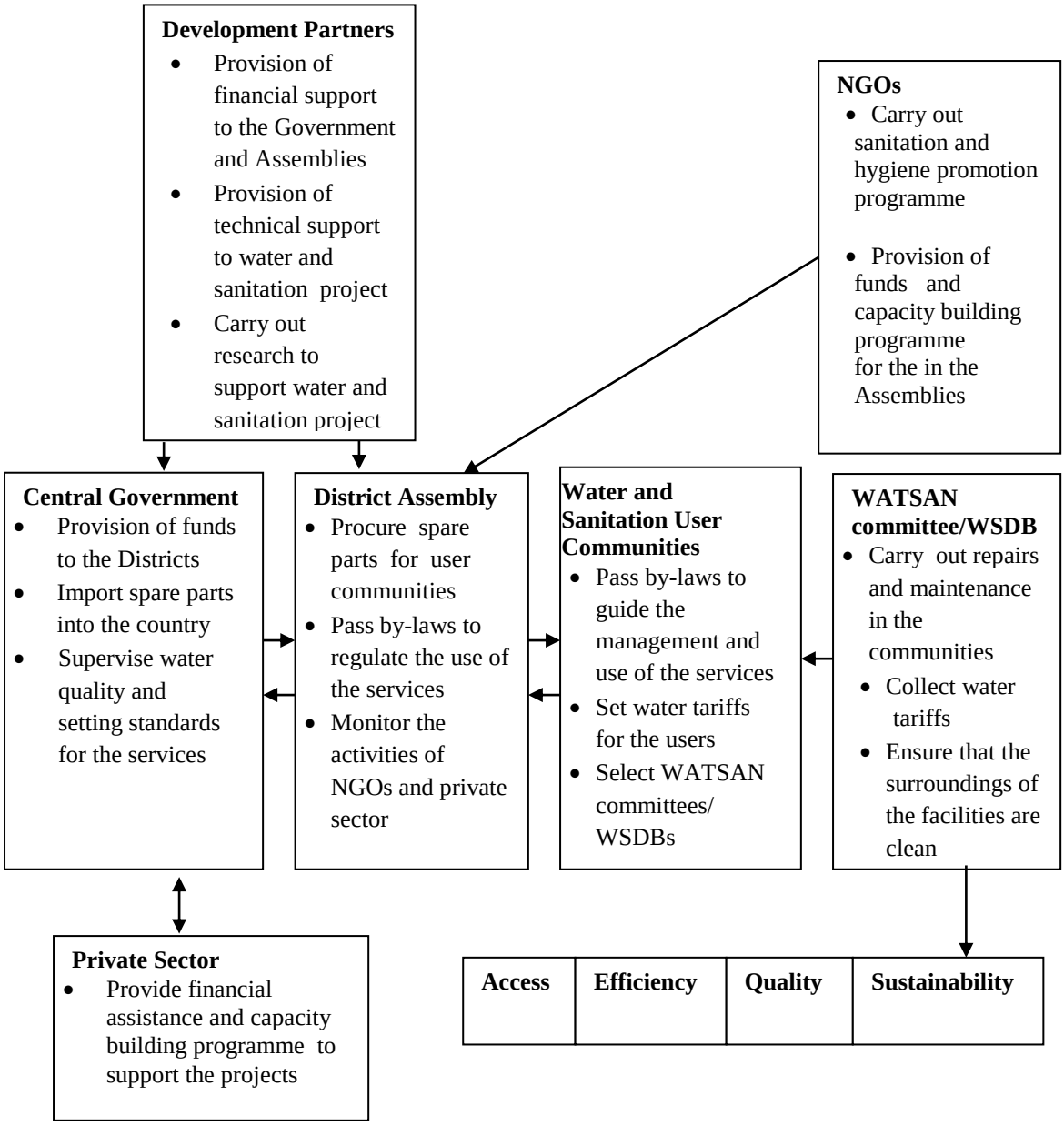
Resource is used and the conditions guiding its usage (Bano, 2012). The next condition is that the rule guiding the usage of common resources has to be well connected to local desires and the prevailing situations. The reason is that how well a resource is treasured by the local residents relies on the use to which the resource is put. In addition, the pace of regeneration of the resource is a function of the local environmental condition, consequently, every regulation of its usage that does not take into account the environmental condition of the people can lead to depletion of resources (Bano, 2012).

Participation by the users of the common resource is also another critical condition to influence collective action. The idea is that, conditions change with time, as a result, if the beneficiaries of a common pool resource have a say in modifying the rules and regulations to satisfy the prevailing conditions of the time, they will be motivated to help in the management of the resource. In addition, when external institutions, mainly the state and its agencies, also allow the local people to formulate their own regulations to manage common resources, they will be motivated to device suitable means to guide the usage of the resource. This, in turn, will help to minimise the "free rider" problems and also help to avert situations where other people attempt to overturn local rules guiding the management of common resource (ibid). The reason is that the regulations have a lot of local content and are influenced by prevailing local conditions as well as indigenous knowledge. Further, collective action is possible where there is a community based system for monitoring users of the common resources. The report of the monitoring is then communicated to the local people so that the needed steps are taken to correct or improve the condition and more importantly the culprits are punished in line with the seriousness of the offence or how frequent the culprits default. In this way, the users of the resource are allowed to voluntarily monitor because they are the ultimate beneficiaries of the resources. According to Ostrom (2010), these conditions influence pattern of collective action, and whether, and how a given condition shapes this pattern depends on the context in which the public resources governance is embedded.

2.3 CONCEPTUAL FRAMEWORK

The conceptual framework provides a synergy among the key actors which are crucial in the achievement of better outcomes in the decentralization of water and sanitation services delivery. In addition to the key actors, it is also anticipated that strategic planning coupled with effective execution; monitoring and evaluation of the policy can also help significantly in achieving better outcomes. The model suggests that effort at improving the access, efficiency, quality and sustainability of the water and sanitation services delivery outcomes requires an effective and efficient working of the institutions and the collective action of the stakeholders. The key elements in the decentralization of water and sanitation services delivery are; the Central Government, District Assembly/CWSA, Development partners/NGOs/Private Sector, Water and Sanitation User communities and WATSAN committee/WSBDs. A significant principle underlying the framework is that decentralization of water and sanitation services delivery go through a process and ultimately produces some outcomes. Figure 1 presents the conceptual framework of decentralization of water and sanitation services delivery.

Figure 1 Conceptual framework of decentralization of water and sanitation services delivery



Source: Owner's construct 2015.

The first stage in the framework is the Central Government. It is represented by the Ministries of Water Resources, Works and Housing, Local Government and Rural Development and Environment and Science. At this stage, the development partners work closely with the Central Government to provide the policy direction towards the implementation of water and sanitation project. They also provide financial and technical support to the districts and also enact policies to regulate the management and sustainability of water and sanitation services. In addition, they ensure that spare parts are available in the country for the water and sanitation project. These services are provided by the Central Government with the support of the development partners to guarantee the safe water supply and sanitation related services in rural and peri-urban communities.

The second stage in the framework is the District Assembly and Community Water and Sanitation Agency. At the district level, MMDAs and CWSA are responsible for the implementation of the project. They are also in charge of the selection of the beneficiary communities for the project. The MMDAs and CWSA also work closely with the development partners, NGOs and the private sector to provide financial and technical support for the implementation of water and sanitation project. They enact by-laws to guide the management, operation and maintenance of water and sanitation services. Besides, they also provide the technical and administrative support to assist water and sanitation project. Furthermore, they are also responsible for the formation of the three-member water team (District Water and Sanitation Team) to manage the administrative structure of the water supply and sanitation services in the communities (CIDA, 2003). They also audit the accounts of the water and sanitation services committees to assess and approve the community water tariffs to be paid by the residents (Government of Ghana, 1993). The logic behind this is to provide effective and efficient conditions for community members and participating stakeholders to facilitate their involvement in the identification, designing, planning, implementation, monitoring and evaluation of water and sanitation projects.

The third stage on the framework is the water and sanitation user communities. Desai (1995) conceptualizes community participation as the direct involvement of community people in every facet of

community development projects. In this context, community participation in water and sanitation project implies the full involvement of the community in the decision making processes at each phase of the project. At this stage, the user communities provide a range of technical assistance such as making land available for water and sanitation projects, payments of five percent (5%) of the initial costs, transfer of ownership to communities, selection of water and sanitation committees to oversee the day-to-day maintenance of project and setting up the mode of collection of water and sanitation tariffs. In addition, the user communities ensure that WATSAN committees/WSDBs manage the tariffs judiciously to take care of maintenance and replacement of the facilities. They also monitor and evaluate the project to ensure that they are well managed and controlled in the communities.

The next stage within the framework is Water and Sanitation Committee/Small Town Water and Sanitation Development Boards (WATSAN committees/WSDBs). At the local level of the MMDAs, Water and Sanitation Committees (WATSANs) are responsible for the management of point services, whereas the Small Town Water and Sanitation Development Boards (WSDBs) are responsible for the management of piped systems (mostly of the small towns). There is usually gender-balance on the water and sanitation committee in the communities. WATSAN committees/WSDBs are tasked to perform the following functions; setting the tariffs and processes of application and enforcement of the tariffs to be paid by the households at the local level; maintenance of the financial records for District Assembly and Community Water and Sanitation Agency for inspection at the district level. They also present reports on the management of water and sanitation related services (regulation of the households' latrine maintenance and hygiene promotion) to the district assembly (CWSA, 2004). The overarching goal of the processes is to enhance access, efficiency, quality and sustainability of the water and sanitation services delivery.

2.4 SUMMARY OF THE CHAPTER

A number of critical issues have emerged from the theories reviewed in the study. According to the Institutional Theory, for any public policy, such as community water and sanitation project to succeed,

there is the need for efficient institutional arrangements. In every societal endeavour, institutions are either established or evolve to satisfy needs and aspirations and also control societal behaviour. As the institutional theory suggests, every society has a potential to experience chaos without institutions to guide and direct the interactions among the needs, resources and aspirations of the people within it.

In addition, the Theory of Collective Action is also used in this study. The theory identifies certain variables of collective action that will explain issues better in this study. According to Meinzen-Dick, Gregorio and McCarthy (2004), collective action is a voluntary action carried out by members to accomplish common interests. It usually operates as stakeholders' participation, where the members carry out their roles independently to assist themselves in a group. In performing their roles, they consider the transaction costs against the gains of the collective action and therefore make a rational decision whether they have to contribute or not. Although there are many areas in which members in the group would benefit if they cooperated, collective action in most cases does not emerge due to the problem of free-riding (Kirsten et al., 2009). Based on the above, it is argued that, for any public policy, such as community water and sanitation programme to succeed, self-designed rules are crucial to manage the use of common pool resource by the beneficiaries themselves devoid of state interference (Marquette & Peiffer, 2015). Added to the above, there is the need for individuals to build trust among themselves. Trust helps to build social ties among members in the group and thus serves as incentives to members in a group to support collective action (Ostrom, 2010).

CHAPTER 3: CONCEPTUAL AND EMPIRICAL PERSPECTIVES ON DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY

This chapter focuses on the review of the definitions and dimensions of decentralization, appropriate conditions for successful performance of decentralization and citizen participation in the decentralization programme. Further, the review also focuses on the impact of decentralization on public goods and services delivery. The researcher also reviewed work on centralization of public goods and services delivery, empirical studies on decentralization and public services delivery, the concept of water governance, studies on access to water services, as well as households' access to quality and sustainable sanitation services. The intent of the chapter is to create a synergy among the core variables underpinning the study for easy understanding of decentralization of water and sanitation services delivery. The chapter concludes with a summary (Section 3.1 focuses on the concept of decentralization).

3.1 THE CONCEPT OF DECENTRALIZATION

The policy of decentralization has become topical in development parlance in recent times. Its use in reference to development and underdevelopment has led gradually to its assumption of specific meanings. Even though different authors define it in diverse ways, the concept is best explained in terms of the form it takes. According to Conyers (1989), decentralization is defined as the transfer of responsibility for planning and decision making from the central government to local governments. The aim is to ensure that the local residents participate in decision making processes within the local level in a more profound way than envisaged in centralized programmes. A growing number of studies including Parker (1995) have indicated that decentralization as a concept has diverse dimensions.These dimensions encompass transfer of power, authority

and responsibility and resources from the central government to the local government for shaping public policy and programmes.

3.2 DIMENSION OF DECENTRALIZATION

There are four dimensions of decentralization. They include political, administrative, fiscal and economic or market. The dimensions of decentralization are discussed in turn in the subsequent sections in this chapter.

3.2.1 POLITICAL DECENTRALIZATION

Political decentralization is a form of decentralization which gives the local citizens and their representatives' ultimate power to participate in decision making processes in the local levels (Boko, 2002). According to Boko (2002), political decentralization is commonly linked with pluralistic politics and representative government, but it can also help democratization by giving populace, or their representatives more control in policy initiation and its execution than the centralized system of administration where the programmes and policies are formulated at the national level. Political decentralization is more likely to be successful when it is conducted within the framework of a multipartite, participatory and grassroots-based system, where the selection of representatives is legitimately based on competitive election.

Another perspective of political decentralization draws on the work of Heller (2001). He conceptualizes political decentralization as a form of relationship that exists between the central government and peripheral institutions; such as partnership and cooperation, rather than the principal-agent or master-servant relationship. According to Heller (2001), political decentralization facilitates the inclusion of the underprivileged people in order to have a voice in the public decision-making process (policy formulation and implementation). The greater participation of local people is more likely to bring broad groups of people into the local politics, which eventually could lead to greater accountability of government at the community level (Heller, 2001). Political decentralization is likely to work effectively if there is political will (where the central government is ready to share exercise of power and authority with the citizens or their

political representatives in the state). In the viewpoints of Heller (2001), political decentralization is one of the key dimensions of decentralization; hence, it should precede the administrative, fiscal and economic (market) decentralization.

3.2.2 ADMINISTRATIVE DECENTRALIZATION

Administrative decentralization is defined as the transfer of responsibility for the planning, financing and management of public responsibilities from the government to the various levels of government in the state (Faletti, 2005). Administrative decentralization can operate effectively if the government provides the enabling environment for the local government staff, the non-governmental organizations, civil society organizations, bilateral and multilateral donors and local residents to administer their roles in their areas of jurisdiction (Faletti, 2005). Administrative decentralization has three (3) main forms namely deconcentration, delegation and devolution.

Deconcentration

Deconcentration is defined as the shifting of the central government responsibilities to the field agencies such as civil servants who carry the routine decision making process and implement the government's directives at regional branches and local government units (Smith, 1985). Under deconcentration, the transfer of the responsibilities to field-level civil servants to perform their roles in the local government units is not dependent on the managerial competency, rather it is based on political considerations (Smith, 1985), because the political interests of the governments are mostly taken into account when the government transfers the authority to the field administrators to perform the functions at the local government units. Field administrators perform political duties for the government, including the maintenance of political stability, the obstruction of opposition political groupings and ensuring that the activities and programmes of the local government units are in line with the government policies and programmes (Smith, 1985). Ghana is one of classical examples of countries which practice deconcentration as a form of decentralization. For example, under Ghana's decentralization programme, the civil servants (field

administrators) are not fully employees of the local government system. The field administrators of the local government system continue to implement policies and programmes in consonance with the directives given to them by the Government although they work at the local government units (Ahwoi, 2010). Deconcentration consists of three main forms. These are functional systems, integrated prefectoral systems and unintegrated prefectoral system (Nelson, 2008).

Delegation

Delegation is conceptualized as the transfer of the government responsibilities to semi-autonomous agencies which are not wholly controlled by the government (Litvack et al., 1998). It is characterized by the principal–agent type of relationship in which government is the principal and local government acts as agents. Delegation allows for more discretion in decision–making by the field officers, even though officials at the local government units continue to be accountable and responsible to the government (Litvack, et al., 1998). It is argued that under delegation, self-interested agents (local government bodies or semiautonomous organizations) carry out its activities and programmes in line with the wishes of the government.

Devolution

In decentralization discourse, devolution focuses on the transfer of responsibility, authority for decision making, financial resources and management from the government to quasi-autonomous units (UNDP, 1999). This is considered an extensive form of decentralization largely because, under devolution, local governments are separate from central government. Thus, they have the authority to; raise their own financial resources, control their own treasury, budget and accounts, choose their own mayors, and hire their own administrative staff which they can fire. In addition, under devolution, local governments have legally recognized geographical boundaries within which they exercise their authority. For instance, they have the authority to take their own decisions including the provision of basic local goods and services for the local citizens. The idea underpinning devolution is the need to strengthening local government institutions by devolving

responsibilities and authority to them. It also serves as a way of reducing active engagement of the government in the provision of public goods and services for the people.

3.2.3 FISCAL DECENTRALIZATION

Fiscal decentralization is best conceived as the shifting of authority in raising revenues and expenditure decisions from the central government to local governments (Oates, 1999). Broadly defined, the term fiscal decentralization refers to the transfer of financial authority from the national level of administration to the local government units to enable the local governments to have the autonomy to raise revenue to fund the social infrastructural services (Oates, 1999).

A similar but more recent study on fiscal decentralization was conducted by Grindle (2007). Grindle (2007) defines fiscal decentralization as the shifting of the powers and authority to mobilize and manage financial resources (that is financial discretionary powers) from the central government to the local governments. Fiscal decentralization can function successfully if the local governments have the administrative staff with the requisite capacity to determine the extent and sources of finance that internalize the costs of public services (Grindle, 2007). However, in most developing countries, local governments do not have the capacity to raise their own financial resources, as a result, they rely on government for financial support. Such dependency erodes the autonomy of the local governments (Grindle, 2007). In sum, fiscal decentralization is supported by many development partners because they believe that, it is a key policy to help promote public accountability in the state (Grindle, 2007).

3.2.4 ECONOMIC OR MARKET DECENTRALIZATION

Economic (market) decentralization is also another dimension of decentralization. It is defined as the reassigning of authority to carry out the service delivery from the government to private institutions (Litvack and Seddon, 1999). The call for economic (market) decentralization is in consonance with the demand of International Financial Institutions, including the World Bank or the International

Monetary Fund to reduce the major government involvement in public goods and services delivery in the state. According to Litvack and Seddon (1999), economic (market) decentralization is considered an evolving trend among governments to look beyond the public sector for the provision and management of public goods and services. Although, government is giving way to increased private sector involvement in the provision and management of public goods and services, it continues to have control and influence over other critical national matters. Also, government has the authority to monitor and supervise decentralized bodies in a number of areas including the strength of organizational capacity, financial resources and strategies they employ to provide public goods and services (Litvack and Seddon, 1999).

Drawing on the above, other scholars including Edigheji (2007) categorized economic (market) decentralization into two types. They are privatization and deregulation. Edigheji (2007) conceptualizes privatization as the process whereby government gives way to the private sector such as non-governmental organizations and voluntary private groups to provide public goods and services. The reason behind privatization is to minimize greater governmental involvement in the provision of public goods and services (Edigheji, 2007). Deregulation is also another type of economic (market) decentralization. Dijk (2006) conceptualizes deregulation as the reduction of legal restrictions by government in order to enhance the private sector engagement in the provision and management of public goods and services. It is also defined as the process of allowing for competition between private actors in the provision and management of public goods and services formerly controlled by government. One distinct feature of the economic (market) decentralization is that it relieves the central government from greater engagement in the performance of its primary responsibilities such as provision and management of public goods and services to the private institutions including private corporations, community groups and civil society organizations (Dijk, 2006).

In summary, on account of the above, it is plausible to argue that the dimensions of decentralization are intertwined and their influence on the decentralization of public goods and services delivery cannot be

evaluated independently. The point is that, under appropriate conditions, all these forms of decentralization can play critical roles to enhance greater efficiency in the provision and management of public goods and services (See section 3.3 for the detailed discussions of the appropriate conditions for successful decentralization).

3.3 APPROPRIATE CONDITIONS FOR SUCCESSFUL DECENTRALIZATION

Decentralization is a multifaceted concept. As a means, it can enhance effectiveness and efficiency of public goods and services delivery. As an end in itself, it can improve the key guiding principles of democratic governance (Cheema and Rondinelli, 1983). However, in practice, it is argued that without sufficient management authority, adequate management capacity, adequate mechanism for accountability, sufficient autonomy of local governments and citizen participation, decentralization could lead to inefficiencies, elite capture, and mismanagement of local resources and loss of citizenry trust in the local government systems. The appropriate conditions for successful operation of decentralization are discussed in detail in subsequent sections.

Sufficient management authority

Authority of the local officials to exercise influence in decentralization is critical to the success of the policy; it can act as a trigger for effective participation, mobilization and utilization of local level resources. As noted by Rondinelli and Ascher (1999), decentralization can be successful if it is implemented in the environment where the central government gives the management authority to the local officials and political leadership. Authority is explained as the right to carry out functions such as regulatory, revenue generation and other activities in connection with local development. These rights are derived from constitutional powers, statutes or administrative guidelines as well as political legitimacy (Rondinelli and Ascher, 1999). Sufficient management authority by local government officials is critical primarily because it empowers

the local officials in the decentralized institutions to carry out their responsibilities to support local level development.

Adequate management capacity

One of the most commonly cited conditions to support the reasons why many governments in Third World countries often fail to implement policies through the local government staff is that they lack the capacity to administer the responsibilities assigned them (Cheema and Rondinelli, 1983). Capacity has multifaceted connotations. This has made it very difficult to get a concise definition for it. However, Shafritz (1986) conceptualizes capacity as the ability, competency and efficiency of the local government officials to design, implement, manage and evaluate plans and programmes assigned them at the local government units. Corroborating the above position, Fiszbein (1997) summarized three strategic factors that influence capacity. These include physical facilities, incentive systems and human capital. Fiszbein (1997) and Rosenbloom (1986) observed that physical facilities are a basic dimension to the effectiveness and efficiency of local governments. It is an important tool for measuring the success of the local government system. Fiszbein (1997) and Rosenbloom (1986) further underscored that local government can have access to high quality personnel, resources and sufficient political authority, but the organization's effectiveness can only be shaped through its access to the physical facilities such as telephony, computers for keeping records, computer systems and transport systems.

Along the same line of reasoning, Work (2002) argues that the quality of human capital is critical to the achievement of organizational goals (Work, 2002). It leads to innovation, increased organisational performance, collective problem solving, organisational learning and adaptability. It also enhances inventiveness and shapes individuals' attitudes towards work and competitive advantage (Wen, 1998; Work, 2002). As a result, local governments' policies should be appropriately designed, efficient capacity programmes should be provided for the local government staff and incentive schemes (include rules about promotion and conditions of services) need to be provided to the civil servants (Work, 2002).

Accountability issues

Accountability is a complex concept. It can be defined as either the nature of the political process or the outcomes induced. It is a driving force that influences the stakeholders in public institutions to be answerable to their subjects in order to help to ensure effectiveness of public goods and services delivery (Paul, 1995:5). In Prezeworski, Stokes and Mann's (1999) study *Democracy, Accountability, and Representation*, accountability is conceptualized as follows: 'Governments are 'accountable' if citizens can appreciate the representative governments and can sanction them appropriately, retaining in office those who perform well and ousting from office those who do not'. One critical question is, to whom is the public servant accountable? According to Prezeworski et al., (1999) in all political regimes, public servants are expected to be accountable to the citizens. However, the level of accountability differs in practice based on the type of relationship that exists between the political system and the public servants. For instance, in the democratic system, there are a number of means through which public service performance can be monitored and political pressure can be applied. In non-democracies, consumer groups, chambers of commerce and religious bodies can put pressure on public officials to respond to them directly or indirectly.

Conventionally, accountability refers to the answerability of one's actions or behaviour. It however entails the development of objective standards and the evaluation of how work is carried out in an organization, as well as the means by which organizations and their leaders are held responsible for their actions in the use of public resources and authority (Olowu, 1999). In line with this definition, Olowu (1999) categorized three main elements underpinning accountability as follows: clear definition of responsibility, reporting modality and reward system. In addition, Olowu (1999) identified a number of advantages of accountability as following: First, accountability helps the citizens to acquaint themselves with the decisions that are made by elected politicians and bureaucrats to address local needs, preferences and aspirations; second, it also acts as a trigger to enable the citizens familiarize themselves with the financial information of the local governments-financial reporting both to the local users and to independent audit

agencies and third, it helps to provide citizens with realistic set of information about what government can do and cannot do (Olowu, 1999).

Focusing on accountability, a study by Bird (1994) also categorized accountability into two forms. These are vertical and horizontal accountability. Vertical accountability denotes a form of accountability where the central government is directly answerable to the citizens. This form of accountability helps citizens to acquaint themselves with government policies and actions, whereas horizontal accountability occurs when the citizens indirectly hold the government accountable through the representatives. In practice, horizontal accountability can be effective if the government is willing to support the representatives of the citizens to carry out their roles and responsibilities assigned them (Bird, 1994).

Corroborating the above position, Ahmed, Devarajan, Khemani and Shah (2006) also identified two relationships of accountability that exist between the communities and public services providers as follows: First, the service users are expected to hold policy elites accountable for assigning funds towards the provision of public goods and services. Second, policy elites are also supposed to hold the service providers accountable for the public goods and services being delivered to them. According to Ahmed et al., (2006), accountability is crucial in decentralization because it helps to ensure efficient provision and management of public goods and services delivery in a state.

Sufficient autonomy of local government

Sufficient autonomy of local government is critical in decentralization. This includes the autonomy in determining the quantity and quality of public goods and services and sources of financing local developmental projects (Bill, 2008). According to Bill (2008), autonomy helps local government to enjoy a level of flexibility and independence to react to more pressing issues of their environment without external control. It is when this is done that devolution as a form of decentralization becomes real in the state (Bill, 2008).

3.4 CITIZEN PARTICIPATION

Participation is a broad concept. This means that *participation* can be defined in diverse ways. According to Gyimah-Boadi (2001), participation refers to the involvement of the individuals and the private sector in the decision-making, monitoring, review and termination of policies and decisions that affect their lives. In his view, participation is considered as an essential tool to help promote governmental responsiveness, which in turn fosters trust, legitimacy and commitment of citizens to sustained development.

Gaventa (2007) in a study *Exploring Citizenship, Participation and Accountability* defines participation as the involvement of citizens in public activities and programmes. Gaventa (2007) classifies participation into two forms namely; direct participation (occurs where citizens are actively engaged in the decision making processes affecting them), and indirect participation (where citizens express their preferences through their elected and other representatives). In the viewpoint of Gaventa (2007), although participation gives meaning to citizens' empowerment, especially the less prosperous local communities and vulnerable groups who were hitherto denied their involvement in the activities and programmes of the local governments, participation cannot be considered as a tool to resolve poor local government performance, largely because many of the less prosperous local communities and vulnerable groups do not have the ability to engage in total participation of the policies and activities of the local government in their area of jurisdiction.

Other writers, including Nelson and Wright (1995) conceptualize participation as a change process and proactive learning by doing exercise, with people at the centre of the development process. They argue that participation moves beyond representation in electoral processes. In this way, participation theorists see participation as an ideology and a popular tool which helps to improve the existing capacities of people. It also improves social capital (trust, norms, networks, communication, bridging and bonding), which helps to contribute to enhanced involvement of the citizens in the development process that shapes their own future.

In a similar study, Serageldin and Wahba (2000) and Brodie et al., (2009) also contend that citizen participation is seen as a way of

increasing the level of involvement at the local government units and central government agencies. In the viewpoint of Serageldin and Wahba (2000) and Brodie et al., (2009), participation includes the engagement of members of the public in agenda setting and policy making processes. Going by Serageldin and Wahba (2000) and Brodie et al's (2009) views, it can be argued that this form of institutional engagement is key to ensuring effective and efficient facilitation of information flow between government and the local people.

Fiszbein's (1997) study *The Emergence of Local Capacity: Lessons from Colombia,* also reported that citizen participation is important in local government systems. The idea is that participation encourages grassroots involvement and increases the voice of the citizens in local government units. It also helps to facilitate local engagement in the implementation of the planning process, thereby increasing citizens' awareness of the nature of the local government programmes. This distinctive feature associated with participation is attributed to the creation of functionally independent local governments that are physically close to the local citizens (Fiszbein, 1997).

Consistent with the preceding viewpoints is that of Ostrom (1990). In his opinion, the most frequently cited reasons contributing to the strong support for citizen participation is that the traditional top down management systems are perceived as inducing inertia, rent seeking and corrupt behaviour. These challenges which are linked to traditional top down management systems often times create room for local elites to capture power due to the exclusion of the poor and vulnerable from participating in local level policies and programmes. As echoed by Ostrom (1990), citizen participation in the local government policies and programmes helps to address any gap that may exist between the local governments' officials and the local people as a result of their different perceptions of community needs.

In relation to the above, Michener's (1998) study, *The Participatory Approach: Contradiction and Co-optation in Burkina Faso,* opines that participation is key in decentralization. Michener (1998) categorizes participation into two sub-types namely; the planner-centered approach and the people-centered approach. The planner-centered approach represents the tapping of the indigenous knowledge and human resources to support the implementation of

local activities and programmes. This approach is anti-participatory as it relegates all characteristics including community values and practices to an inferior status. Such unfairness can and should be resolved by adopting the new participatory approach which therefore seeks to involve the community people as the key element in development programmes. The dynamic surrounding the argument is that, in development contexts, the underprivileged and vulnerable people are expected to define their development programmes according to their needs and wants (Michener, 1998).

In addition, Michener (1998:15) emphasizes that people-centered participation approach is linked to the concept of 'deep' participation; where the citizens are ensured their full involvement at each stage of the project development. What is crucial is that, this form of citizens' participation is seen as a way of fostering citizens' emancipation in order to empower them 'to do their own analysis, to take command, as well as to develop the confidence to make their own decisions'. Going by Michener's (1998) perspective, it is plausible to argue that under this form of participatory approach, the community people are fully involved in the planning, implementation, monitoring and evaluation of the local projects. In this case, the development professionals (mostly the elites) cease to be experts, but rather become learners. In this way, participation is seen as a means of creating opportunities for the local people to contribute towards development projects meant for them.

Azfar, Kähkönen, Lanyi, Meagher and Rutherford (1999) also provide a more detailed discussion on participation which provides a similar explanation to that made by the previous contributors. Azfar et al., (1999) define participation as a process through which the vulnerable groups are involved in decision- making that affects them. There are two main means available for users to participate and express their needs and preferences from the government. These are the "voice users" and the "exit". Azfar et al., (1999) claim that the extent to which" voice users" can influence development programmes in their communities depends on decision making processes that citizens use to express their views. This occurs through elections, surveys, town meetings (public hearings), direct community involvement, demonstrations, participatory planning, budgeting, monitoring and evaluation. Further, Azfar et al., (1999) contend that

participation through the exit means also occurs when the citizens are free to exit from the use of public goods and services. It can also occur by switching to another jurisdiction for public goods and services if the services provided in their jurisdiction do not benefit them. In the viewpoints of the scholars, this conventional wisdom may be true for developed countries, but it cannot be the case in developing countries. The logic is that, in developing countries, local preferences may not readily reflect in local budget outcomes as happen in developed countries. In this way, the process of moving from one jurisdiction to another does not make the citizens better off in terms of access to better public goods and services.

3.5 THE IMPACT OF DECENTRALIZATION ON PUBLIC GOODS AND SERVICES DELIVERY

This section examines the various perspectives on the impact of decentralization on public goods and services delivery. Detailed discussions of these perspectives are presented in the subsequent sections.

3.5.1 CLASSICAL VIEW

The classical view on decentralization of public goods and services delivery emerged through the works of Charles Tiebout (1956) and Wallace Oates (1972; 1999). According to Tiebout (1956), decentralization increases diversity. As a result, citizens living in a particular local government's jurisdiction have greater chance to access basic local public goods and services at their own interest due to a high level of individual mobility from one jurisdiction to another or to the same jurisdiction.

Oates' (1972; 1999) also makes an interesting point to support the argument of the preceding scholar. Subscribing to the same view, Oates' (1972; 1999) argues that decentralization promotes allocative efficiency of the provision and management of basic public goods and services than the central government. The logic is that decentralization focuses on reaching out to the vulnerable and underprivileged who are in the deprived areas. Moreover, decentralization promotes productive efficiency because the local

governments are closer to the doorstep of the rural people than the central government, thus, the local governments are able to provide efficient public goods and services that actually meet the needs and preferences of the local people. In addition, the local people also have better knowledge of local costs of producing the public goods and services. Consequently, local government bodies are more accountable to the local people. For this reason, Oates' (1972; 1999) believes that local governments have the advantage over central government in terms of the provision of basic public goods and services in a state.

Corroborating the above position, Kendall (1991) claims that in developing countries, local government is seen as the critical actor with the requisite capacity to provide education as well as the provision of basic public goods and services. The critical point of his argument is that, central government does not live close to the local communities. As a result, it is not possible for the central government to get access to sufficient information and knowledge about the needs, aspirations and demands of the rural people in the communities as the local governments do. For this reason, Kendall (1991) believes that local government needs support and encouragement, including the enabling environment, created by the central government to motivate the local government in order to play its roles and responsibilities such as the provision of the basic local public goods and services to the people in its area of jurisdictions.

Similarly, Thieben (2001) and Lin and Liu (1999) also emphasize that decentralization has a strong relationship with basic public goods and services delivery. Thieben (2001) and Lin and Liu (1999) further contend that the relationship between decentralization and basic public goods and services delivery is based on two reasons: Firstly, the local governments are closer to their constituents, therefore, they have superior knowledge of the preferences and demands of local residents than central governments do. Secondly, local governments in developing countries do not face political constraints, especially in trying to provide equal basic public goods and services for the citizens as in the case of central governments. According to Thieben (2001) and Lin and Liu (1999), the absence of these constraints and challenges make local government efficient in

relation to the provision of basic public goods and services to the vulnerable and underprivileged in a state.

In a related study, Maria and Ashley (2014) also argue that decentralization is a panacea to challenges of social infrastructural delivery in the developing countries. According to them, local governments in developing countries have a strong bias towards micro level infrastructure projects because these projects are less costly than large–scale programmes often carried out by central government. As a result, the local government institutions are able to provide the projects with the support of the local train people at a faster rate with high level of performance and general satisfaction to meet the desire and interest of the citizens.

To corroborate the above, Rondinelli (2005) argues that decentralization has taken increasingly more diverse meanings, objectives and forms. In his view, decentralization is seen as a way of opening democratic governance to the citizens. It also helps to bring the breakaway province to the national government or a means of influencing national policies that affects local people. In addition, under decentralization, international agencies or NGOs are brought to the doorstep of the local people to support local empowerment as a means of promoting "democracy" or a way of reinforcing the role of their local organizations that are concerned with community development.

Kim (2009) has generally advanced our knowledge on the virtues of decentralization. Kim (2009) contends that decentralization helps to facilitate the flow of information from people at the local units to the national government. In his view, this institutional arrangement makes the local governments more responsive to the needs of the local, whilst at the same time the local people also develop sense of ownership over development polices of the local governments. According to the scholars, this therefore helps the ordinary people to contribute their quota towards local level development.

Further, Martinez-Vazquez and McNab (2001) have also made an important contribution to support the decentralization debate. According to the scholars, decentralization system holds a great promise for the developing countries, largely because under decentralization, local government plays a very critical role to help improve the citizens' welfare gains than the national government.

As echoed by the scholars, the increase in individual's welfare gain from decentralization is based on the ability of the local government to provide larger quantity and better quality of goods and services within a particular budget and relatively lower cost. This is because; the relationship between economic decentralization and growth is more or less intuitive because public output is measured on the basis of the level of expenditure without giving due importance to the level of government (central or local) which finances the public goods and services. In view of this, if local governments produce more public goods and services than the national governments do with the same level of expenditure, there will be enough public goods and services at the local level for the people, leading to an improved welfare gain.

3.5.2 CRITICAL VIEW

The discussions on the rationalizations of decentralization have been vigorously contested, even in the developed countries of the world. Prud'homme (1995), with strong concurrence of a whole school of thought on the subject, claimed that decentralization system widens the level of disparities between jurisdictions in a country because decentralization system provides different levels of treatment to citizens in the same country. For instance, Prud'homme (1995) argues that under decentralization, districts with higher per capita income have the opportunity to get higher access to the provision of basic local public goods and services than districts with low per capita income, although, the residents of the districts with the higher per capita income are not likely to pay higher taxes for the provision of the basic local goods and services by the local governments. He believes that this situation undermines efficiency in tax mobilization for local level development. It also contributes to an increased level of corruption at the local level.

In a related study, Kwon (2002) criticised the classical views that decentralization is a virtue that improves productive efficiency in public goods and services delivery. He asserts that this classical view may remain true for developed countries, but this may not exactly be the case in the context of developing countries, primarily because developing countries do not meet the conditions associated with the fiscal federalism theory of decentralization. He observed that in most

developing countries, local voter preferences may not as easily reflect in the local budget statement as in the case of advanced countries. Further, local governments in developing countries have poor administrative capability to mobilize and manage their own financial resources. This, in turn, leads to lack of autonomy in financial decision making. The absence of local autonomy in decision making capacity in determining the quantity and quality of public goods and services provided, as well as the weak sources of finance for the public goods and services delivery indicates that decentralization of local public goods and services delivery is not likely to lead to increased productive efficiency (Kwon, 2002).

Recent studies, including Faguet (2000; 2012) reveal that Tiebout's (1956) argument that decentralization helps diverse population to move freely from one jurisdiction to another or within the same jurisdiction to access basic local public goods and services at their own interest is overstated. Faguet (2000; 2012) argues that decentralization does not necessarily lead to free mobility of the individual from one jurisdiction to another jurisdiction or within the same jurisdiction to access public goods and services. In his opinion, in a highly mobile country such as the United States, during any given electoral cycle, the population does not change; it is the government and politicians that change. Moreover, in many of the developing countries, especially poor countries, many of the basic public goods and services are mainly delivered based on community and site specific needs. Hence, residents in rural communities know the community residents. Consequently, they can differentiate community residents from non-residents. For this reason, non-residents can be denied access to the use of the local public goods and services. This viewpoint contrasts starkly with the explanations provided by Tiebout (1956).

In a study titled *Some Politically Incorrect Remarks on Decentralization and Public Finance*, Tanzi (2000) also stresses that local governments in many developing countries face a number of challenges when performing their responsibilities. In his view, in many developing countries, most governments separate the expenditure administration from the financing functions of local governments. The idea is that the central governments would want to continue to support the local governments with financial resources to

finance the public goods and services delivery. This, according to Tanzi (2000), is likely to make strong local governments become more dependent on the central government for financial resources. In his opinion, this institutional arrangement, which has been the trend in most of developing countries, has likelihood to lead the local governments into troubles and therefore make them inefficient and appendages to central governments. This, therefore, makes the idea of decentralization worthless in developing countries (Tanzi, 2000).

Other scholars including Dethier (2000) also doubt whether decentralization can enhance accountability in the provision of public goods and services. In his opinion, one distinctive feature associated with decentralization is that the policy is linked to local elite' capture, which is one of the key constraints that affects the efficient allocation of resources for local development. In Dethier's (2000) view, local elites capture occurs when the local bureaucrats exercise great influence over the policies and programmes of the local governments for their personal interest. Dethier (2000) argues that under the pretext of decentralization, the local elites in local governments often times divert local public goods and services and resell to the non-poor residents in the black market for their personal gain, or at other instances distribute local public goods and services to clients in powerful socio-economic communities due to political expediency, to the detriment of poor and vulnerable groups in the society. This phenomenon leads to the difficulty of accessing basic public goods and services in local units by the vulnerable groups in the society. This, consequently, leads to the widening of the poverty gap in the society.

Similarly, a study by Shah and Thompson (2004) also indicate that the arguments by the classical scholars that decentralization is linked to a number of positive virtues such as efficiency, responsiveness, accountability and participation, especially in developing countries have been ambiguous. They argue that decentralization, like any institutional reforms, could operate successfully if the central government is committed to creating the needed enabling conditions to support the system. The logic is that the provision of enabling environment is likely to help the local government obtain capital financing, local skills and knowledge in the areas of technical, administrative and human capacities to enhance local public goods

and services delivery. Corroborating the above position, a similar and more recent study carried out by Bardhan and Mookherjee (2006) also indicate that the argument made by classical scholars that decentralization is a panacea to governance and development challenges of countries, especially developing countries, is quite puzzling. According to them, local governments in developing countries lack accountability systems, thus, issues of misappropriation of funds and misuse of authority are common features associated with them (Bardhan and Mookherjee, 2006). These problems are exacerbated by the lack of local democratic practices due to unequal political participation and competition, absence of information, incidence of high level of illiteracy, absence of the central government's ability to perform regular oversight responsibilities on the work of the local governments.

In addition, Laryea-Adjei's work (2007) titled *Decentralization plus Pluralism for Basic Services Provision: Water and Sanitation in Ghana* has also advanced our knowledge on the shortfalls of decentralization programme in the Third World countries. As echoed by Laryea-Adjei (2007), central governments in most of the Third World countries pay critical attention to fiscal and political decentralization rather than the administrative decentralization, or design the decentralization programme in such a way that the local service providers continue to remain the employees of the central governments. In his view, this practice leads to the loss of local autonomy by the local governments to hire the competent staff to carry out the day-to- day activities at the local areas of its jurisdiction.

3.6 CENTRALIZATION OF PUBLIC GOODS AND SERVICES DELIVERY

This section focuses on the review of literature on centralization of public goods and services delivery. This is important because it forms part of the basis upon which the analysis of the study is anchored. Detailed discussions on the centralization of public goods and services delivery are presented as follows:

The policy of centralization has been defined by different scholars. Besley and Coate (2003) conceptualized centralization as the process by which the policies and programmes of the state are centered at the

national level. According to the scholars, centralization system seeks to provide an equal level of treatment to citizens in the same country (Besley and Coate, 2003).

Writing on *Centralization and Decentralization in Administration and Politics: Assessing Territorial Dimensions of Authority and Power*, Hutchcroft (2001) argues that centralized provision of public goods and service is more efficient than decentralization. This is because in both the developed and developing countries, the central government has greater access to hire competent staffs that have high capacities to perform functions effectively in the state. Thus, if such functions are administratively decentralized, there will be inefficiencies in the way the goods and services are delivered due to incompetent staff in the local government units.

Similarly, Alonso, Dessein and Matouschek (2008) have also generally advanced our knowledge on the benefits linked with centralized water and sanitation service delivery. In their opinion, in heterogeneous societies, the central government has the potential to provide basic public goods and services better than the local government. One explanation is that in heterogeneous societies, with territorially-concentrated minorities, the demand of the local residents and the potential tax base for the delivery of the basic public goods and services are high. In view of this, it becomes very difficult for local government to effectively deliver the basic public goods and services for the local people in such diverse societies, because local government does not have enough resources due to poor management capacity to mobilize the internally generated funds.

Corroborating the above, Cohen and Peterson (1997) has also argued in favour of the centralized provision of public goods and services in a state. According to the scholars, in the developing countries, in most instances, the politicians are not willing to relinquish power or share power with the local government to manage the affairs of the people. Further, in instances where the responsibilities are truly delegated to the local government, there is seldom a corresponding transfer of funds to the local government. Besides, the local government also faces a problem of mobilizing the internally revenue primarily because local government do not have the competent staff to mobilize the resources. Taken together, these conditions tend to affect the local

government performance, thereby making the local government incapable to deliver efficient public goods and services to the people.
In the same line of reasoning, Sharma (2005) posits that centralized system is very important to promote efficient delivery of public goods and services at lower costs than the decentralized system. According to him, under centralization, the localities are vertically integrated; that is, they constitute an integral part of the legal structure of the central government. Therefore, the localities are better placed to enjoy equitable distribution of public goods and services at lower costs, rather than the overhead costs being incurred to deliver goods and services to the individual districts. In his opinion, this is possible in that under centralization policy, the central government is expected to ensure that basic public goods and services are allocated evenly to citizens in line with the general policies of the state.
Further, other scholars including Shah and Thompson (2004) have also argued that the importance of the centralized public goods and services delivery cannot be underestimated in a state. In the viewpoints of the scholars, in the developing countries, local government faces a lot of challenges in attracting high qualified staff; as a result, local government is incapable to deliver certain goods and services such as defence and foreign affairs. For this reason, central government is seen as a critical actor with the capacity to deliver such public goods and services to the people largely because these public goods and services (defence and foreign Affairs) require high levels of specialization to deliver them in a state.

3.7 EMPIRICAL STUDIES ON DECENTRALIZATION

This section focuses on empirical studies on decentralization of public goods and services delivery. The empirical studies are critical in this study because empirical studies help the researcher to appreciate the contextual issues of decentralization across Third World countries and other parts of the world. In addition, empirical studies also help the researcher to understand the processes adopted by different countries to realize the gains or otherwise associated with the decentralization of public goods and services within the context of those countries. Finally, empirical studies assist the researcher to design the research instrument for the study.

Decentralization is a popular concept in the development discourse. Worldwide, the euphoria surrounding decentralization of public goods and services delivery has gained currency in recent times. In his study on *Decentralization and Popular Democracy: Governance from below in Bolivia*, Faguet (2000) reveals that since 1994, decentralization in Bolivia had led to an increase in the share of national tax revenue allocated to municipalities; an improvement in administrative capacity of the municipalities; and improved local social infrastructural services including education, water and sanitation to three-quarters in all the municipalities to meet the local needs and demands. According to the empirical study, this had led to the reduction of wastage and corruption, quick implementation of social and economic development policies and creation of rational and efficient management practices at the municipal level. This empirical study reinforced the importance attached to decentralization by development theorists, economists and political scientists in many Third World countries. On a more positive note, Faguet's (2000) evidence seems quite plausible, in the sense that the study provided detailed empirical data to support why decentralization is an integral part of development. However, the study failed to address issues such as cost-effectiveness of the programmes, and the extent of elites' capture of local government programmes. In addition, the analysis was based on the terms and levels of public spending rather than outcome variables such as the size of the school enrolments, the level of school performance, and access to sufficient, quality and sustainable water and sanitation services.

An empirical study on decentralization by Alderman (1998) also generally focused on the strengths of decentralization. In his study, Alderman (1998) argues that decentralization has led to improvement in social assistance programme in Albania. As echoed by Alderman (1998), the targeted social assistance programme (*Ndihme Ekonomika*) which is embedded in decentralization in 1995 had produced favourable outcomes in Albania. This is because local government institutions made efficient use of the locally generated resources to help improve the management and sustainability of the social assistance programme.

Writing on *Diversity and Regional Inequalities: Assessing the Outcomes of the Spanish System of Health Care Services,* Costa-i-

Front, Lopez-Casanovas and Planas (2005) argue that decentralization is an effective policy to help maximize social welfare in both the developed and developing countries. According to Cost-i-Front et al., (2005), empirical studies on decentralization on health system in Spain reported a strong relationship between decentralization and health service delivery. This is based on the fact that the local people contributed their quota such as regular payment of the fees coupled with the high demand for the social intervention programme. In the viewpoints of the scholars, this had led to more improvement in health reforms at all the regional levels in Spain.

Going forward, Isham and Kähkönen (1999) have also pointed out that decentralization improves demand-responsiveness in relation to the provision of basic public goods and services. In their study on *Institutional Determinants of Community-based Water Services,* Isham and Kähkönen's (1999) claim that community based water supply under the decentralization system in Central Java revealed that the programme had proven to be successful because the services match the beneficiaries demand and desires. The success of the programme was based on the community residents' direct involvement and the willingness to pay for higher tariffs for improvement of water supply services for the community residents.

A related study conducted in Colombia to measure the allocative efficiency of the local government also revealed interesting outcomes (World Bank, 2005). This study was conducted in sixteen municipalities in Colombia to find out the local peoples' views and the preferences of the local people for public goods and services delivered by either the central or local government. It was established in the study that the provision of financial resources, logistics and technical know-how by local governments were more reliable and in line with community desires and needs than services which were provided by the central government because the local governments are closer to the local populace, as a result, they know the peoples' needs and desires at the local level (World Bank, 2000; 2003).

Other writers including Kaufmann and Aart (2002) also conducted an assessment of the impact of decentralization on access to public goods and services delivery in Bolivia. The study used survey technique to collect data from the field. The findings from the study indicated that both the municipal and central service providers in

Bolivia had failed to provide sufficient, quality and sustainable services to the people. However, in terms of access to the people, the results showed that the municipal officials were closer and accessible to the people than the central government officials. Although, the Municipal Assemblies failed in terms of the provision of public goods and services to the people, the positive outcome of the programme such as granting access to the local people showed that the local agencies had the capacity to improve the provision of public goods and services to the people.

Ahmad, Shah, Devarajan and Khemani's (2005) study on *Indian Development: Selected Regional Perspectives* also provided empirical study on decentralization and the demand responsiveness of the local people. Ahmad et al., (2005) observe that decentralization programme had created disparities in the provision of quality of education systems in India. In their opinion, under the banner of decentralization, elite' communities with few privileged individuals had access to higher quality education system than underprivileged communities. This situation had created the prevailing socio-economic disparities between vulnerable and non-vulnerable groups in India, which had led to the widening of the level of poverty gap between the vulnerable and non-vulnerable groups in India.

Lessons learnt from empirical review of literature

Two key lessons have been learnt from the empirical review of literature. First, not much has been done in Africa on decentralization of water and sanitation services delivery. Most of the studies were conducted in Asia and Latin America. Second, few of the studies on decentralization of water and sanitation services delivery did not dwell much on the households' survey data for the analysis. In the opinion of the researcher, an empirical study conducted based on the households survey data will help to analyse the effects of decentralization of water and sanitation services delivery on diverse socioeconomic groups of the households. These observations have necessitated the present study. (See section 3.8 for the detailed discussion of the concept of water governance).

3.8 THE CONCEPT OF WATER GOVERNANCE

Water governance emerged in the 1990s as a concept to manage water resources (Benson, Gain and Rouillard, 2015). The concept is based on the principle of increased stakeholder participation in designing water systems (Benson et al., 2015). It is defined as a policy which permits governmental institutions to jointly deal with water management issues with other stakeholders and civil society organizations, rather than tasking government institutions only to perform the role in a top down manner (Walker, 2014). The concept of water governance also implies a shift from rigid forms of decision-making to more interactive strategies in water supply services management (Hill, 2013).

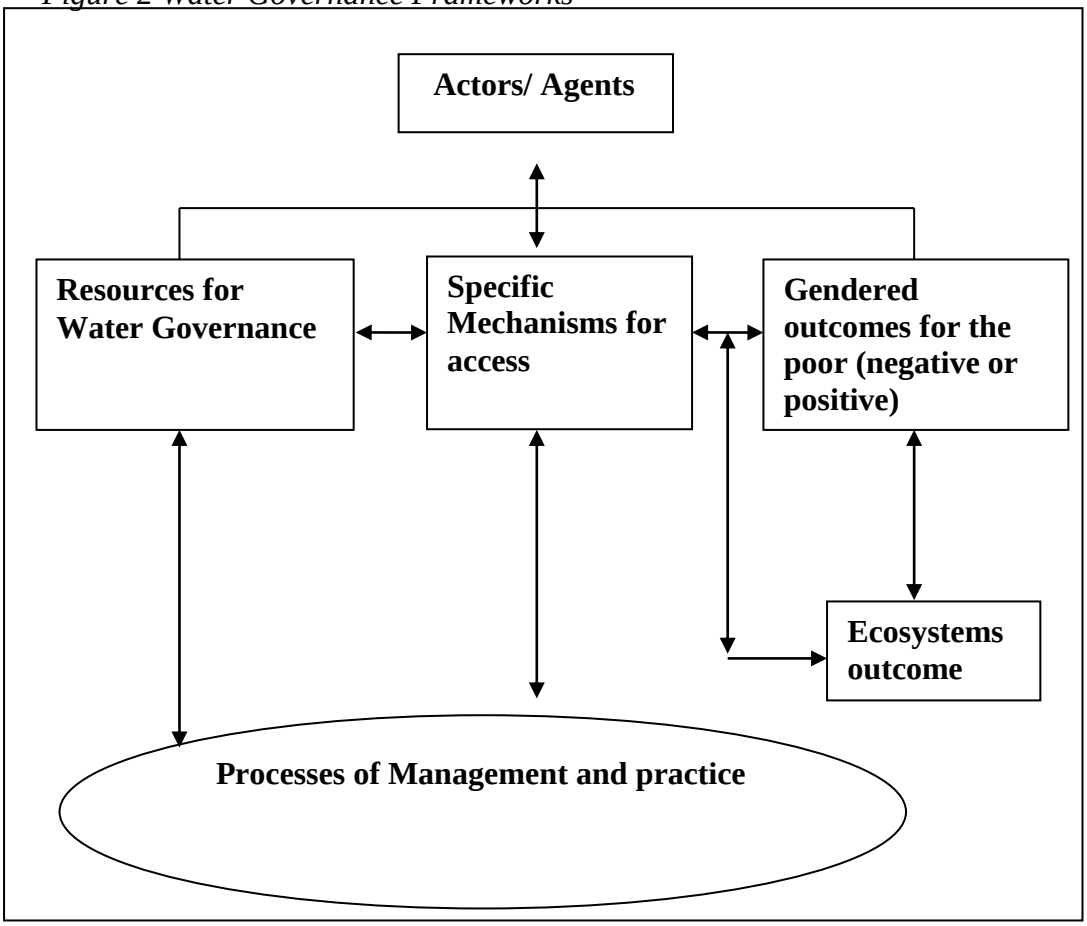
Governance is a multi-faceted concept. It is defined as the processes of exercising the economic, administrative and political authority to administer the affairs of the country (UNDP, 2006). Governance is not restricted to "government", it also involves the private sector, civil society and various groups who exercise their interests, legal rights and perform their responsibilities to address their differences. The character of relationships between various social organizations and stakeholders is a key element of governance (UNDP, 2006).

Corroborating the above position, Groenfeldt and Schmidt (2013) also conceptualize governance as the process whereby individuals and organizations (public and private) administer their affairs. It is also defined as the formal institutions and regimes mandated to ensure individuals' compliance to policies and programmes for the interest of the people. The concept of governance is often used interchangeably with management, even though; management denotes the collective allocation of resources to accomplish specific objectives, whereas governance focuses on the processes of decision–making relating to the management of the resources. More specifically, governance in the context of water sub-sector is perceived as a subset of a country's general governance system of how different stakeholders interact with each other in the management of water services (Rogers and Hall, 2003).

In a related study by Cleaver and Franks (2005) entitled *Water Governance and Poverty a Framework for Analysis,* Cleaver and Franks (2005) developed an analytical framework to explain how

arrangements for water governance are formed, and its influence on water services management. The framework was developed by Cleaver and Franks (2005) based on the reflections on the contemporary view of governance. The framework adapted concepts obtained from different theories including the social theory (Giddens, 1984), and post-institutionalism (Benjaminsen and Lund 2002). Also, it generated some of the issues from the sustainable livelihoods framework (Ellis, 2000) and relevant issues on chronic poverty (Hickey and Bracking, 2004). Figure 2 depicts the Cleaver and Franks (2005) water governance framework.

Figure 2 Water Governance Frameworks



Source: Cleaver and Franks, 2005.

The framework highlights the key issues and elements which are significant in water governance. These are actors (agents), resources for water governance, specific mechanisms for access, gendered outcomes for the poor, ecosystems outcomes and processes of management and practice. The framework suggests that efforts at promoting water governance to achieve better outcomes require resources. In this context, resources refer to the materials and non–material goods through which water governance is built (Giddens, 1984). Put differently, they are rules that regulate the pattern and the use of water resources (water resource allocation) among the stakeholders. Mechanisms are the arrangements in managing access to water resources. They are not primarily fixed agreements for the management of water delivery, but rather agreements which can be negotiated by the stakeholders and therefore are possible to change over time. They consist of the formalised institutions, physical structures and technology. For instance, a specific technology will be related to particular institutional arrangements. Such arrangements may be a complex and dynamic mix of formal institutions and social systems. The outcomes of water governance system are seen in terms of social relations and processes. Outcomes are the results of the activities of the elements on the poor; the ecosystems and how these are formed by the mechanisms as shown in Figure 2, and how the mechanisms are also created from the resources to manage the use of water resources. The final element of the water governance framework consists of the actors and agents who interrelate in all directions in the framework. They are the individuals, groups and the state which help to build mechanisms of water governance (Giddens, 1984: 27).

The framework is critical in the following ways. First, it helps us to understand that water governance is a multi-layered, multi-dimensional and dynamic issue. In this case, water governance is considered as the arrangements of actors and resources, mechanisms and processes which facilitate the management of water resources in the society (Walker, 2014). Second, the framework also helps us to appreciate how the water resource arrangements can influence and impact (both positively and negatively) on the vulnerable and underprivileged in the society. Third, it helps us to address market disruptions, perverse incentives and pricing that prevents the poor from getting access to water supply services (Walker, 2014).

In spite of the above, there are a number of shortcomings associated with the suitability of the framework. First, it fails to expatiate more on the ways local interactions mould and regulate water governance processes. Second, it does not explain the conditions that are likely to affect the mechanisms for the access and management of water resources at the household units (Cleaver and Franks', 2005). The next section focuses on review of literature on access to water services.

3.9 ACCESS TO WATER SERVICES

Access to safe water supply services is a basic human need. As a result, safe water supply is considered as a fundamental human right (WHO, 2008). Encumbered by the incessant rise in the global population, the security of water resources has raised much attention in the world, because the growing scarcity of water poses a serious threat to sustainable development (Kerr, 1990; Bremner and Bilsborrow, 2004; UN-Habitat, 2006). Although, the security of water resources is a global challenge, low and middle income countries are particularly faced with the competition of access to safe water supply services due to the increasing size of population (Kerr, 1990; Bremner and Bilsborrow, 2004; UN-Habitat, 2006). According to these reports, if these trends continue, the available safe water supply services for global consumption will be insufficient in 20-40 years**.**

Corroborating the above position, VanCalcar (2006) reveals that safe water is a basic requirement for all, because safe water supplies, especially, benefit women and children of many societies, who are responsible for the collection and transportation of water used in the households. However, less than one percent of water on the earth's surface is fresh water; a common feature associated with freshwater resources is its uneven distribution and erratic nature, which is caused by time and space of rainfall and the climatic conditions of the place. In his viewpoints, throughout the globe, the arid regions usually receive little or no rainfall all over the year, whilst, the humid regions, mostly receive heavy rainfall within a year. In view of this, places which lie in the semi-arid zones often experience scarce water supply due to the high temperature and low precipitation. This situation reduces the quality of fresh water supply, straining the existing fragile situation of the water supply system (VanCalcar, 2006).

In their investigation into fresh water supply situation in low income countries, Koenig (1998) and Frankel and Thake (2006) contend that the management of water resources is a critical factor contributing to water scarcity in many low income countries on the globe. They revealed that in low income countries, especially in Africa, the vicinity of water resources is unhygienic. In addition, groundwater resources are used by human for farming and also as source of drinking water for animals. These activities end up contaminating water resources, which, in turn lead to fresh water scarcity in rural communities in Africa.

Further, Essaw (2001) and Ohlsson and Turton (1999) have argued that the price paid for quality water supply services is quite outrageous in developing countries. Hence, households in developing countries persistently rely on traditional sources such as lakes, rivers, wells, ponds and dams for domestic purposes. These traditional water sources are sometimes polluted through either the activities of animals or human. As a result, the use of these sources of water supplies lead to adverse health effects; such as the outbreak of cholera and the spread of antimicrobial resistance-another major public health threat to the residents in the communities.

In a related study, Gleick (2000) and Fust (2006) also contend that challenges associated with water and sanitation services delivery are quite enormous and frustrating in developing countries. These challenges are caused by poor administrative structures, inefficient legislations regulating the water and sanitation services delivery, deficit fiscal resource management, low level of women's participation in the planning and management of water and sanitation projects, lack of local coordination and collaboration among external donors and centralized control and management of water and sanitation services (Gleick, 2000; Fust, 2006). Access to quality and sustainable sanitation are discussed in detailed in the following section.

3.10 ACCESS TO QUALITY AND SUSTAINABLE SANITATION SERVICES

The concept of sanitation lacks a universally accepted definition due to differences in cultural underpinnings reflecting the way people in general see sanitation, hygiene and waste (Mensah, 2002). Sanitation is conceptualized as the state of cleanliness of a place or a community. It

can also be defined as interventions to minimize inhabitants' exposure to diseases through the provision of hygienic environments (Schertenleib and Dionys, 2002). Going by Schertenleib and Dionys (2002) perspective, sanitation encompasses hygienic management of human and animal excreta, the safe disposal of refuse and waste water, garbage/ rubbish, the use of flush toilets and a range of improved ventilated pit latrines which control flies and odours.

Writing on the sanitation situation in developing countries, Fraenkel and Thake (2006) documented that access to sufficient sanitation services and hygiene education are not satisfactory in many households in developing countries, because sanitation facilities such as toilet, septic tanks, and dump sites are usually located in places which are far from the users of the services. Due to this, many households in rural communities dispose human waste at places closer to them. In addition, other people also openly defecate indiscriminately in the communities. According to the scholars, an estimated total of three (3) million people practice open defecation in developing countries (Fraenkel and Thake, 2006). This practice, in turn, serves as a threat to human health because it exposes most of these rural households to sanitation related diseases such as diarrhoea, cholera, shigella, coli, and campylobacter diseases. The poor sanitation and hygiene related diseases often lead to deaths, suffering and financial loss to many low income households in developing countries.

Esrey (1996) also argues that in many developing countries, especially in densely populated or informal settlement communities, public toilet facilities serve numerous households in the communities, but these public toilet facilities which are meant to serve many households in the communities do not meet the desired outcomes, regardless of technical design and good intentions. They underscored that many of the public toilet facilities lack regular cleaning and proper maintenance. In his viewpoint, these conditions serve as breeding grounds for sanitation and hygiene related diseases.

In a similar study, Ewald (1994) opines that hygiene behaviour formed by people is very hard to transform in order to bring change into their well-being of the households in the community levels. These bad behavioural attitudes of households towards sanitation issues are responsible for the incidence of sanitation and hygiene related diseases in many communities in developing countries. These poor attitudes

include the failure to wash hands in critical times, indiscriminately dumping of refuse and open defecation. Concluding the point, Ewald (1994) reveals that these bad behavioural attitudes exhibited in many households towards the sanitation and hygiene management in developing countries could be confronted if people change their attitudes towards hygiene at the household and community levels.

Along the same line of reasoning, IRC (2001) indicates that good sanitation behaviour and practices comprise of range of components namely; safe disposal of human excreta, adequate personal hygiene (hand washing, the safe handling of drinking water collection, storage and drawing of water), the safe disposal of waste water, the safe disposal of solid waste such as disposal and management of animal waste, good home sanitation and food hygiene. According to IRC (2001), good sanitation behaviour and practices are dictated by the way people act in general; more specifically, in relation to the state and conditions in which people live. As echoed by IRC (2001), good sanitation behavioural practices must usually start from the personal, households and then at the community levels.

Corroborating the above position, Tenkorang (2002) argues that the appropriate use of sanitation services and hygiene programmes at the households' levels are shaped by the level of formal education of individuals at the household levels. The reason is that education equip people with the knowledge that enable them make informed choices about behaviours that promote good sanitation practices and health. Concluding his points, Tenkorang (2002) contends that this situation has substantial long-term effects on human health at household levels in the communities.

Other scholars including Green and Kreuter (1991) also make interesting arguments to advance our knowledge of the influence of local practices and culture on good sanitation and hygienic practices in household units in communities in developing countries. Green and Kreuter (1991) reveal that good sanitation and hygienic practices are appreciated in household units where value is placed on the importance of good sanitation and hygienic practices. In their view, this can be achieved through the households' adherence to local practices and culture. Local practices and culture are perceived as tools unifying the members of the communities. Consequently, they are capable of shaping collective action and shedding light on entire households in communities to shape

human behaviour and attitudes towards good sanitation and hygiene practices (Green and Kreuter, 1991).

3.11 SUMMARY OF THE CHAPTER

The chapter focused on the review of the conceptual and empirical literature underpinning decentralization of water and sanitation services delivery. The review focused on the definitions and dimensions of decentralization, appropriate conditions for successful performance of decentralization and citizen participation in the decentralization programme. Further, the chapter also focused on the review of the studies on the impact of decentralization on public goods and services delivery. In addition, the chapter also focused on the reviewed of literature on centralization of public goods and services delivery, the empirical studies on decentralization and public services delivery, the concept of good governance, studies on access to water services and households' access to quality and sustainable sanitation services. The goal of this chapter was to evaluate the theoretical concepts and empirical studies within the study area to enable the researcher appreciate the synergy among the core variables underpinning the study for easy understanding of decentralization of water and sanitation services delivery. It also serves as the basis for conducting the analysis of the study. The next chapter examines the research design and methodology adopted for the study.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

This chapter presents the methods employed to collect and analyze data. The chapter focuses on the research philosophy, study area, methodological approach to the study, study design, target population, sampling, sample size and technique, fieldwork, sources of data (primary and secondary data), data collection techniques and instruments (questionnaire, focus group discussion and in-depth interviews), pre-test of data collection instruments, procedure for water quality test (detection of bacteriological parameters–total coliform and *E. coli*), ethical considerations, data processing and techniques of analysis, field challenges, and how the challenges of the study were circumvented. The chapter concludes with a summary (See 4.1 for the detailed discussion of the research philosophy).

4.1 RESEARCH PHILOSOPHY

Paradigms play a very critical role in science. The concept of paradigm was first developed by Thomas Kuhn in his famous book *The Structure of Scientific Revolution* published in 1960. According to Kuhn, paradigm is defined as a basic set of beliefs and guiding principles which explain how research in a specific discipline should be conducted and how the findings must be interpreted (Kuhn, 1970). Paradigms consist of the general orientations of a research, which outline the theories that guide the research techniques and interpretations (Tashakkori and Teddlie, 2010). In the framework of social and behavioural sciences, paradigm is mainly associated with two main approaches namely "positivist" and "constructivist" (Kuhn, 1970; Tashakkori and Teddlie, 2010). Equally, a number of social scientists also consider these two philosophers as the "positivist" and "interpretive" paradigms (Leedy and Ormrod, 2010). More specifically, each of them has its own philosophical principle which explains how data must be collected, analysed and interpreted (Bryman, 2004). According to Tashakkori and Teddlie (2010), the nature and underpinning ontological and epistemological stance of the two dominant paradigms provided a debate in social science research.

The term positivist was developed by Auguste Comte, a French philosopher in 1822. Auguste Comte argues that a society could be observed and explained logically and rationally, as a result, social science research could be described as a scientific study just as biology or physics (Babbie, 2007). According to positivist researchers, scientific knowledge is gained through systematic gathering of empirical data, and thus only theories developed from such data can be deemed scientific (Holm, 2012). In view of this, when conducting social science research, positivist researchers employ the techniques of natural science including the impersonal survey methods (questionnaire) to collect data. Positivist researchers also assume an independent and objective position during the data collection process. The overarching goal of the positivist research, then, is to generate hypotheses that can be tested (Denzin and Lincoln, 2011; Strauss and Corbin, 1998; Holm, 2012), verified through subsequent research (Holm, 2012), as well as to offer time and context-free generalizations of the research findings. In the viewpoints of positivist researchers, this is possible because human actions can be elucidated based on the real causes that guide behaviour. In sum, positivist paradigm" *equates authenticity with science and scientific techniques*" (Zammito, 2004), and as such, positivism is therefore associated with quantitative method of data collection and analysis. Post-positivism, one of the recent philosophies of science emerged as an advanced version of dominant positivist paradigm (Zammito, 2004). In practice, post-positivist researchers do not believe in strict causal relationships as is the practice of positivist researchers. They contend that all causal relationships are a probability that may or may not occur. Viewed from this perspective, post-positivist researchers view inquiry into social phenomenon as a series of logically related steps, believe in multiple views from the participants than a single reality, and therefore adopt systematic techniques of data collection and analysis (Denzin and Lincoln, 2011).

In spite of the success linked with positivist philosophy, its ontological and epistemological foundations have strongly been criticised. According to the critics, positivism is mechanistic in its perspectives. In view of this, positivist researchers define life in

measurable terms, excluding notions of choice and moral responsibility (Cohen, Manion and Morrison, 2007).

Following the above, attention was focused on the interpretive philosophy. According to the interpretive paradigm, individuals' relationships with their social world construct their own reality. They claim that knowledge is built not only by observable phenomena, but through the descriptions of participants' views, perspectives, beliefs, meanings and self-understanding (Henning, Van Rensburg and Smit, 2004: 20). Based on that, the imposition of external form and structure as characterized the positivist paradigm is resisted in the interpretive paradigm, because under interpretive paradigm, the researcher focuses on the perspectives of the 'insider' to study the social phenomenon (Blaikie, 2000). This is because interpretivist researchers hold the viewpoints that, human social life is qualitatively different from other issues which are studied in the physical sciences (Babbie, 2007). For this reason, the goal of the interpretivist researchers is to make sense of the human actions rather than to generalize and prove causes and effects (Hatch and Cunliffe, 2006). In practice, interpretivist researchers employ research techniques such as in-depth interviews, focus group discussions and dialogues, which are more receptive to understanding the participants' perspectives of the social phenomenon (Lincoln and Guba, 2000; Schwandt, 2007). In addition, interpretivist researchers believe that the social scientist cannot entirely use the ideas of natural sciences, thus, a special type of science is needed to meet the distinctiveness of human social life (Cohen, Manion and Morrison, 2007). Furthermore, interpretive scholars also consider social reality as being very fluid; as a consequence, they are linked with qualitative methodologies because they believe that qualitative methodologies are capable of addressing the fluid processes of social phenomenon (Leedy and Ormrod, 2010). It is in line with this that the interpretive researchers are more doubtful about the positivist's stance to produce quantitative measures of social reality (Neuman, 2004).

In spite of this, one shortcoming associated with the interpretive paradigm is that, under the interpretive paradigm, the ability of the researcher to get accurate proof of social phenomenon depends on how the researcher can truly capture the inner world, reproduce

worldview, as well as personal views and opinions of the participants studied (Cohen, Manion and Morrison, 2007).

In view of the above, researchers began to align their studies with either quantitative or qualitative orientations, based on the positivist or interpretivist beliefs (Tashakkori and Teddlie, 2010). This phase of research was termed as the mono-method to scientific study regime (Tashakkori and Teddlie, 2010). However, the mono-method approach was also challenged in the 1960s. According to critics, in a social science research, many research questions could not be dealt with by a purely qualitative or quantitative technique (Bryman, 2004). As a consequence, a third set of beliefs called pragmatic paradigm (the mixed methods approach) ultimately emerged in the field of social science. According to pragmatist researchers, an external world is independent of the mind, as well as those lodged in the mind. Hence, the pragmatic researchers focused on the outcomes of research; the actions, situations, and consequences of inquiry; rather than antecedent conditions (Cherryholmes, 1992). Based on that, the pragmatic paradigm rejects a strict choice between positivism and interpretivist beliefs (Creswell, 2003). In practice, the pragmatist researchers believe that instead of taking to only one approach (a mono-philosophical position), researchers have to adopt many approaches (mixture of qualitative and quantitative approaches) to collect and analyze data. The idea is that social phenomena require different types of techniques in order to appreciate and make inferences. In line with this, philosophically, the researcher aligned the study with the pragmatic paradigm. The argument is that pragmatic paradigm allows researchers to make real decisions about which methods to employ in the study based on the individual value systems (Creswell, 2003). Further, it also permits the use of both qualitative and quantitative data through data triangulation in the analysis (Denzin and Lincoln, 2011; Saunders et al, 2009).

4.2 STUDY AREA

Wa Municipality in the Upper West Region is used as a case study. The Municipality is one of the districts in Ghana. Ghana lies between latitudes 5^{o}, 36 minutes North and 0^{o}, 10 minutes east. From the coast, the country extends inland to latitude 11^{o} north, covering a

distance of 672 kilometres from South to North. Ghana has a total land area of 239, 460 square kilometres. The distance across the widest part from East to West measures about 536 kilometres (Ghana Statistical Service, 2012). To the East of Ghana lies Togo. To the West is La Cote D' lvoire and to the North is the Republic of Burkina Faso. Ghana's population was estimated to be 25, 824,920 million, with the growth rate of 2.4% as of 2012 (Ghana Statistical Service, 2012).

The Wa Municipality, which serves as the basic unit of governmental administration is one of the eleven District/Municipal Assemblies in the Upper West Region of Ghana, which was upgraded to the Municipality status in 2004 with Legislative instrument (L1) 1800 in pursuant of the policy of decentralization which started in 1988. The Municipality[2] is bordered to the North by Nadowli-Kaleo district, to the South by both Wa East and West districts, to the East and West by Wa West and East districts. Wa Municipality lies within latitudes 1^0 40 N to $2^0$45 N and longitude 9^0 32W to 10^0 20W (Wa Municipal Assembly, 2014). Wa, the capital of the Wa Municipality also serves as the regional capital of the Upper West Region of Ghana. The Municipality has a landmass area of approximately 234.74 square kilometers, which is about 6.4% of the region (Wa Municipal Assembly, 2014). The implications of the location of the Municipality for development include; enhancing bilateral trade and commerce with Ghana's Franco-phone neighbours. Wa Township has the potential to grow and be upgraded into both an industrial and commercial hub for the North–Western corridor of Ghana. The population of the Wa Municipality constitutes almost 15.3% of the region's total population. The annual rate of growth of the population is estimated as 2.7%. About 33.7% of the population live in areas classified as rural (Ghana Statistical Service, 2012).

In addition, on distribution of settlements according to population, Wa Municipality has a population of 135, 638 (female 65,887 and Male 69,751). It can be concluded that apart from Wa Township, most of the settlements are basically rural, although there are isolated towns with a population of more than 3000. In fact, Wa Township is an important commercial center and the most populous town, followed by Busa, Charia, Kpongu, Boli, Kperisi, Nakori, Suga,

[2] Municipality is used interchangeably with Municipal Assembly

Jongu, Piisi, Bamaho, Biihee and Sing (Wa Municipal Assembly, 2014). The main reason for this trend of population distribution in the Wa Municipality is that Wa Township provides the highest first level services in health, education, finance, administration justice and security, commerce and transportation, resource mobilization, peace building and community needs identification. Therefore, people from other districts within the Upper West Region prefer to stay and work in Wa Township in order to get access to these services (Wa Municipal Assembly, 2014). See figure 3 for the Map of the Wa Municipality showing the selected communities for the study.

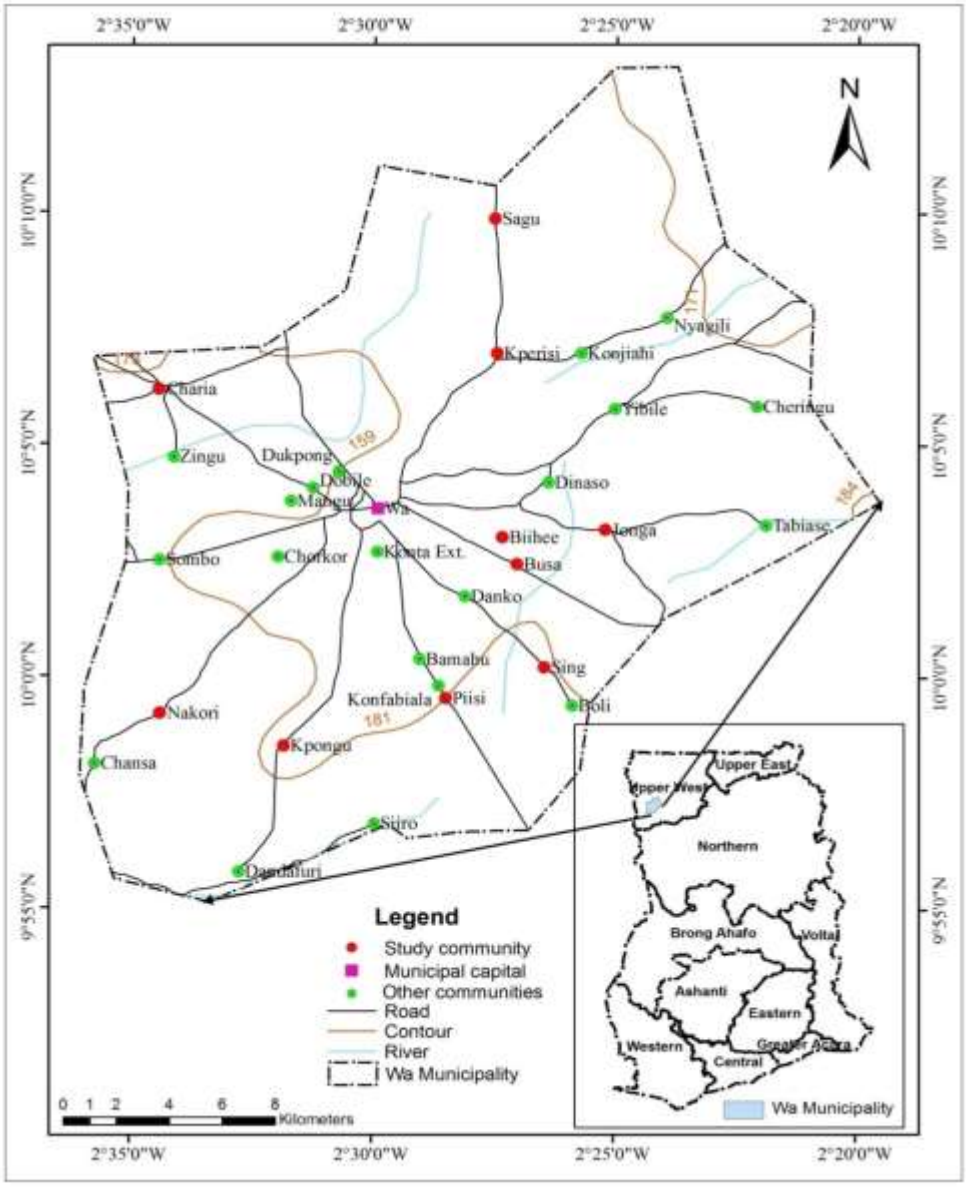


Figure 3 Map of the Wa Municipality showing the selected communities for the study.

Source: Department of Environment and Resource Studies, University For Development Studies, Ghana (2015).

4.3 METHODOLOGICAL APPROACH TO THE STUDY

Based on the arguments of the pragmatist orientations, a mixed method research which emphasizes the mixing of both qualitative and quantitative approaches was chosen for the study. The mixed method research entails the collection, analysis and interpretation of qualitative and quantitative data in a study (Leech and Onwuegbuzie, 2009). The technique included the application of the various kinds of approaches such as questionnaire, focus group discussion, interview and dialogues to help better answer the research questions (Hayati, Karami and Slee, 2006).

The qualitative research approach was employed in this study. This approach focused more on samples of the entire groups to study decentralization of water and sanitation services delivery in the study area. Issues that engaged the researcher's attention were the households' knowledge of administrative and legislative frameworks of water and sanitation services delivery, procedure of selecting beneficiary communities into the water and sanitation project and sources of finance for water and sanitation project. Also, the qualitative data also centred on coordination and collaboration among donor agencies in water and sanitation project, monitoring of activities of non-governmental organizations in water and sanitation project, the relationship between the WATSAN committees/WSDBs and the sub-structures, corporate decision making on water and sanitation project and the relationship between water and sanitation services delivery and health of the people. The application of the qualitative research was critical in this study in that qualitative approach studies things in their natural setting, attempting to make sense of, or to interpret phenomena in terms of the meanings people assign to them (Denzin and Lincoln, 2011). Moreover, in qualitative research, the researcher is the main instrument for data collection and analysis (Creswell, 2012). Qualitative research is also descriptive primarily because, the researcher is more concern with the procedure, meaning and understanding gained from words or pictures (Bryman, 2004; Cohen and Crabtree, 2006). See Table 2 for the characteristics of qualitative research.

Table 2 Characteristics of qualitative research

Theme	Description
Natural Inquiry	The study of natural or real-life conditions as they unfold and openness to findings which emerge from the study
Design flexibility	Willingness to adjust to the inquiry as understanding of the conditions of the participants depend on the situation change
Qualitative Data	Data obtain from the direct quotes of the participants, individuals' views and perceptions, detailed observations the phenomenon, careful document review, or case studies
Dynamic Systems	Believes that change is consistent and ongoing
Personal Insight	The researcher has a direct relationship with the participants and the situation, and thus, the researcher personal experiences of the situations are crucial to help understand the phenomenon
Inductive Analysis	Explanation of trends and themes in data, followed by confirmation regulated by analytical principle as opposed to rules
Holistic Perspective	The researcher concentrates on the entire phenomenon of the study so that meaning cannot be reduced to few discrete variables

Source: Patton, 2002: 40-41

Though qualitative approach was predominately used in this study, quantitative approach was also used through the application of a structured questionnaire to solicit data from the beneficiaries involved in decentralization of water and sanitation project. This is critical, because it helped the researcher to improve the reliability and validity of the research design through the combination of qualitative and quantitative data and triangulation by applying multiple methods of sampling, research tools and statistical analyses. The quantitative technique was used to measure the following issues; waiting time at the water point for water supply services, regularity of water supply services, households coverage with sanitation services, solid waste generation and disposal, households hygienic practices, frequency of cleaning water storage containers and reservoirs, maintenance of boreholes, cost of water supply services and the water quality at the households units in the communities. The quantitative technique helped to determine the relationship between households' access to efficient, quality and sustainable water and sanitation services delivery and health of the rural and peri-urban communities. Issues considered included cases of prevalence of water borne and sanitation related diseases and knowledge on water borne and sanitation related diseases. In addition, the quantitative research also helped the researcher to break down the difficulty, create authenticity and expedite conceptualization. Furthermore, it helped the researcher to include many more respondents with the intention of minimizing the temptation of impartiality and inaccuracy of data (Mugenda and Mugenda, 2008).

In sum, the application of the mixed method approach in this study is important in that it helped to improve the credibility of the research findings due to the fact that the combination of the two major approaches complemented each other for the analysis (Scandura and Williams, 2000). Again, the use of mixed methods research (qualitative and quantitative methods) provided an additional perspective to the research questions, as the qualitative methods sought to determine the experiences, views, attitudes, behaviour, knowledge and perspectives of the participants of the situation, and the quantitative methods helped in investigating the gaps in decentralization of water and sanitation services delivery in terms of access, efficiency, quality and sustainability of the services in the

study area. This helped to broaden the scope and deepen the researcher's insights of the study (Punch, 2005). Further, mixing qualitative and quantitative approaches in this study assisted the research to benefit from the strengths of both quantitative and qualitative methods, which therefore enhanced the validity of the findings of the study (Bryman and Bell, 2007).

4.4 STUDY DESIGN

The study adopted the exploratory and cross-sectional design. According to Kothari (2005), exploratory research process provides a framework for an empirical investigation into existing phenomenon within its real–life situation, especially when the boundaries between phenomenon and the context seem not to provide clear evidence, and which various sources of evidence are seemingly impossible. Furthermore, Fayorsey (2010) also defines a cross-sectional research as the collection of a body of quantitative data in which more variables are examined to find out the forms of associations.

Cross–sectional design involves the collection of data on more than one case at a particular time without intervals (Fayorsey, 2010). Even though this type of research design is linked with quantitative research, it also allows for triangulation of both qualitative and quantitative methods (Fayorsey, 2010). According to Frankfort-Nachmias and Nachmias (1996), in a cross-sectional survey research, researchers usually ask a random sample of respondents to respond to a set of questions about their backgrounds, past experiences and perceptions of the current situation. Cross-sectional survey research is used to study the relationship between various variables at a single point in time. Based on that, the exploratory and cross-sectional designs were deemed appropriate because the study was conducted to explore the effects of decentralization of water and sanitation services delivery on the rural and peri-urban communities in the Wa Municipality, which required that the researcher observed existing patterns of behaviour, why they occur and what they imply (Punch, 2005).

4.5 TARGET POPULATION

The target population consisted of the beneficiaries of water and sanitation services from the selected communities in the Wa Municipality. Also, key informants such as officials from institutions and government departments, officials from external donor agencies, non-governmental organizations (NGOs), opinion leaders including assembly men, unit committee members, women groups and the WATSAN committees/WSDBs.

4.5.1 SAMPLING, SAMPLE SIZE AND TECHNIQUE

In this study, multi-stage sampling technique was used to obtain the sample size. Babbie (2006) defines multi-stage sampling technique as the selection of respondents at various levels within the target population through the combination of diverse sampling techniques (probability and non-probability techniques). Further, according to Babbie (2006), multi-stage sampling technique is important in a study when individual selection of elements seems too expensive to handle. It also allows the researcher to use other sampling techniques, including non-probability sampling techniques such as accidental, purposive and stratified sampling. Although, the use of the multi-stage cluster sampling technique in this study was associated with errors, in comparison to other sampling techniques like systematic sampling, quota sampling and simple random sampling, multi-stage cluster sampling technique was the most appropriate technique in the sense that it helped the researcher to employ the multi-sampling methods to obtain the sample size for the study.

To determine the sample size for the study, all the communities were listed and mapped. Afterwards, 10 communities were selected from the Wa Municipality using the simple random sampling technique. In addition, in each of the selected communities, all the houses were given serial numbers for the purpose of identifying the houses which had been selected for the study. Eventually, 3060 inhabited houses were located within the 10 communities that served as the sample frame for the study. A sample size of 354 was determined using the Fisher, Laing, Stoeckel and Townsend (1998) formula for sample

estimation. The process used in calculating the sample size is provided below: $n = \frac{N}{1+N(\alpha)^2}$ Where:

n is the sample size

N is the total number of houses (3,060)

α is the margin of error α=5% or 0.05

Using the above formula, the number of households involved in the study was arrived as follows. $n = \frac{3,060}{1+3,060(0.05)^2}$

n=˜354

Hence, a total of 354 households were sampled for the study. The distribution was then made proportionally based on the number of houses in the selected rural and peri-urban communities in the Wa Municipality. The details of the sample distribution of the study communities are presented in Table 3.

Table 3 Sample distribution of the study communities in the municipality

Community	**Housing Units**	**Absolute share**
Busa	460	53
Charia	379	44
Kpongu	358	41
Kperisi	294	34
Nakori	286	33
Sagu	278	32
Jonga	268	31
Piisi	252	29
Biihee	247	29
Sing	238	28
Total	**3,060**	**354**

Source: Fieldwork, 2015

Afterwards, the heads of each household[3] were selected as the respondents for the study. The households were used in the study

[3] A household consists of a group of individuals which comprises of a family unit, reside in the same place, and also eat together from one pot (Foster, 2000).

because they are the end users (beneficiaries) of water supply and sanitation services. Thus, it is important to engage them in the study in order to solicit for their views, perceptions and experiences in relation to the water and sanitation services delivery in their communities. In addition**,** several officials from institutions, agencies, (both public and private) consisting of mostly government departments, NGOs, assembly members, unit committee members and women groups who are the stakeholders in the community water and sanitation sub-sector were purposely selected as the key informants for the study. Altogether the key informants were fifty (50). Key informants were purposively selected because they are the policy makers who design and execute policy on water supply and sanitation project. Therefore, they have rich knowledge and experience on decentralization of water and sanitation projects in the rural and peri-urban communities in the Wa Municipality. These categories of respondents were interacted with using various types of data collection tools to generate the data for the study. Table 4 shows the distribution of the key informants for the study.

Table 4 Distribution of the key informants of the study

Category of Respondents	**Number of Respondents**
Regional Director, Environmental Protection Agency	01
CWSA Extension Service Specialist01	
Director of Water Resource Commission	01
Regional Manager, Ghana Water Company Limited	01
Director, Upper West Regional Coordinating Council	01
Municipal Coordinating Director	01
Municipal Chief Executive	01
Director, Municipal Health Services	01
Director, Municipal Environmental Health	01
Pronet, Upper West Region	01
Officials from External donor agencies	05
Assembly Members (elected and appointed)	10
Unit Committee Members	10
WATSANS/WSDBs	10
Women groups	05
Total	**50**

Source: Fieldwork, 2015.

4.6 FIELDWORK

Fieldwork was carried out from 1st November, 2014 to 30th June, 2015. The data were collected from the field in two phases. The first phase focused on data collection from the end users (beneficiaries) of the services; the Assembly Members, Unit Committees, WATSAN committees/WSDBs, and Women Groups at the community levels. This phase began on 1st November, 2014 and ended on 31st February, 2015. The second phase of data collection started on 1st March, 2015 and ended on 30th June, 2015. The data were collected from officials in institutions, government departments and agencies, the beneficiaries, as well as NGOs in the Wa Municipality.

4.7 SOURCES OF DATA COLLECTION

This process largely focuses on the explanation of the type of the data and how the data were collected. In this study, the data were collected from two sources, namely, primary and secondary sources. Primary data involved the collection of the data directly from the field. The data were collected from the institutional actors, as well as the users of the community water and sanitation services in the selected rural and peri-urban communities in the Wa Municipality. Different data collection instruments were employed in the study. They included the questionnaire survey, in-depth-interviews and focus group discussions.

The secondary data comprised the relevant documents on decentralization of water supply and sanitation services. The sources relied on included Community Water and Sanitation Agency annual reports, Ministry of Local Government and Rural Development bulletins, Ghana Statistical Services 2010 population and housing census report, World Bank annual reports, Academic literature (magazines, periodicals, journals, monographs and books) from the Aalborg University Library in Denmark and the Balme Library of the University of Ghana, Legon. Other secondary data sources focused on were Central Government Budget Statements, Wa Municipal Assembly Budgets, Wa Municipal Assembly financial and health reports, Ministry of Finance annual reports in Ghana, NGOs and External donor agencies annual reports. On a more positive note, these sources helped the researcher to obtain enough data on water

and sanitation services sub-sector in the context of the Ghanaian situation. The secondary data were used to complement the primary data in the analysis of the study.

4.8 DATA COLLECTION TECHNIQUES AND INSTRUMENTS

The data for the study were obtained through the use of survey questionnaire, in-depth interview and focus group discussions. Issues captured in the data collection instruments included the challenges of decentralization of water and sanitation services delivery. Other critical issues covered in the data collection instruments were access, efficiency, quality and sustainability of water supply services, sanitation services and health considerations of the use of unsafe water and unsafe sanitation services. Also covered in the data collection instruments were the general assessment of the decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality.

4.8.1 QUESTIONNAIRE SURVEY

A total of 354 questionnaires were administered in all the survey communities. The items on the questionnaire were mostly closed-ended with possible responses provided. In addition, the open-ended questionnaire items were also provided to enable the respondents to provide in-depth responses. Questionnaire administration was the common data collection instrument used for the data collection in this study. The reason is that questionnaire survey facilitated the collection of data and therefore helped to ensure the best matching of concepts of reality. It also ensured the same responses were given from a given set of respondents. Also, it helped the researcher to reduce inconvenience caused by unfavorable interview times and busy schedules. Finally, the questionnaire survey helped the researcher to explain the relationship between variables of the study to the respondents. However, one difficulty encountered with the questionnaire survey was that some of the respondents initially misinterpreted the questions in the questionnaire. Appropriate local languages were used to interpret the questions to the respondents to

understand the questions in the questionnaire. As a result, the respondents provided appropriate answers to the questions.

4.8.2 FOCUS GROUP DISCUSSIONS

Focus group discussion was also used to collect the data for the study. This technique of data collection was in the form of an in-depth interview but with selected groups instead of individuals. In all, 10 FGDs were held in the selected communities for the study. Each consisted of a minimum of seven (7) members. Women were included in the FGDs because in the rural communities of Ghana, women and children are responsible for collection and transportation of water home for households use such as washing, watering gardens and cleaning services so they are knowledgeable of the issue (Sarpong, 2008). Men were also targeted in the FGDs because they pay for water supply and sanitation services for households. To this end, they have extensive knowledge of the issue of water supply and sanitation services delivery in their communities (Sarpong, 2008). Men and women were separated in the FGDs because in the Wa Municipality of the Upper West Region of Ghana, the culture allows women to play a role as caretakers at home, rather than to perform decision making function at the household or community levels (Eguavoen, 2008). For this reason, if they are grouped together, they would not be able to express their views, experiences and perceptions about the issue of the study in the presence of their male counterparts. The focus group discussions were held in four (4) days in the quiet outdoors on the compounds of respondents during the evening. Each FGD lasted between 25 and 30 minutes. The choice of the evenings for the FGD was appropriate because it was difficult to meet respondents in the morning since residents in the households leave as early as 5:30am every morning for their farms. During the focus group discussions, all the issues which were discussed, mostly, in the local language, were audio recorded and subsequently transcribed, translated and analyzed based on the objectives of the study. The focus group discussions (FGDs) were interactive processes; as a result, they provided unique advantages to the study. The focus group discussions helped the researcher to thoroughly explore the perceptions, experiences, opinions and reactions of the participants in response to the nature of water supply and sanitation services

delivery in the study area which the researcher was interested in. This provided the opportunity for gaining further and detailed data to support the anecdotal statements that most respondents provided during the questionnaire administration stage. Even though the use of the FGD was very appropriate for this study, one key challenge encountered was that, the FGD was a time consuming exercise because the moderators had to spend 25 to 30 minutes on a group during the interactive process.

4.8.3 IN-DEPTH INTERVIEW

In-depth interviews were also conducted with the relevant actors. They included actors (stakeholders) with decision-making powers in community water and sanitation sub-sector and the beneficiaries of the water and sanitation services in the selected communities of the study area. These responses were audio recorded, transcribed and translated for the purpose of analysis. The in-depth interview method of data collection was appropriate for this study for two reasons. First, the in-depth interview method of data collection allowed for greater flexibility in order to restructure the questions to ensure that the questions were clearer and comprehensible to respondents. Second, in-depth interviewing helped to establish a good rapport with the respondents during the data collection period. This created the opportunity for the interviewee to provide sufficient and detailed responses freely to the questions posed (Table 5: Summary of Research Questions and Objectives related to Research Methods**).**

Table 5 Summary of Research Questions and Objectives related to Research Methods

Research Questions	**Research Objectives**	**Research Strategy**	**Data Collection Process**
Are there challenges with the decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality?	To assess the challenges with the decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality.	• Field study • Documentary analysis	• Questionnaire Survey • In-depth interview • Focus Group Discussion • Documentary analysis
What are the users and service providers' perceptions and experiences on the outcomes of the decentralization of water and sanitation services delivery in terms of access, efficiency, quality, and sustainability of the services in the rural and peri-urban communities in the Wa Municipality?	To examine the users and service providers perceptions and experiences on the outcomes of decentralization of water and sanitation services delivery in terms of access, efficiency, quality and sustainability of the services in the rural and peri-urban communities in the Wa Municipality.	• Field study • Documentary review	• Questionnaire Survey • In-depth interview • Focus Group Discussion • Documentary analysis

Table 5 continued

Is there a relationship between households' access to efficient, quality and sustainable water and sanitation services and health of the community people?	To evaluate the relationship between households access to efficient, quality and sustainable water and sanitation services delivery and health of the community people.	• Field study • Documentary review	• Questionnaire Survey • In-depth interview • Documentary analysis

Source: Author's construct, 2015.

4.9 PRE-TEST OF FIELD INSTRUMENTS

According to Creswell (2012) pre-test is defined as a small study carried out before the conduct of the original study in order to establish whether the methodology, sampling and the tools and analysis are sufficient and suitable for the study. In this study, two field assistants were recruited and trained for the fieldwork. The researcher also hired a translator to assist with the translation of the items on the questionnaire, interview guides and interview schedule into the local language for the respondents. Further to it, the instruments were pre-tested in two (2) communities namely; Tindonsobulugu and Kumbosigo in the Bolagatanga Municipality of the Upper East Region of Ghana. This choice arises from the fact that Bolagatanga Municipality possesses similar characteristics as the Wa Municipality of the Upper West Region of Ghana. The pre-test was conducted because a number of scholars including Creswell (2012) have demonstrated that pre-test helps to guarantee the level of relationship involving the diverse items of a measuring construct in order to ensure the validity and reliability of the research findings.

According to Babbie (2006) and Neuman (2003), validity and reliability are crucial in establishing the truthfulness and credibility of the study findings. Nonetheless, Neuman (2003) argued that while researchers are struggling for reliability and validity in their research, perfect reliability and validity are practically impossible in any research. As part of the study, the study employed Cronbach Alpha Co-efficient to calculate the reliability of the data collection instruments through the use of Statistical Product and Service Solution (SPSS). Each theme produced a high positive Cronbach Alpha Coefficient after the pre-test. The results are presented in Table 6.

Table 6 Results of alpha co-efficient tested items in the data collection instruments

Item	**Result**
Do you have access to regular and available quality water supply services in your community?	0.874
Are women involved in the planning and implementation of water and sanitation programmes in your community?	0.785
How do the households dispose of rubbish (refuse)?	0.783
Are you satisfied with the roles of the WATSANS in community water and sanitation programme?	0.946
Do you consider centralization to be a better system of providing	
Development programmes such as the provision of water supply and sanitation services than decentralization?	0.807

According to Hair, Black, Babin and Anderson (2010), Cronbach Alpha Co-efficient relies on the inter-item relationships. Hence, if the items are strongly related to each other, their internal reliability is high; as a result, the alpha coefficient will be close to one. Conversely, if the items are badly designed, and do not connect strongly with other items, then, the alpha coefficient will be close to zero. On account of this, the instruments were deemed to produce statistically significant results since the results from the pre-test through the Cronbach Alpha was greater than 0.7. The pre-test was relevant in the study for a number of reasons: First, the pre-test

helped the researcher to ascertain the validity of instruments in order to gain insight into how the instruments could be used on the diverse or homogeneous population in the research environment. Second, it also helped the researcher to estimate the level of responses from the respondents to the method of data collection and the form of drop-outs from the study. Third, it enabled the researcher to remove questions which seemed to be vague during the data collection period from the data collection instruments. Finally, it helped the researcher to provide the appropriate time period suitable and mutually agreed on by the respondents for the survey.

4.10 PROCEDURE FOR WATER QUALITY TEST

In this study, the researcher conducted the water quality test in the study communities. In view of this, water samples were taken from the five sampled sites in the study communities (including Busa, Charia, Kpongu, Kperisi and Nakori) through the support of the Ghana Water Company Limited in Wa, Upper Region of Ghana. In addition, the households' water samples were collected in two sampled communities namely; Busa and Charia. The water quality assessments were carried out in three successive periods; the first water quality assessment was carried out in November, 2014. This period is right after the rainy season in the study communities, where the underground water is flooded due to the heavy rainfall patterns. The next water quality assessment was done in May, 2015. This is the period where the underground water is largely used by the farmers for animal and crop farming. Actually, during this period, there is a high level of human and animal contacts with the groundwater resources, thus, there is a strong element of pollution and contamination and diseases transmission into the groundwater resources. Finally, the water quality assessment was carried out in June, 2015. This period is the commencement of the raining season in the study communities, hence, an assortment of human and animal faeces are swabbed into the groundwater resources.

The goal of the water quality test was to gather baseline water quality assessment on the groundwater particularly boreholes in order to find out if water services supply to the households are safe for domestic purposes. The water quality assessment focused on the detection of bacteriological parameters-Total Coliform and Escherichia coliform

(*E. coli*). This is crucial in this study, because, generally, the number of infant deaths contributed by diarrhoeal diseases in the developing countries, which are caused by the micro-organisms, can also be traced directly to unsafe water supply services which are used by the households in the communities.
The water quality test to determine the presence of microorganism in the water supply services in the study communities was carried out through the following procedure. In the first place, the researcher run cold water for three minutes at full flow, then the cold water was reduced to flow to a trickle and run for another minute. This was done to ensure that sample water was free from organic impurities which had the tendency to interfere in the water quality analysis. Afterwards, the researcher opened the sterile sampling water bottles, and then 100ml water was filled into each of the bottles. Thereafter, the cup was put on the bottles, and sealed tightly. Following this, the researcher wrote the name, address, date and time on the sampling water bottles and then placed them in a cold container and delivered them immediately to laboratory for the water quality test and analysis.

The microorganism detection was carried out by the use of Chromo Cult Coliform Agar. 26.5g. Chromo Cult Coliform Agar was suspended in 1 litre of demineralized water by heating in a boiling water bath. The content was stirred regularly to assist dissolution (approximate 35 minutes). The filtration base which consists of filter and chamber was sterilized with methylated spirit. After that the filter was placed on the chamber. 100 ml water was filtered through the filter media. The filter media was removed with sterilized tweezers and placed on the Chromo Cult media in a petri-dish and incubated in an incubator for 24 hours at a temperature of 35 – 37 ^{o}C. After 24 hours, the water samples were inspected for differential growth and colour formation which signifies the presence of identifiable coliforms in the water samples: Salmon to red colonies-Total Coliform, and dark-blue to violet colonies- *E.Coli.* The formation of colour predicted the type of coliforms which were then counted as coliform forming unit per 100ml (cfu/100 ml). The results of the water quality test and analysis were compared with the Ghana

Standard Authority (GSA) and World Health Organization (WHO) acceptable water quality standard.

4. 11 ETHICAL CONSIDERATIONS

This study was subjected to official ethical considerations. As a result, the researcher ensured that all the ethical issues were observed before the data collection process was started. First and foremost, the researcher obtained a cover letter signed by the Doctoral Supervisor from the Department of Culture and Global Studies, Faculty of Humanities, Aalborg University. Copies of this cover letter were sent to the respondents in the study communities, as well as institutions, government departments and agencies. The goal was to ensure that the respondents consent was sought before they were recruited into the study to respond to the questionnaire administration and also participate in the in-depth interview and FGD. Finally, measures were also taken to ensure the protection of the respondents' confidentiality, the institutional and individual privacy.

4. 12 DATA PROCESSING AND TECHNIQUES OF ANALYSIS

A careful processing of data is critical for conducting a genuine analysis of the data collected and for producing accurate statistical results (Tabachnick and Fidell, 2007). Data processing, in this respect, covers a series of screening and processes that seek to address challenges mostly linked with missing data, presence of outliers, and non-normality which are vital especially when using the Statistical Product and Service Solutions (SPSS) software for data preparation and analysis (Gall, Borg and Gall, 1996). As part of the study, the researcher took into consideration these issues during the data preparation and analysis stage. In this study, qualitative data obtained from the field were coded and classified with the view to condense the data into smaller number of themes based on the level of analysis. Whilst, the quantitative data were analyzed into frequencies and charts through the use of computer data analysis software such as Statistical Package for Social Solution (SPSS, version 21). The use of the Statistical Package for Social Solutions (SPSS) was relevant because the technique did not only enhance the word processing and

data analysis, but also helped to facilitate the accurate pictorial responses for the analysis. Both qualitative and quantitative data were used through data triangulation for the purposes of analysis. The secondary data were used to complement the primary data for the analysis.

Analysis of data was done in two chapters (Chapter Six and Chapter Seven). Chapter six focused on the challenges of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. Chapter seven centered on the assessment of the views, perceptions and experiences of the users and service providers of the water and sanitation services delivery in rural and peri-urban communities in the Wa Municipality. The qualitative and quantitative nature of the analysis allowed the researcher to appreciate the perspectives, opinions, reactions and lived experiences of the beneficiaries (users of the service) and the service providers of water and sanitation services situations in the rural and peri-urban communities in the study area.

4.13 FIELD CHALLENGES

A number of challenges were encountered by the researcher during the fieldwork. First, the researcher faced a problem of accessibility to the study communities in the Wa Municipality. This was caused by the inability of the researcher to get access to an updated and comprehensive map of the Wa Municipality to identify the communities selected for the study.

Second, there were a number of occasions where the respondents failed to avail themselves as scheduled for the questionnaire administration and interview. This situation hampered the data collection process during the fieldwork.

Third, it was detected from the instruments that most of the responses to the questions from the respondents were generated on the basis of memory recall. Obviously, this constituted one of the key challenges in the sense that recall ability sometimes results in inaccurate answers.

Fourthly, some of the essential documents such as Water and Sanitation Framework[4] could not be released for the researcher by some of the institutions namely the Wa Municipal Assembly, Ghana Water Company Limited and Community Water and Sanitation Agency. The reason is that most of the officials in the institutions were not prepared to expose their institutions and portray their incompetence and inefficiencies in respect to water and sanitation services delivery to the communities in the study area.

Finally, the issue of language barrier was also a challenge for the researcher during the fieldwork. The point is that the researcher does not understand the local or native languages. In view of this, it was very difficult to communicate with respondents.

4.14 CIRCUMVENTING THE CHALLENGES OF THE STUDY

In the face of these field challenges, the research did not suffer significantly as to negate the objectives the researcher set out to achieve because the following measures were instituted to deal with the challenges.

First, in handling the problem associated with accessibility to the selected communities, the researcher and research assistants relied on the long-standing map provided by the Wa Municipality planning units to locate the selected communities during the fieldwork process.

Second, the problem of language barrier was also resolved by hiring the services of a community resident who assist the two assistant researchers to translate the questions from English Language into the respondents' local language (Walaa) to enable them understand the questions. This helped the respondents to provide the appropriate responses to the questions posed.

[4]The main elements of the Water and Sanitation Framework are; water quality testing, water safety risk assessment, water safety risk management, environmental and social surveillance, development of water safety plans for water systems, and capacity building for stakeholders. The standards set out for water quality parameters, methods for measuring and monitoring referred to in the Water and Sanitation Framework is that approved by the Ghana Standard Authority, and World Health Organizations.

Thirdly, regarding the problem of rescheduling of appointment time and date, the researcher adopted personal network systems with the respondents, especially the key informants through e-mails, phone calls and private visits to their offices. This motivated them to develop the trust in the researcher and consequently agree to grant the interview for the study.

Fourthly, the researcher also explained the goal of the research to the institutions and the household heads to understand that the research was purely for academic purposes. Upon these explanations and coupled with the introductory letters from the Doctoral Supervisor and the Wa Municipal Assembly, the respondents from the various institutions and agencies as well as the participants in the selected communities agreed to be recruited into the study.

4.15 SUMMARY OF THE CHAPTER

The chapter presented the research design and methodology of the study. First, the chapter focused on the research philosophy underpinning the study. Philosophically, the study aligned itself with the pragmatic paradigm in order to get the advantages of mixing both qualitative and quantitative research approaches. Further, the researcher also employed in-depth interviews, questionnaire survey, and focus group discussion to generate the data from the respondents who were mainly the stakeholders and the service users (beneficiaries of the service) in the water and sanitation sub-sector. In general, the researcher administered 354 questionnaires to the users of water and sanitation services, and 50 in-depth interviews were conducted with the stakeholders and other actors in the water and sanitation sub-sector. In addition, the researcher also relied on secondary data on decentralization of water and sanitation services for the documentary analysis of the study. These documents were obtained from Aalborg University Library in Denmark, Balme Library of the University of Ghana, Legon and Wa Municipal Assembly in Ghana. The next chapter focuses on the evaluation of the development of water and sanitation services in Ghana.

CHAPTER 5: EVALUATION OF THE DEVELOPMENT OF WATER AND SANITATION SERVICES IN GHANA

This chapter provides an assessment of water and sanitation situation during the colonial period, the post-colonial period and contemporary Ghana. Included in the chapter were the process of development of water resources and sanitation services in Ghana and the roles played by the stakeholders involved in water and sanitation projects, historical evolution of water supply services in the Wa Municipality, current trends of water services in the Wa Municipality and the appraisal of the sanitation situation in the Wa Municipality. The chapter is relevant to the study because it forms part of the basis upon which the analysis and discussions are undertaken. The chapter concludes with a summary.

5.1 OVERVIEW OF WATER RESOURCES DEVELOPMENT IN GHANA

In Ghana, the first water supply system started in Cape Coast in 1928. The water supply system was managed by the Water Supply Division of the Public Works Department through the directive of the Government. In 1957, the headquarters of the Water Supply Division was created in Kumasi. The Water Supply Division was operated under the Ministry of Works and Housing. However, in 1958, the Water Supply Division of the Public Works Department (PWD) was made an autonomous unit which managed, controlled and regulated the urban and rural water supply services in the country (Ministry of Works and Housing, 1998).

In 1959, Ghana was hit with severe water crisis which created a lot of challenges for households in the country. The severe water crisis had a number of implications on the health status of households and economic activities in the country. Being aware of the potential of safe and reliable water supply services to the improvement of economic activities and the well-being of the people, the Government of Ghana redoubled her efforts to improve universal access to

efficient, quality and sustainable water and sanitation services delivery in the country. As a result, a contract was signed between the World Health Organization (WHO) and the Government of Ghana to conduct research into the progress of water and sanitation services delivery in Ghana. The research outlined a number of measures to resolve the future occurrence of severe water crisis in the country. Included in the measures were construction of water supply and sewerage services in Accra and Tema to cover a 20 years period (1960-1980) and the creation of Ghana Water and Sewerage Corporation (GWSC).

In line with the recommendations from the World Health Organization and Government of Ghana, in 1965, Ghana Water and Sewerage Corporation (GWSC) was established. The corporation was mandated to supply water to rural and urban communities for domestic and industrial purposes. It was also mandated to outline rules to regulate and manage sewerage systems in the country. In addition, within the same period, the International drinking Water and Sanitation Decade 1980-1990[5], was also adopted by the Government of Ghana. The idea was to help improve universal access to efficient, quality and sustainable water supply and sanitation services in Ghana. In spite of the marked recognition the Government of Ghana attached to the water and sanitation services, (the level of water expansion, its usage as well as the management and control of the services) it did not solve the water and sanitation problem in Ghana. In view of this, by the end of the water decade, majority of people, especially those in the rural and peri-urban communities in Ghana had limited or no access to efficient, quality and sustainable water and sanitation services (Sarpong, 2008). Consequently, in the 1990s, there were a number of strategic transformations in the water and sanitation sub-sector in Ghana. First, small town water supply and sewerage services which were hitherto provided by Ghana Water and Sewerage Corporation (GWSC) were decentralized and handed to the District Assemblies. Also, the Environmental Protection Agency (EPA) was set up in 1994 to oversee operations and management of water and

[5] The United Nations General Assembly declared the Decade 1980-1990 as the International Drinking Water and Sanitation Decade. The aim of the Decade was to ensure that by the end of the Decade, nations are given the urgent attention to deliver water and sanitation services to their people.

sanitation services. The reasons for the policy orientation were three-fold; first, to provide greater choice of water and sanitation services to the users and encourage more responsible approach for financing water and sanitation services, second, to provide increased scope for private sector and non-governmental organizations' involvement in the implementation of rural water and sanitation project. The idea is that private sector involvement in water and sanitation sub-sector was likely to help minimise the operation costs, enhance management outputs, increase the financial resources as well as improvement of the productive efficiency and quality services delivery and third, to ensure that, water utilizations does not cause any destruction to the environment.

In view of the above, two commissions were created in 1997 through an Act (Act 522 of 1996) of Parliament to regulate water and sanitation sub-sector in the country. They included Public Utilities Regulatory Commission (PURC) and Water Resources Commission[6]. The next section focuses on the detailed discussion of the Public Utilities Regulatory Commission.

Public Utilities Regulatory Commission (PURC)

The Public Utility Regulatory Commission (PURC) is an autonomous regulatory body established in October 1997 through the Public Utility and Regulatory Commission Act 538 of 1997 to regulate water and electricity services to the end users. PURC performs a number of roles. These include the enactment of rules guiding tariffs for the utility services, conduct research to identify the nature of the economy and efficiency of public utilities, protection of interest of the end users and the providers of the services and monitoring quality standards of utility services. In addition, PURC also ensures that utility providers present copies of their schedule of activities at their offices for the general public. Also, it ensures that utility companies present a comprehensive Customer Charter to delineate the kind of services they provide, as well as the rights and obligations of the end users of the services. This charter is anticipated to serve as a parameter to measure the utility standards of the companies. The goal is to ensure that there are safe and efficient water supply services to

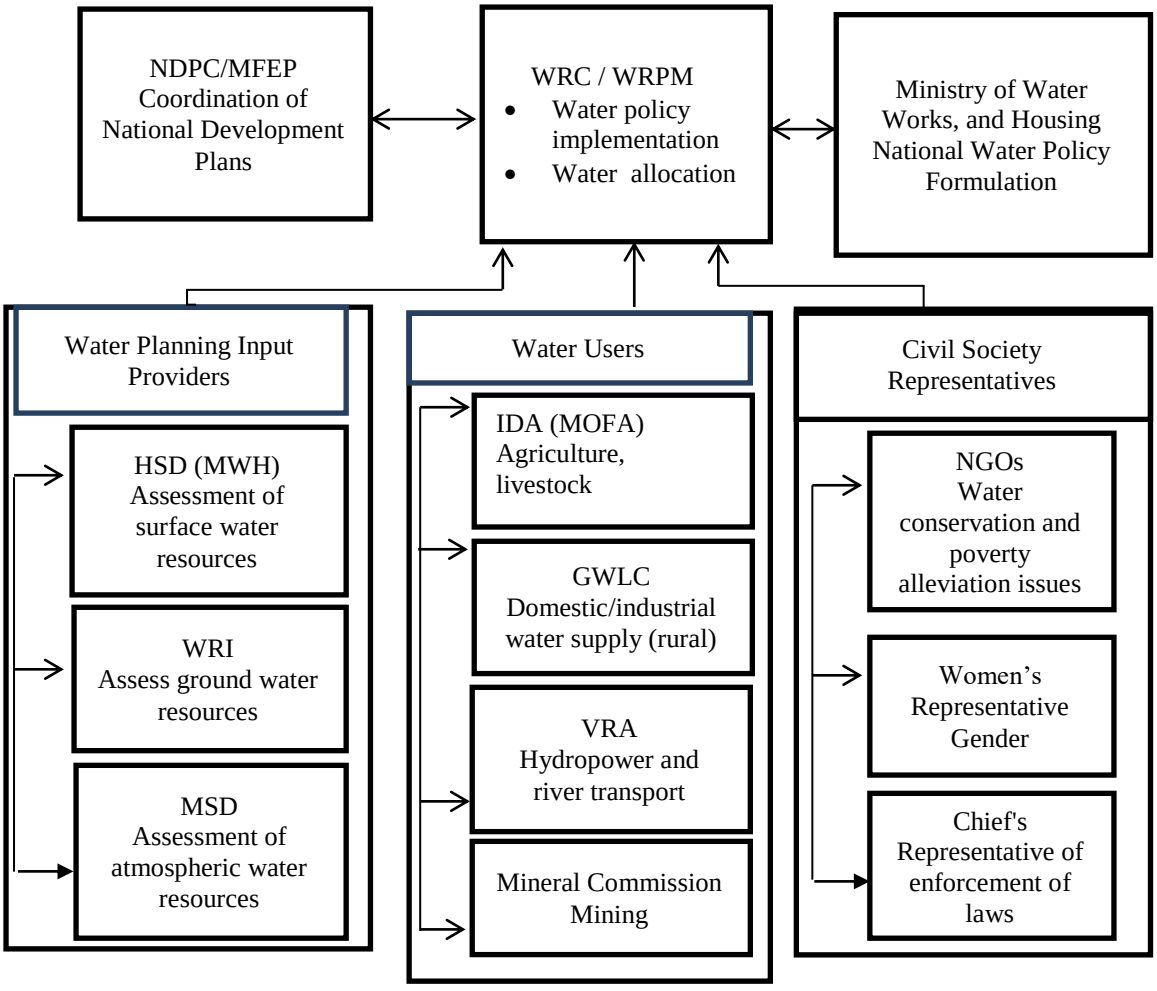
[6] Water Resources Commission was set up to resolve the diffuse nature of roles and authority in the water sector resources administration in Ghana.

the end users and also the beneficiaries pay realistic prices for the water services. PURC is restricted to urban water supply services only. It does not cover the small town and community water services delivery in the country.

Water Resources Commission

The Water Resources Commission was established through an Act of Parliament, Act 522 of 1996 to resolve the diffuse nature of roles and authority in the water resources management and administration in Ghana. Water Resource Commission (WRC) was made up of official representatives of key institutions involved with water resources delivery, utilizations and management in Ghana. These institutions are Hydrological Services, Water Supply Services Division of Ghana Water Company Limited, Irrigation Development Authority, Water Research Institute, Environmental Protection Agency, Forestry and Minerals Commission, Traditional leaders, NGOs and women groups. See Figure 4 for the institutional framework for integrated water resources management in Ghana.

Figure 4- Institutional framework for integrated water resources management in Ghana



Source: Water Resources Commission (2000)

Technically, the Act of Parliament, Act 522 of 1996 that established the Water Resources Commission mandated the Commission to regulate water resources. Included in the regulatory policy were the control and management of water abstraction and waste water discharge, offering advice to the Government on issues likely to have adverse effect on water resources delivery, utilization and management in Ghana (Water Aid Ghana, 2005), monitoring and assessing activities and programmes for the operation and maintenance of water resources in Ghana (Ministry of Works and Housing, 1998). The creation of the institutional framework for integrated water resources management in Ghana is very important due to the laudable role the institutions play in the water and sanitation sub-sector. Yet, community water and sanitation agency[7] was not part and parcel of the list of the institutions and agencies in the Commission. Although the reasons assigned by the Government were not clear, one of the compelling reasons worth noting is that CWSA was set up during the period that the Commission's activities and programmes were in progress, thus, it was not possible to integrate the CWSA into the institutional framework for integrated water resources management (Section 5.2 provides the detailed discussion of the evolution of the national community water and sanitation programme).

5.2 EVOLUTION OF THE NATIONAL COMMUNITY WATER AND SANITATION PROGRAMME

The preceding section focused on the brief review of the historical junctures which defined the perspectives of the development of water supply services in Ghana. In this section, emphasis is paid on the examination of the evolution of the national community water and sanitation programme. The section is very crucial in the study in that it helps to shape our understanding of the role of the national community water and sanitation programme in Ghana.

[7] Community Water and Sanitation Agency was established by an Act of Parliament, Act 564 of December, 1998, with the mandate to facilitate the provision of safe drinking water and related sanitation services to rural communities and small towns in Ghana.

The National Community Water and Sanitation Programme (NCWSP) was launched in 1994 after four years of stakeholder consultation in line with the Government of Ghana decentralization policy, which was enshrined in the country's 1992 Constitution, and enacted by the Local Government Act, 1993 (Act 462)[8]. In December, 1998, Community Water and Sanitation Agency was established by an Act of Parliament, Act 564. The mandate of the agency is to facilitate the provision of accessible, efficient, quality and sustainable water and related sanitation services to rural communities and small towns in Ghana. The Community Water and Sanitation Agency (CWSA) was established by an Act of Parliament, with a number of project by-laws. One of the laws is the payment of an initial five percent (5%) capital cost by the communities towards the construction of the project (Eguavoen, 2008). Apart from the above, other key components and principles of the NCWSP include the following:

i. Demand-responsive approach based programming, which seeks to provide community water and sanitation services only to the communities which express genuine demand for the services;
ii. Appropriate means of selecting the technology so that water and sanitation projects which are provided to the communities reflect the felt needs and aspirations of the people;
iii. Gender mainstreaming at all levels of water and sanitation services delivery to the beneficiary communities and small towns in Ghana;
iv. Community ownership and management of the water and sanitation services in the beneficiary communities and small towns; and

[8] The policy thrust of the decentralization of water and sanitation entails the shifting of the provision of water and sanitation services from the Government to the beneficiary communities, NGOs, Civil Society Organizations and private sector organizations to manage water and sanitation services in the rural communities and small towns to ensure an improvement in access, efficiency, quality and sustainability of water and sanitation services provided and to enhance and maximize health benefits by integrating water, sanitation and hygiene promotion.

v. Private and NGOs involvement in water and sanitation services delivery to communities and small towns (CWSA, 2004).

5.2.1 FUNCTIONS OF COMMUNITY WATER AND SANITATION AGENCY

As part of policy reforms, the Act of Parliament tasked the Water Resource Commission, Water Company Limited, the Community Water and Sanitation Agency and the Ministry of Water Works, Resources and Housing to be responsible for the budget allocation and policy options for water supply delivery in Ghana. In line with the policy, the Ghana Water Company is mandated to be in charge of the supply of water to the urban population on the one hand and the Community Water and Sanitation Agency is responsible for the water supply and sanitation services to rural communities and small towns on the other hand. In particular, the responsibilities of the community water and sanitation agency cover the following areas:

i. To help the District Assemblies in ensuring community involvement, especially women in designing, planning, construction, management and sustainability of safe water and sanitation services in the rural areas and small towns in Ghana;
ii. To devise policies and programmes for the efficient management of financial resources for the implementation of safe water and sanitation services delivery to the communities and small towns;
iii. To aid private sector and NGOs participation in the provision of safe drinking water supply and sanitation services to the communities and small towns;
iv. To strengthen the District Assemblies with technical assistance in the area of planning and implementation of water and sanitation project in the districts;
v. To create public awareness for the communities and small towns on the causes and effects of water borne and sanitation- related diseases in the communities;
vi. To collaborate with the Ministries of Local Government and Rural Development, Health and Education to provide

hygiene and sanitation promotion education in rural communities and small towns in Ghana;

vii. To work in partnership with other external donor agencies on water supply and sanitation sub-sector to deliver safe water and sanitation services to communities and small towns in Ghana; and

viii. Provide standards and guidelines regarding the safe water supply and sanitation services delivery in the rural communities and small towns (CWSA, 2004). The next section discusses the historical evolution of water supply services in the Wa Municipality.

5.3 HISTORICAL EVOLUTION OF WATER SUPPLY SERVICES IN THE WA MUNICIPALITY

The Canadian International Development Agency's involvement in the water sector of Ghana began in 1973 in the Upper Region of Ghana[9] (now Upper West and Upper East Regions). The water project was managed by the Ghana Water and Sewerage Corporation (GWSC) and the Canadian International Development Agency (CIDA) up till 1993 (Kendie, 2002). According to Kendie (2002), the Upper Region Water and Sanitation Project (URWSP) was instituted to achieve the following goals:

"*To improve the access and coverage of the households to the safe and reliable water supply services in order to reduce the frequency of guinea worm and water borne diseases; reduce the time required for water collection, thereby increasing rural productivity; support small-scale economic ventures such as dry season gardening and community forestry; and enhance rural life; thus reducing rural-urban migration, especially by young people" (Kendie, 2002).*

As indicated by Kendie (2002), the URWSP passed through various stages which included the technical stage of hand-pump installation through the operation and maintenance stages in ensuring the

[9] Upper region was one political administrative region. In 1983, the region was split into two regions namely; the Upper East region and Upper West region with the intention of the government to hasten the pace of development in the face of deprivation in Northern Ghana.

sustainability of the project. The overarching goal of water and sanitation project was to ensure that households' have access to efficient, quality and sustainable water supply services in the Upper Region of Ghana. However, in 1983, the Upper West Region was carved out of the Upper Region. This was in line with the government's plan to hasten the pace of accelerated development as a result of the deprivation of the region (Upper West Region, 1987). Further, in the period between 1973 to 1983, many of the households in the communities in the Upper West Region in general and the Wa Municipality in particular, were heavily reliant on hand dug wells and dams for their water needs for domestic uses (Upper West Region, 1987).

Realizing the effects of unsafe and unreliable water supply services on public health in general and economic productivity in particular, the Hydraulic Unit of the Public Works Department (PWD) began playing a role in water treatment and management in the region to help resolve the challenges facing dozens of households in accessing efficient, quality and sustainable water supply services in the region (ibid). As part of the activities to improve water supply systems in the Municipality, the Public Works Department drilled three (3) boreholes in the Municipality. These boreholes were mechanized to pump water to the water treatment tank which was located at the centre of the township (Wa District Assembly, 2000). Despite the laudable progress made in the water sub-sector in the Municipality, the demand for water supply services also increased profoundly, placing considerable pressures on the government and external supporting partners.

In response to this, the Canadian International Development Agency (CIDA) came to the aid to expand the water supply system in the Municipality. The reason is that the treatment tank which produces 40,000 gallons[10] a day was inadequate for the households. This situation puts a burden on the households in the Municipality because, as water supply services became more constrained, households were forced to pay higher bills for water from water vendors in the Municipality. Other households which could not pay for water from the vendors were forced to rely on unauthorized sources of water services including dams, wells, lakes, dug out and

[10] 3.79 litres is equal to 1 gallon.

streams for water supply services for households' uses. As a result, an improvement in water supply services was considered as an option to help minimize the distance travelled to the water point for water supply services. It also leads to improvements in the livelihoods of women and children by taking the burden of scavenging for water away from them (WHO and UNICEF, 2012). In addition, the Public Works Department took a bold step to facilitate the construction of six (6) stand pipes at the city center and consequently connected to the treatment tank to supply water to households of the communities in the Municipality.

It is worthy of note that, as the regional population increased to 438, 008 in 1984 (Upper West Region, 1987), demand for water supply infrastructure services increased in the region, as well as the Municipality. Recognizing the increase in demand, a concrete water treatment tank with a capacity of about one thousand, three hundred and twenty meter cube (1320 m3) was built to improve the water supply services for households in the Municipality. Apart from this, mechanized boreholes that supply water to the treatment plant were subsequently increased in the Municipality (Wa District Assembly, 2000). The objective was to help provide access to water supply to the entire population, while at the same time conserving the efficiency and sustainability of the project. It is worthwhile to note that, in spite of these efforts in ensuring an improvement in water supply services, little success has been achieved in the Municipality (Wa District Assembly, 2000) due to the institutional challenges facing the community water and sanitation sub-sector.

5.4 CURRENT TRENDS OF WATER SUPPLY SERVICES IN THE WA MUNICIPALITY

Wa Municipality is laid in the savannah high plains with an average height between 160m and 300m above sea level. Sources of water supply services in the Municipality include hand dug wells, boreholes fitted with hand pumps and rural/small towns piped systems. The other sources of safe water supply services in Wa Township (the Municipality capital city) are public tap/stand pipes, protected wells, and sachet water and tanker supply/vendor provide (CWSA, 2014). There are 139 boreholes in 58 communities in the Municipality. Out

of this figure, 114 boreholes are functional, whereas 25 of the boreholes are non-functional. In addition, there are 40 boreholes currently under construction as part of the 20,000 borehole project under the Government of Ghana's sustainable rural water and sanitation project, being sponsored by the International Development Association and the World Bank (CWSA, 2014).

Obviously, on the surface, the overall picture in terms of households' water supply services, in statistical terms look satisfactory. However, this is not the case. For example, report from the Municipal Assembly reveals that households' access to efficient, quality and sustainable water and sanitation services is still a problem in the Municipality. In view of this, during the dry season of the year, women and girls have to walk for 4 miles or more in order to collect water from wells, rivers, ponds and streams home for domestic uses (Wa Municipal Assembly, 2014).

Undeniably, although water is a critical requirement for all humans to survive, the evidence established from the preceding discussion had demonstrated that access to efficient, quality and sustainable water supply services was and continues to be a challenge to the households in the rural and peri-urban communities in the Municipality. A recent report has revealed that, there are about thirty-five percent (35%) of the 135, 638 population of the Municipality do not have coverage to improved water supply services (Ghana Statistical Service, 2011). This prevailing situation often forces women and children to resort to traditional and unauthorized sources of water supply services for domestic purposes, which stands to undermine the health status of the households through the exposure to water borne diseases including; cholera, typhoid, amoebic, bacillary, dysentery, diarrhoea, malaria, scabies, trachoma and yellow fever. The result is horrifying toll in death in the households that particularly children. In addition, this development also tends to have negative effects on local/micro economy because residents, especially farmers become unproductive as a result of illness.

5.5 APPRAISAL OF THE SANITATION SITUATION IN THE WA MUNICIPALITY

On the sanitation situation, analysis of current trends reveals that open dumping is the main method of refuse disposal for households in the communities in the Municipality. In addition, there were few refuse disposal dumps but these were found mainly in urban settlements. Solid waste is also collected by Zoomlion Services Ghana Limited and Municipal Waste Department and transported to the dumpsites. In addition, some of the households in the communities bury their solid waste near their settlements (Wa Municipal Assembly, 2014). Besides, there are 5 main types of toilet facilities which were identified in the Wa Municipality. These included water closet, public toilets, Kumasi Ventilated Improved Pit (KVIP), private latrines/toilets and the pit or pan (Wa Municipal Assembly, 2014). On a whole, there are about sixty -five percent (65%) of the population who do not have access to the improved private sanitation facilities in the Wa Municipality (Ghana Statistical Service, 2011). Consequently, these residents resort to open defecation on farm fringes, dumpsites, bushes around their households in the communities (Wa Municipal Assembly, 2014). The deaths, suffering and financial losses caused by sanitation-related diseases in the study communities require an urgent promotion of sanitation and hygiene education at all levels in the study communities in the Municipality.

5.6 SUMMARY OF THE CHAPTER

The Ghana Water and Sewerage Corporation (GWSC) had been responsible for urban and rural water supply since 1965. Throughout these periods, the country experienced low coverage of water supply and sanitation services in the rural communities and small towns. Although, GWSC had made some progress, it was not able to perform its role effectively to improve water and sanitation services delivery to the people due to the poor record keeping leading to data insecurity, over centralisation of authority at the centre, ministerial control over the recruitment of staff, control over setting of tariffs,

non-payment of tariffs by the beneficiary communities and inefficient operational processes.

As a sequel to the above, in the 1990's, liberalization and decentralization of roles in the water sub-sector gained momentum in Ghana, consequently, the Government of Ghana started a review process on water and sanitation sub-sector in order to meet the rapidly changing water and sanitation situations in the country and on the international scene. This policy reform led to creation of the Community Water and Sanitation Division (CWSD), a semi-autonomous unit under the then GWSC to manage the rural water and sanitation services delivery in Ghana. The institution was later changed into community water and sanitation agency; which focuses on community participation in project initiation, implementation, management and control (Fust, 2006).

The emphasis on community participation in water and sanitation projects was meant to resolve any gap that might be existed between the people and planners based on their different views and experiences of the households needs. It was also one of the ways by which national projects were evaluated for support by external aid agencies. Further, it was also a strategy which could be used to help improve sustainability of the projects due to increased user commitment. Finally, it served as efficient learning approach for better project designs in the future. The next chapter focuses on the challenges of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality.

CHAPTER 6: CHALLENGES OF DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY IN THE RURAL AND PERI-URBAN COMMUNITIES IN THE WA MUNICIPALITY

The previous chapter focused on the evaluation of the development of water and sanitation services in Ghana. In this chapter, the discussions are centered on the challenges of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. The first section of the chapter focuses on the demographic information of the respondents. The second section of the chapter examines the challenges facing decentralization of water and sanitation services delivery in the rural and peri-urban communities in the study area. The purpose of this chapter is two-fold. First, the chapter helps to shape the researcher's knowledge about the importance of the demographic information of the respondents in the management and use of water supply and sanitation services. Second, the chapter also helps the researcher to develop a deeper insight into the challenges facing decentralization of water and sanitation services and their effects on water and sanitation services delivery in the rural and peri-urban communities in the study area. The chapter concludes with a summary.

6.1 DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

The demographic information elicited from the respondents was ethnicity, size of the households, religious affiliations, educational level and age of the respondents. This demographic information of the respondents is discussed next.

6.1.0 ETHNICITY OF THE RESPONDENTS

One of the demographic information examined in the study was the ethnicity of the respondents. The details of the distribution of ethnic backgrounds of the respondents are presented in Table 7.

Table 7Ethnic Backgrounds of respondents in percentage distribution

Ethnicity	Frequency	Percent
Dagao	67	18.9
Lobi	5	1.4
Wala	272	76.8
Hausa	2	0.6
Sissala	8	2.2
Total	**354**	**100.0**

Source: Fieldwork, 2015.

As depicted in Table 7, Wala, the major ethnic group in the Wa Municipality, had the highest percentage of respondents in the study (76.8%). The rest were Dagao (18.9%), Lobi (1.4%), Hausa (0.6%) and Sissala (2.2%). It should be noted that the survey does not hypothesize a direct relationship between ethnicity and the usage of water and sanitation services. Nevertheless, it is seen that the various ethnic groups in the Wa Municipality share quite a lot of cultural similarities. As a result, the influence of culture on water use and sanitation services is likely to be homogeneous among all the ethnic groups in the study communities in the Municipality.

6.1.1 SIZE OF THE HOUSEHOLDS OF THE RESPONDENTS

Household, according to the author's operational definition, refers to the people occupying the same compound and being catered for as a single unit. Household is a unit of analysis for market demand studies because it is the main consumption unit for many goods and services on the market. The examination of the size of households of the respondents was crucial in that it provided the relevant data to assess the respondents' attitudes and perceptions towards the use and management of water supply and sanitation services in the communities. The details of the results are presented in Table 8.

Table 8 Percentages distribution of the size of the households of the respondents

Household size	Frequency	Percent
1- 3	45	12.7
4- 6	72	20.3
7 and above	230	65.0
None	7	2.0
Total	354	100.0

Source: Fieldwork, 2015.

As shown in Table 8, out of the total of 354 respondents, 65.0% of the respondents had a household size of 7 and above, whereas 12.7% of the respondents had a household size of 1-3. In addition, 20.3% of the respondents also had a household size of 4-6. Only 2.0% did not have number of people in the household. It can be interpreted, however that the issue of the large size of households is still significant in traditional Ghanaian cultural setting despite the modernization and erosion of the extended family system. In the Ghanaian traditional setting, married people prefer to have large family size, because large sizes of the family as used as benchmarks to assess how responsible or otherwise the individual is, and also serving as indication of how prestigious one's family is. It provides social security in old age, and also serves as a source of labour on farmlands. As part of the discussion, the issue of the size of the households of the respondents was further explored during the focus group discussion. A participant who lives in Piisi stated:

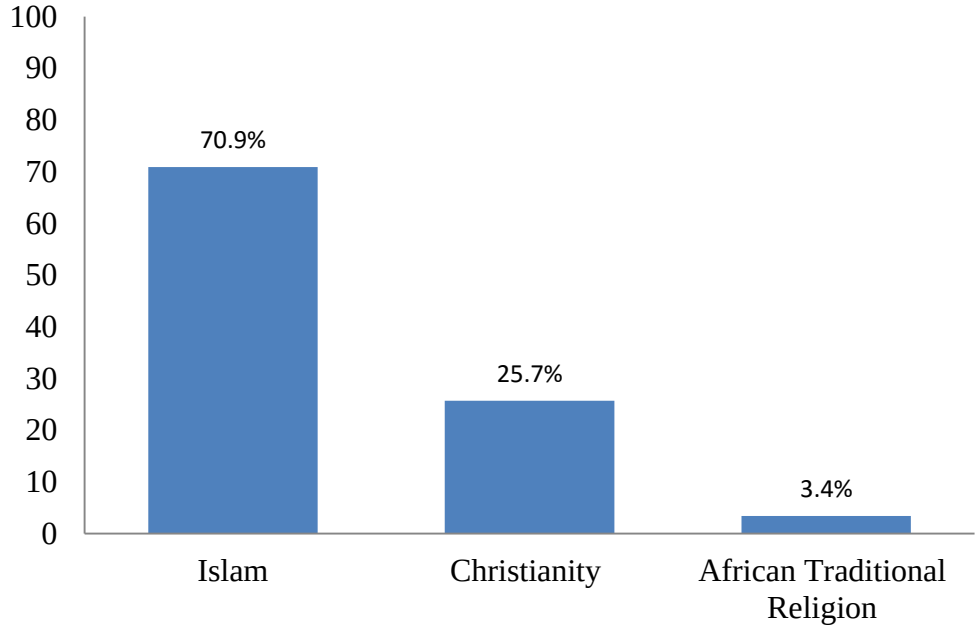
"*I always feel happy that I'm married with a large family size; because this was my top priority, primary objective, and greatest ambition after my Senior High School (SHS) education. This is because, as a Ghanaian woman, a large size of the family is important in my marriage" (Fieldwork, 2015).*

From the responses, it can be interpreted that there is a strong relationship between the large size of the households and the use and management of water supply and sanitation services. This is because as the size of the households increased, the consumption and production activities in the household units also increased. In view of this, it is therefore concluded that with the large size of the family, the demand for water and sanitation services delivery on a sustainable

bases will increase profoundly, thereby placing substantial pressure on the use and management of water and sanitation services in the household units in the study communities.

6.1.2 RELIGIOUS AFFILIATIONS OF THE RESPONDENTS

Another important variable relevant to this study was the religious affiliations of the respondents. This is very important because it helps the researcher to understand the relationship between the religious affiliations and the management and use of water and sanitation services delivery in the study communities. Figure 5 presents a summary of the results.



Source: Fieldwork, 2015.
Figure 5: Religious affiliation of the respondents

As shown in Figure 5, there are three main religions dominant in the study communities. These were Islam, Christianity (consists of Catholics Protestants, Pentecostal/Charismatic, and other denominations) and Africa Traditional Religion. Out of 354 valid responses, the dominant religion of the respondents was Islam (70.9%), whilst Christianity and African Traditional Religion (ATR)

represented 25.7% and 3.4% respectively. The study further found that, out of the total number of 70.9% of respondents who practised Islam, females who practiced Islam represented 36.7%, whilst males represented 34.2% respectively. It was observed that out of the 6 of the 10 communities studied, only men were represented in the community water and sanitation boards, which took decisions on the management and use of water and sanitation services delivery. Only 4 of the communities had women representation on the community water and sanitation boards. Yet, the involvement of women in designing, planning and construction of water and sanitation programmes is one of the requirements of the projects. This is because women are the most often users, providers and managers of domestic water and are responsible for household sanitation and hygiene management.

Confirming the findings, one of the Muslim women argued as follows:

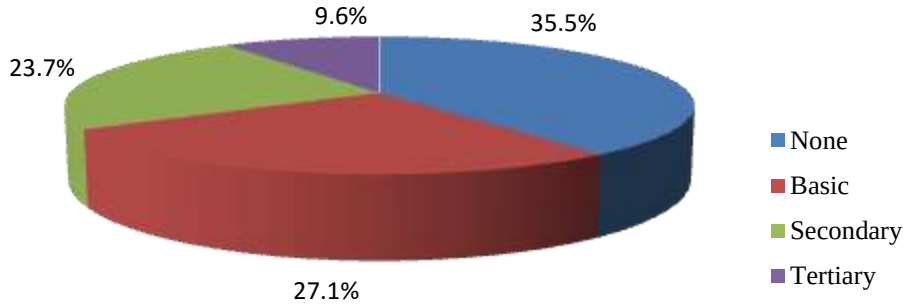
"Apparently, as I know, there is gender approach to water and sanitation project, because women are most often users, providers and managers of community water and households hygiene. Yet, in this community [Biihee], women are neither consulted nor fully involved in both the planning and designing phases of water supply and sanitation programmes in the community, because Islam allows us to play a subordinate role to our men counterparts. Thus, till date, the role of women has been focused primarily on providing and using water at the household and community levels" (Fieldwork, 2015).

From the responses, it can be argued that the gender approach in decentralized water and sanitation services delivery implies that both women and men must be involved in the designing, planning, implementation, monitoring and evaluation of the projects because women play major significant roles such as decision-makers, planners and managers of water and sanitation services. However, religion has often times prescribed practices for adherents to follow and some of these borders on decision making at the household and the community levels. More specifically, per the Islamic religious practice, women can make decisions that pertain to their roles as care givers in the home. By role definition, women control affairs in the culinary area and home maintenance. Women are not key players in the decision-making structure because they have restricted access

when it comes to making important household and community decisions. In this case, although women were found to be more users of domestic water and are in charge of the promotion of sanitation and household hygiene in the household units in some of the study communities such as Biihee, they were not fully involved in the designing, planning, implementation, monitoring and evaluation of the projects. This, according to the findings affected the use and proper management of the facilities in the study communities. This finding is consistent with that of Gleick (2000) and Fust (2006) work. According to the authors, the failure associated with the sustainability of decentralized water supply and sanitation projects in Africa arises due to the absence of women's participation in the planning and management of water and sanitation services delivery.

6.1.3 EDUCATIONAL LEVEL OF THE RESPONDENTS

In this study, the operational definition of education is given as the process of giving training to people so that they gain knowledge and skills. This means that the level of education one attains is necessary in life to equip him with knowledge to make informed decisions about depicting good behaviours in the society. To begin with, apart from ethnicity and religious affiliations of the respondents, another important variable examined was the nexus that existed between one's level of education and the use of water and sanitation services at the household levels. Figure 6 presents a summary of results.



Source: Fieldwork, 2015

Figure 6 Educational levels of respondents

As Figure 6 shows, 39.5% of the respondents did not have basic level of education (Junior High School or Middle School), whereas 27.1% of the respondents had basic level of education. Again, 23.7% had secondary education, while 9.6% had tertiary education. From the responses, it was found that the relatively low level of education of the majority of the residents in the study communities stands out as one of the features and indications of their poor attitudes towards the management and use of water and sanitation services in household units. This issue was further elaborated in the focus group discussions. One of the participants stated:

"Our parents did not send us to school; even those who had the opportunity to enrol could not further the education after the basic level. Consequently, we do not have higher education. Due to that, we do not value the importance of management of water resources and sanitation services. For instance, at the household units, we throw solid waste materials anywhere, defecate in an open field, and also do not clean the surroundings where the boreholes are constructed for the community" (Fieldwork, 2015).

The response above indicates that the respondents in the study communities had little or no education. As a result, it had negatively affected their attitudes towards the management and use of water supply services, as well as towards hygiene education and sanitation practices. In this case, it can be argued that behaviours are learned in

one's most influential learning environment such as home or school. In view of this, both the home and school environments are the necessary conduits for individuals (children or adults) to learn positive behaviour in the society.

From the responses, it can be further concluded that children and adults from household units headed by uneducated parents may have found it difficult to learn the right behaviours towards proper use and management of water services, hygiene and sanitation practices. This means that the higher the parents level of education, the likelihood that the households will appreciate the proper use and management of water services, hygiene and sanitation practices. This finding reinforces the conclusions drawn by IRC (2001) that good sanitation behaviour and practices are dictated by the way people act in general; more specifically, in relation to the state or condition in which people live. Thus, good sanitation behavioural practices usually start from the personal level to the household units, and then end at the community level.

6.1.4 HOUSEHOLDS LEVEL OF INCOME

To elicit information on this theme, the respondents were asked about their total monthly income. The study observed that there were 57.9% of the respondents who did not generate income in a month. Only 13.8% reported that they received between 100.00-200.00 Ghana Cedis ($26.3- $52.6)[11] monthly, while 1.1% earned between 1001.00 and above ($263.4 and above). The greater proportion of respondents who received income in a month mostly engaged in formal work such as teaching in their communities.

Corresponding to the findings, it was revealed that the low level of income of the respondents had critical implications on their attitude towards management and use of water and sanitation services in the household units. For instance, empirical data from the field pointed out that the low income of the household units had influence on the attitude and ability of the users of the services towards payment of tariffs.

This same issue was explored during the focus group discussions. One of the participants succinctly argued as follows:

[11] Exchange rate at the time of the data collection was Ghc 3.8:US$1

"We do not have higher education that can give us good jobs to earn higher income, so we are living in the subsistence economy. The financial returns we generate from these kinds of jobs are insufficient to take care of the households. For this reason, payment of tariffs for water supply and sanitation services sometimes becomes a challenge to many of the households in this community" (Fieldwork, 2015).

This response confirmed earlier findings. This is not surprising, because the sound economic background of a household is a critical variable that influences the family's attitude towards community development programmes. The point is that, households with low income status are less likely to involve themselves in community development issues, because people with low income status feel helpless in terms of changing processes that affect their lives. In addition, the issue of the monthly income of the respondents was further explored during the interview with the Municipal Assembly member from one of the study communities [Piisi]. The aim was to solicit his views on the willingness to pay for water and sanitation services. This is what he had to say:

"We do not have education, so we do not have good jobs to do in the country. This is not surprising because most of the graduate students in this community are unemployed after graduation, so, if we even get the chance to go to school and graduate, it would not be possible to get job easily in the country. As, it stands now, our willingness to pay for water and sanitation services, however, is dependent on the actual and perceived benefits the household gets from water and sanitation services delivery in the community" (Fieldwork, 2015).

An interview with the Municipal Assembly Member reinforced the preceding response to explaining the households' poor attitude and behaviour towards the payment of tariffs for water and sanitation services. Certainly, what seemed clear and interesting from the interview was that the willingness of the households in Piisi to pay for water and sanitation services was also influenced by satisfaction with present levels of services delivered to them. This includes convenience, reliability and quality service. This finding contrasts starkly with Isham & Kähkönen's (1999) work. According to the authors, the direct involvement and willingness of households to pay for higher tariffs for the improvement for water supply services in Central Java Water Projects was contributed by the substantial

improvements in the current services which were delivered to the community.

6.1.5 AGE OF RESPONDENTS

Apart from ethnicity, religious affiliations, education and size of households, the researcher also looked at the age of the respondents. The examination of the age of the respondents was necessary because of its implications for the use and management of water supply services, as well as sanitation practices in the households in the study communities. Table 9 presents a detailed summary of the results.

Table 9 Age distribution of respondents

Responses	Frequencies	Percent
18-38	193	54.5
39-60	72	20.1
61+	90	25.4
Total	354	100.0

Source: Fieldwork, 2015.

As depicted in Table 9, out of the total respondents of 354, 54.5% were within the age range of 18-38, whereas, 20.1% were within the age range of 39-60. Only 25.4% were within the age range of 60+. The ages of the respondents have critical implications on the use and management of water supply services and sanitation practices. For instance, as respondents age in years, so is the likelihood of their willingness to use and manage water supply services and sanitation practices. This could be explained by the fact that as one ages, he or she is exposed to a number of social practices including the proper use and management of water supply services, as well as hygiene and sanitation practices at the household units. This implies that as one ages, so does his or her experiences of social practices. That is, the lower a person's age, the lesser the person’s experience in social practices in the society. This assertion may be true because the age of the person has a strong relationship with the person's experience in life.

From the responses, it can be interpreted that the age of the respondents is important to the use and management of water supply

services and maintenance of environmental hygiene at the household units. For example, in Sagu, the study observed that the aged in the households were more interested in improving hygienic practices at the water point sources, as well as the maintenance of a good drainage system for waste water. In view of this, it can be concluded that maturity plays an important role in the management and use of water supply services as well as in the promotion of sanitation and hygiene practices at the household units.

6.2 CHALLENGES OF THE DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY IN THE RURAL AND PERI-URBAN COMMUNITIES IN THE WA MUNICIPALITY

This section discusses the challenges of the decentralization of water and sanitation services delivery in the study communities. Issues that engaged the attention of the researcher were: legislative framework, administrative framework, procedure for selecting the beneficiary communities, financial resources to fund the projects, monitoring and evaluation of activities of NGOs, coordination and collaboration of the external donor agencies, power struggle between the actors at the local level and the politics of water and sanitation services delivery. The discussions are elaborated in the subsequent section.

6.2.1 LEGISLATIVE FRAMEWORK

In Ghana, the Community Water and Sanitation Agency's Regulations of 1998, Section 18, Act, 564, acting upon the advice of its Board of Directors, empowers District Assemblies to pass a legislative framework to regulate water and sanitation services delivery in rural communities and small towns through the active participation of the communities, particularly the women, in designing, planning, construction and management of projects (Government of Ghana, 1998). In pursuit of this course, Act 564, Section 18 of the regulations mandates the District Assemblies to set regulations focused on the technical standards and acceptable code of practice for stakeholders in the water and sanitation sub-sector. This includes the inspection of the projects materials, setting of tariffs, and the provision of financial administration management, supervision of the formation of water and sanitation management team. The intention behind this policy arrangement is to ensure that households

and individuals do not only become aware of the legislative framework guiding the management and use of the services, but also, that they are educated to manage and maintain the facilities in their communities in order to ensure that the facilities are not misused (CWSA, 2008).

As part of the discussion, the researcher sought to solicit from the respondents whether they were aware of the legislative framework that regulates water and sanitation services delivery. Table 10 presents the detailed summary of results.

Table 10 Awareness of the legislative framework that regulates water and sanitation services delivery

Response	**Frequency**	**Percent**
Yes	180	50.8
No	111	31.4
Don't know	63	17.8
Total	354	100.0

Source: Fieldwork, 2015.

As shown in Table 10, a majority (50.8%) of the respondents noted that they were aware of some legislative frameworks that regulate water supply and sanitation services delivery. Only 31.4% said they were unaware of any legislative framework that regulates water and sanitation services delivery, whilst 17.8% said they did not know. From the responses, it was found that, although there was a high awareness among the residents in the legislations that regulate water and sanitation services delivery in the communities, the residents continue to exhibit bad behavioural attitude towards the usage of the water systems (especially the boreholes) and the maintenance of a high standard of hygiene and sanitation practices because the by-laws governing water and sanitation services delivery lacked strict enforcement at the community levels.

From the study, it was found that this problem was persisted due to the failure of the District Water and Sanitation Team to supervise the use and management of the facilities. This is because under the decentralization system, the District Water and Sanitation Team had not been integrated into the formal decentralized structures; thus, the

District Water and Sanitation Team is not perceived as part and parcel of a decentralized unit although they are the employees of the local government system. The lapses in the Ghana's decentralization system had led to employment inequality at the local government level though some of the members in the District Water and Sanitation Team have equal qualification as other colleagues who had been integrated into the decentralized system.

The data from the field further revealed that the apparent imbalances in employment system had led to the low level of commitment and motivation of the District Water and Sanitation Team to carry out its roles at the local units to ensure that by-laws guiding the use and management of water and sanitation services are adhered to in these communities. This is critical because the success of the community water and sanitation services delivery depends on a number of issues. First, the quality of drinking water by the people should fall within the national drinking water standards and secondly, the need for frequent education on sanitation and hygienic practices should be emphasized. The implementation of such standards must be accompanied by practical and feasible surveillance, and with the provisions and means to take remedial action when required. This finding is consistent with that of Gleick (2000) and Fust (2006) in explaining the failure of decentralized programmes in Africa. According to the authors, the decentralization of public goods and services (water and sanitation services delivery) has not achieved success in many developing countries due the inefficient legislations regulating the use and management of the services.

6.2.2 ADMINISTRATIVE FRAMEWORK

The success of the policy thrust of the community water and sanitation project also depends on the effective administrative framework. Thus, the Government of Ghana, in line with the community water and sanitation agency's regulations of 1998, Section 18, Act, 564 has set up a range of administrative acts to manage and control community water and sanitation services delivery in the rural communities and small towns in Ghana. According to the administrative framework, the management and control of the community water and sanitation project is done through its national and regional offices. Further, the real execution of the community

water and sanitation project is carried out by the District Assemblies through the District Water and Sanitation Team (DWST). The District Assembly Water and Sanitation Team is multidisciplinary and comprises the seconded staff from three (3) decentralized departments namely: Works Department (Technician Engineers), Community Development (Community Development Officer) and Environmental Health and Sanitation Unit (Environmental Health Officer).

In addition, it is also mandatory for the Assembly to monitor the community water and sanitation project regularly to ensure that the water and sanitation project meets the prescribed standards and guidelines for safe water supply and related sanitation services in rural and small towns (CWSA, 2008). In this study, the researcher sought to examine the role of the District Water and Sanitation Team in respect to monitoring of the community water project in the selected communities in the study area.

Interviews with the Municipal Assembly member revealed that the District Water and Sanitation Team is anticipated to conduct frequent checks of water supplies in the selected rural and peri-urban communities in the study area. The team is also mandated to check and ensure that the facilities are in good shape to perform their services effectively to the people. However, empirical data revealed that quality water control tests were not carried out regularly in water laboratories to monitor the water quality of the selected rural and peri-urban communities in the study area. It was also established that the District Water and Sanitation Team of the Municipal Assembly mostly made recommendations for water bacteriological analysis of samples in water laboratories whenever complaints of water quality reached the office.

Issues on monitoring of water systems by the District Water and Sanitation Team of the Municipal Assembly were further explored in the focus group discussions. One of the respondents remarked:

"The District Water and Sanitation Team does not frequently visit the community to check on the quality control standards of the water supplies. Worst of it all, there are no small test laboratories services in the communities for testing the water quality" (Fieldwork, 2015).

The response indicates that the District Water and Sanitation Team of the Municipal Assembly did not place a high premium on water

quality control measures such as inspection of the water site and frequent testing of water quality to ensure that water supply services are of good quality for domestic uses.

In addition, the study also explored the issue of monitoring of sanitation services in the study communities. Sanitation is defined as the level of hygiene and cleanliness within one's surroundings, the access of the people to basic services such as potable water, clean toilet facilities, clean surroundings, proper waste disposal facilities and good drainage facilities (WHO, 2005; Government of Ghana, 2003). Sanitation management is closely linked to quality water supply services. In view of this, the use and management of sanitation facilities is also part of the roles and responsibilities of the District Water and Sanitation Team. Thus, the Administrative Act of the CWSA mandates the District Water and Sanitation Team to provide guidance for the communities on environmental sanitation sub-sector planning, rules and regulations regulating sanitation, planning and assisting in the areas of human resource development, provision of technical and training assistance to the service providers, coordinating and disseminating the results of research in the field of environmental sanitation to the assembly and other stakeholders in the community water and sanitation sub-sector. Based on that, it is argued that the District Water and Sanitation Team is one of the key actors in community water and sanitation sub-sector in Ghana.

In this study, the researcher probed further to get in-depth knowledge about the challenges faced by the District Water and Sanitation Team in terms of the management of sanitation and hygienic practices in the study communities.

The empirical data gathered from the field revealed that the District Water and Sanitation Team faced a number of challenges. Some of the challenges were: the lack of collaboration between the District Water and Sanitation Team and other allied agencies such as the Waste Management Department, Town and Country Planning Department, the Health Directorate and Community Water and Sanitation Agency.

From the responses, it was found that these departments and agencies did not see themselves as working together towards achieving a common goal such as improving access to efficient, quality and sustainable water and sanitation services delivery. They rather see

their activities as independent of the other departments and agencies. For instance, the Ghana Health Services sees itself as health service provider and has nothing to do with the Waste Management Services Department. This was clearly shown by the Director of Health Service of the Municipal Health Directorate during the fieldwork, as he refused to answer certain questions posed to him on grounds that the questions could be appropriately answered by the Environmental Health Officer of the Municipal Assembly. The lack of inter-agency coordination and collaboration among the departments and agencies was caused by the poor administrative frameworks guiding the management and control of the water and sanitation sub-sector in general. These findings contradict the National Sanitation Policy enacted by an Act of Parliament in 1999, which states that the National Sanitation Policy was focused on coordination and collaboration from both the public and the private sectors in the water and sanitation sub-sector to help in the promotion and sustainability of sanitation and environmental hygiene in the country by the year 2020.

6.2.3 PROCEDURE FOR SELECTING THE BENEFICIARY COMMUNITIES

The implementation of community water and sanitation projects is carried out at the district level. This is in consonance with Act 564 of December, 1998 of the Community Water and Sanitation Agency. Act 564 stipulates that the District Assemblies, in collaboration with Water and Sanitation Team, are responsible for selecting the beneficiary communities. Specifically, two principles are considered in the selection of the beneficiary communities for the water and sanitation project. First, the communities' demand for water and sanitation services constitutes thirty percent (30%). The demand factor is meant to ensure that the community is willing to initiate a water and sanitation project. Technically, communities are expected to make a request of water, select location and technology type, and pay upfront deposits of five percent (5%) towards capital costs (Government of Ghana, 2003).

Second, the communities' need for water and sanitation services also comprises seventy percent (70%). In reality, the need factor is meant

to address the lack of access to efficient, quality and sustainable water supply and sanitation services and its related diseases (ibid). This provision is critical because it helps to improve sustainability of the projects through increased beneficiary commitment. It also helps to address any inconsistencies that may exist due to their diverse views of community needs. To begin with, the researcher enquired from the respondents if they were aware of the requirements used for the selection of the beneficiary communities for water and sanitation projects.

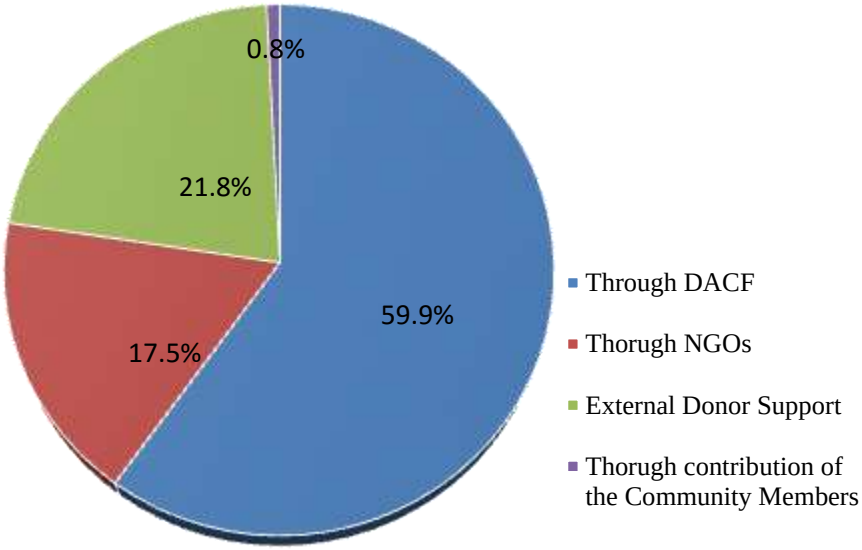
The data from the field revealed that the processes involved in the selection of the beneficiary communities under the decentralized water and sanitation projects did not involve the beneficiaries' communities. Nonetheless, the success or failure of water and sanitation project within the community is greatly dependent on the community involvement. Preferably, for a genuine community-based project (water and sanitation services delivery), the local people must be given the chance to propose solutions to their household water and sanitation problem. In addition, in terms of the technology used, it is critical that the beneficiaries appreciate how it operates, so that the people can acquire the technical knowledge and capacity to maintain and repair the facilities in events that they break down.

From the findings, it can be argued that this problem is caused by corruption and nepotism in the Municipality. According to the field report, some of the developed communities offered gifts to the officials in the District Water and Sanitation Team to influence them for projects. For example, the analysis of the field data documented that Nakori had two toilet facilities; besides, the community had been earmarked for another government's funded toilet project. Meanwhile, at Biihee, the old public toilet facilities had not been innovated for the community; consequently, the people were still practising open defecation in the bushes around their settlements, dumpsites and farms. In view of the above, it can be interpreted that although decentralized water and sanitation projects was expected to lead to equal allocation of facilities to the communities, rather the communities were still experienced unequal level of treatment in terms of allocation of the water and sanitation facilities in the study area. This is because some of the communities offered gifts to the officials in the District Water and Sanitation Team to influence them

to allocate more facilities to them at the detriment of the other communities in the study area. This finding corroborates that of Prud'homme (1995) work. According to him, decentralization system provides different levels of treatment for citizens in the same country. In his opinion, under decentralization, districts with higher per capita income have the opportunity to get higher access to the basic public goods and services than those districts with low per capita income, although, the residents of the districts with the higher per capita income are not likely to pay higher taxes for the provision of the basic local goods and services.

6.2.4 FINANCIAL RESOURCES TO FUND THE PROJECTS

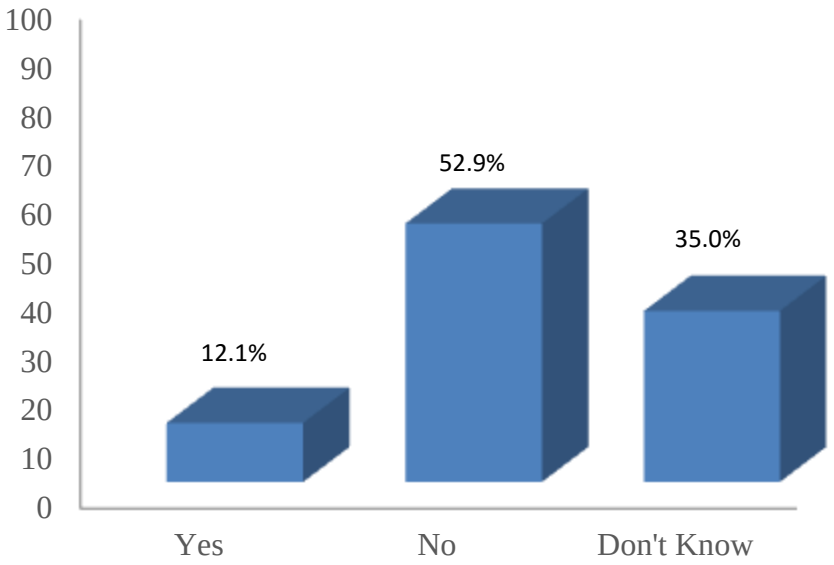
Adequate provision of financial resources is critical in the decentralized water and sanitation projects, taking into account the costs and revenues of the projects. In a decentralized water and sanitation projects, the costs the user communities have to meet before they are given the projects include the payment of the five percent (5%) of the capital costs of the project. This amount must be paid before the projects get started, and the amortization of the remaining capital cost, debt service, and operation and maintenance cost must also be paid (Fust, 2006). In addition, the organization which is supporting the project also need to finance the costs of the machines, the skilled labour to drill the boreholes, the installation of the pump, and the construction of the apron and drainage systems (ibid). In this study, the survey was administered to examine the sources of funding water supply and sanitation project in the study communities in the Wa Municipality. Figure 7 presents a pie chart which gives further details about the distribution of the responses.



Source: Fieldwork, 2015.

Figure 7 Sources of financing water supply and sanitation services

As Figure 7 depicts, out of the 354 responses received from the respondents, 59.9% indicated that water and sanitation project was financed by the Wa Municipal Assembly through the Government of Ghana central transfers such as the DACF, whereas 17.5%, 21.8%, and 0.8% maintained that the project was financed through NGOs assistance, external donor assistance and contributions of community members respectively. Based on the findings, the researcher asked a follow-up question to determine whether the DACF transfers were adequate to provide development projects including water supply and sanitation services in the rural and peri-urban communities in the Wa Municipality. The results are provided in detail in the bar chart in Figure 8.



Source: Fieldwork, 2015.

Figure 8 DACF transfers and the provision of water supply and sanitation services

As Figure 8 shows, out of the 354 responses from the field, 52.9% of the respondents said the DACF had not been adequate in promoting developmental projects including water and sanitation projects, and 12.1% said the DACF had been adequate to finance water and sanitation projects, while 35.0% said that they did not have knowledge of it.

From the responses, it emerged that the District Assembly Common Fund (DACF) constituted the largest proportion (59.9%) of the sources of financing the water and sanitation projects in the study communities in the study area. The study further observed that although the DACF constitutes the main source of revenue for the decentralized water and sanitation project, the timing for the release of the central government transfer of such funds to support the development project such as rural water and sanitation is not only poor, but also the funds are insufficient to carry out the water and sanitation projects. The point is that the DACF is not only meant for

the provision of water and sanitation services; rather, it has multiple uses at the district level. Therefore, the thirty-five percent (35%) which is allotted from the DACF towards development projects is inadequate to take care of the numerous development projects including the provision of water and sanitation services. In view of this, the Municipality was finding it difficult to construct new boreholes to replace the abandoned ones as well as helping to repair and maintain their facilities whenever they break down in the communities. For example, it was established in the study that in Piisi, one of the two boreholes constructed by the Catholic Relief Services in 1986 had been abandoned; nonetheless, the Municipality has failed to replace or repair it due to financial constraint. Similar cases also emerged in Jonga, Sagu and Sing communities.

This is critical because, as far as decentralization of water and sanitation programme is concerned, the Municipal Assembly is required to support the other sponsoring organizations (stakeholders) in the sub-sector to construct the facilities for the user communities. Further, the Municipal Assembly is also anticipated to regularly monitor the facilities to ensure that they are in good shape and operating effectively to produce efficiently to meet the demand of the user communities. However, this has not been the case because the Municipality does not have enough financial resources to support the communities in the events that their facilities break down. The finding corroborates with previous studies carried out by the Gleick (2000) and Fust (2006), in explaining the causes of the failure of water and sanitation projects in Africa. According to Gleick (2000) and Fust (2006), the failures associated with the sustainability of water supply and sanitation projects in Africa arise from the inadequate financial resources to fund the facilities for the user communities.

6.2.5 MONITORING AND EVALUATION OF ACTIVITIES OF NGOS

In Ghana, rural water and sanitation services are provided by the local governments with the support of international agencies, community members and non-governmental organizations (WHO/UNICEF, 2012). This theme is critical because the impact of

the NGOs in community water and sanitation services delivery is important in the communities. These included the provision of training programmes, materials and financial assistance to support community water and sanitation projects. Having analysed the issue of sources of financing water and sanitation projects in the rural and peri-urban communities in the Wa Municipality, the researcher sought to know the perceptions of the activities of the NGOs in the community water and sanitation projects (For example, those NGOs directly linked to community water supply and sanitation sub-sector). In response to this question, one of the officers from Pronet, a local NGO based in the Wa Municipality, in an interview remarked:

"Several non-governmental organizations (NGOs) are involved in the provision of water and sanitation services in the selected communities in the study area. These NGOs include Pronet, Water Aid, and Community Aid for Rural Development (CARD) and Catholic Relief Services (CRS). Although, the NGOs work in close collaboration with the Wa Municipality, their activities in the operation areas are not closely monitored by the District Water and Sanitation Team. In view of this, their activities in the operation areas do not meet the required standard, hence most of their facilities, are not able to withstand a test of time in the communities" (Fieldwork, 2015).

Similarly, as part of the discussion, the issue was further probed during the focus group discussion. One of the participants noted:

"Obviously, NGOs have done their best by providing boreholes, latrines and hand dug wells in their operation areas to help promote access to efficient, quality and sustainable water supply and sanitation services in the communities. Yet, most of the boreholes, latrines and hand dug wells provided for my community [Sing] are usually short-lived, because often times, the project does not meet the technical regulatory standard (system), as in the case of the Government of Ghana project. This is due to the lack of proper evaluation and monitoring of the activities of NGOs to ensure that the project meets the technical specifications and also observe the quality control procedure and standard" (Fieldwork, 2015).

To validate the findings, the issue of the monitoring of the activities of NGOs in the water and sanitation projects was explored during the

interview with one of the Municipal Assembly members. He remarked:

"Sometimes, the water and sanitation project does not pass through strict technology and technical specification, including drawings, bills of quantities, production procedures and quality control requirements, rules and guidelines for operation and maintenance of the facilities. In light of this, most of the facilities often do not meet the required standard set out by the Government of Ghana" (Fieldwork, 2015).

The remark provided by the Municipal Assembly reinforces the preceding response given by one of the focus group discussants. According to them, District Water and Sanitation Team did not monitor the activities of the NGOs effectively and efficiently as required of it by the Act of Parliament, Act 564 of 1998 in order to ensure that the NGOs strictly observe the basic requirements underlying water and sanitation projects such as: the protection of water supply services from bacterial and chemical quality, integrating water, sanitation and hygiene promotion and the protection of the water supply services from direct faecal contamination and from secondary pollution caused by leaching from latrines or septic tanks.

In case of the NGOs, it was also found that, they were aware of the need to ensure that the projects comply with the technical specifications and the quality control procedure and standard. Yet, consistently, the NGOs had become less adamant in using the regulatory systems regulating decentralization of water and sanitation services delivery, due to the absence of the monitoring of their activities by the District Water and Sanitation Team. In particular, the poor monitoring of the activities of NGOs sometimes gave them the opportunity to use their own technical specification systems (which is quite lower the cost of the project) than the technical specification regulatory (systems) of the Government of Ghana in the sub-sector.

The findings support the institutional theory in explaining the poor performance of the NGOs in the water and sanitation services sub-sector. Institutions, by definition, can be described fundamentally as the constructive rules of agreement through which regulative rules which are imposed as obligations to shape and coordinate behaviours. This means that institutions can be a constraining, and superimposing check on some kind of action and also help influence others in

society (Thornton et al, 2012). Therefore, if the institutions are ignored by the actors, the well-intended initiatives and projects are likely to experience little or no success. In line with the above, it can be concluded that the failure of the NGOs to adhere to the institutional structures (regulatory systems) in water and sanitation sub-sector is, in part, contributing to the poor performance of water and sanitation services delivery in the rural and peri-urban communities in the study area.

6.2.6 COORDINATION AND COLLABORATION AMONG THE EXTERNAL DONOR AGENCIES

External assistance to the water and sanitation sub-sector by support agencies in Ghana is significant. These agencies including the International Development Association (IDA)/World Bank, Canadian International Development Agency (CIDA), Danish International Development Agency (DANIDA), United Nations International Children's Emergency Fund (UNICEF), Water and Sanitation for Africa and Water Aid, Ghana, and the Department for International Development (DfID). As part of the discussion, the researcher sought to investigate if there were coordination and collaboration among the external donor agencies in the water and sanitation sub-sector.

The data from the field revealed that, in Ghana, as part of the policy to promote coordination and collaboration among external donor agencies in the water and sanitation sub-sector, the country is categorized into northern and southern sections. Engineering consultants are provided for both northern and southern sectors. Each sector consists of several regions which undertake projects being financed by more than one external donor agency. The engineering consultants are responsible for all coordination and collaboration and supervision in the sections. These included regular meetings to discuss sector policies, guidance to ensure uniform standards, specifications and procedures, standardization of equipment, technical assistance personnel, enforcement of uniform accounting procedures and technological development in the sub-sector.

To validate the findings, the issue of coordination and collaboration among the external donor agencies in the water and sanitation sub-sector was further explored during the interview with the Wa Municipal Coordinating Director. He remarked:

"*The external donor support in the water supply and sanitation sub-sector has worked effectively in the rural and peri-urban communities in the Municipality. The external donor agencies provide material support to projects, training, and the institution building of the community residents, whilst the maintenance and sustainability of the projects are being catered for by the beneficiary communities. However, due to the lack of coordination and collaboration among the external donor agencies in the water and sanitation sub-sector, sometimes the external donor agencies work at cross purposes, a situation which affects the activities of the external donor agencies in water and sanitation sub-sector" (Fieldwork, 2015).*

From the findings, it was found that under decentralization of water and sanitation services delivery, the external donor agencies are expected to coordinate and collaborate with the other stakeholders working in the sub-sector to help design the framework of the water and sanitation project as well as to provide training programme for the communities. In particular, these roles are critical to lead to an improved access to efficient, quality and sustainable drinking water, whether this is at the water point source or at the point of consumption by the households.

Corresponding to the findings, it was established that the external donor agencies which support community water and sanitation projects rather dealt directly with the institutions and agencies in the sub-sector to deliberate on issues including financial support, policy guidelines and specific activities in the action plan. As a result, the external donor agencies had very little or no contact with the engineering consultants who had the institutional authority and capacity to coordinate and collaborate the activities of the external donor agencies, consequently, the multi-lateral and bi-lateral donors end up adopting different policies and approaches to execute their programmes in the beneficiary communities, yet, they have similar goals. This situation, according to the study inhibits the development of water and sanitation services delivery in the study communities.

This finding contrasts starkly with Rondinelli's (2005) conclusion that in developing countries, decentralization is a driving force behind the international agencies or NGOs support to local empowerment as a way of reinforcing the role of their local organizations that are concerned with community development.

6.2.7 POWER STRUGGLES BETWEEN THE ACTORS AT THE LOCAL LEVEL

Another critical issue examined in the study was the power struggles between the actors at the local level. They included community water and sanitation boards and the sub-structures of the Municipal Assembly such as the Urban, Zonal and Town Councils and Unit Committees. In essence, the examination of the issue of power struggles between the actors at the local level was very significant in the study because, under the decentralization of water and sanitation project, at the community level, the community water and sanitation boards play very critical roles in ensuring the success of the project. These included monitoring of the sub-project planning and provision of technical support towards the designs and implementation of the project. They also help to set up tariffs, and procedures of application and enforcement of the payment of the tariffs by the users of the services.

The data from the field revealed that per the Legislative Instrument (LI.1589) of Ghana's decentralization policy as enshrined under the Local Government Act, the sub-structures such as Urban, Zonal and Town Councils and Unit Committees are mandated to perform local level responsibilities to enhance local development. With this provision, the sub-structures have the legal right to initiate plans and decisions towards local development. This implies that the members of the sub-structures (Urban, Zonal and Town Councils and Unit Committees) reserve the right to nullify the decisions taken by the community water and sanitation boards in respect of management and operation of water and sanitation services delivery in the communities. This institutional arrangement has created a kind of power struggles between the community water and sanitation boards on the one hand and sub-structure institutions on the other, thereby posing a threat to the community water and sanitation boards in the performance of their roles in the water and sanitation sub-sector.

From the findings, it was found that in Busa, Kperisi and Charia, the new community water and sanitation boards were all made up of the Unit Committee Members. In particular, the implications of the findings to the decentralization of water and sanitation services

delivery are numerous. First, the Unit Committee Members did not have the technical knowledge in the management and control of water and sanitation services because they had not undertaken any capacity building programmes on the management and control of community water and sanitation facilities at the local levels. In view of this, they lacked the capacity to perform their functions such as the management of household latrines to ensure that the latrines are more hygienic, raising community awareness about hygiene promotion, procurement of spare parts and operation and maintenance of the facilities in their communities in the events that they break down.

Taken together, the empirical data revealed that the power struggles between the local actors was attributed to poor responses to challenges linked with decentralization of water and sanitation services delivery in the study communities. In addition, it was also found that, the community water and sanitation boards were mismanaging the little resources which were meant for the repairs and maintenance of the facilities. For example, it was found that in Jonga, it took almost six months before the community water and sanitation boards assisted the community to get the community's broken boreholes maintained. Similar evidences emerged in Piisi, Sing, Sagu and Kperisi in the study area.

From the findings, it can be interpreted that under decentralization, the local governments are closer to the doorstep of the people than the central government. In view of this, the local governments were expected to provide public goods and services that actually meet the needs and preferences of the people. However, this had not been the case in some of the communities in the study area due to the power struggles between the actors in the local levels of the communities.

This finding contradicts Kim's (2009) conclusion that decentralization helps the government institutions to become more responsive to the needs of local people, whist at the same time motivates the local people to develop sense of ownership over development policies of the local governments and thus makes them support the development projects.

6.2.8 THE POLITICS OF WATER AND SANITATION SERVICE DELIVERY

Another critical issue examined in the study is the politics of water and sanitation service delivery in the study communities. One distinctive feature of politics is that, it is usually associated with the act of sharing of resources within a given community and the interactions between communities (James, 2014). Politics also embraces all activities which impinge upon the making of binding decisions about who gets what, when and how (Lasswell, 1935). In this way, politics can also be considered as the process of social choice (ibid). As part of data collection process, the researcher sought to examine the effect of politics on decentralization of water and sanitation services delivery in the study communities.

Interview with the Municipal Assembly member from Sagu revealed that although, in theory, the Ghana's decentralization of water and sanitation projects was expected to facilitate equal access to safe drinking water and related-sanitation services delivery to rural communities and small towns, in practice, this had not been the case due to political influence on water and sanitation services delivery in the study communities.

From the findings, it was observed that the local politicians were the cause of the problem of the water and sanitation services delivery in the study communities. The empirical data revealed that, the local politicians who were canvassing for votes influenced the allocation of the water and sanitation facilities in the communities, leading to the lopsidedness in the locating of projects in particular communities to satisfy their political expediency. For example, it was found in Sagu, one of the deprived communities in the study area that the people were still practicing open defecation, as well as using shared toilet facilities. This is because, the community had only one toilet facility shared by the households. Meanwhile, in other communities such as Kperisi have about three toilet facilities.

From the findings, it can be interpreted that the role of political influence in the allocation of community water and sanitation facilities is critical because the local politicians are mostly involved in taking the final decisions on the resource allocation in the

Municipality. In view of this, if the local politicians are influential in terms of advocacy and lobbying at the Assembly meetings, they can use the opportunity to request for allocation of the services to their electoral areas, where they do not have enough community water and sanitation facilities**.**

Furthermore, it was also observed in the study that in some of the communities, households were denied of the property rights of the facilities such as the boreholes and places of convenience. For example, in Kpongu, it was found that the households did not have the direct ownership of the boreholes; rather, the community water and sanitation boards had the ownership of the facilities. The ownership of the facilities had practically changed in the sense that the local people did not pay their tariffs for the use of the facilities, because they had the impression that the facilities were communal ownership. Besides, in instances where the tariffs were paid, the care takers did not provide good accountability of the proceeds. To this end, the facilities had been taken over and managed by the community water and sanitation boards. The boards set out the rules regarding the use and the management of the facilities without the involvement of the local people whom the facilities were provided for.

In view of the above, it can be argued that at the community level, there is still re-centralization of management of the community water and sanitation facilities. This is because the local people still did not have direct ownership of the facilities; rather, the ownership and management had been vested entirely in the care of the community water and sanitation boards. This kind of politics associated with decentralization of water and sanitation services delivery in the communities had therefore made the local people to lose their sense of ownership of the decentralized water and sanitation facilities. It is argued that, this situation has affected individual welfare gains of the use of the facilities provided to them.

This finding contradicts Martinez-Vazquez and McNab's (2001) conclusion that local government is critical to improve the citizens' welfare gains than the national government because local government has the ability to provide larger quantity and better quality of goods and services within a particular budget and relatively lower cost.

6.3 SUMMARY OF THE CHAPTER

The foregoing discussion has shown that although the government of Ghana and other stakeholders in the water and sanitation sub-sector have the commitment to improve rural water and sanitation services delivery, yet, there were a number of challenges which affected the decentralization of water and sanitation service delivery in the study communities. One of the challenges identified in the study was the ineffective legislative framework regulating water and sanitation services delivery. This challenge was exacerbated by the absence of monitoring of the user communities by the District Water and Sanitation Team to ensure that the rules guiding water and sanitation services delivery is adhered to at the local units

In addition, it was found in the study that the communities were involved in the procedures and the processes used in the selection of the communities for the water and sanitation project. This situation had led to the poor participation of the people in water and sanitation service delivery in the communities, despite the fact that local participation improves sustainability of projects.

Furthermore, it was also established that the Wa Municipality continued to rely heavily on the central government transfer (DACF) for the provision and management of water and sanitation services to the households in the study communities due to the financial challenge confronting the Municipality. As noted in the study, the financial dependency on the central government to support the basic public goods and services delivery such as water and sanitation services will not improve soon as long as the Municipality continues to use outmoded methods to collect its internal generated revenue.

Again, the lack of proper monitoring and evaluation of activities of non-governmental organizations coupled with poor coordination and collaboration among external donor agencies were also identified as challenges of decentralization of water and sanitation services delivery in the study communities. According to the study, these challenges were caused by the lack of institutional capacity to monitor and coordinate the activities of the NGOs and the external donor agencies. As a result, the stakeholders (actors) in water and sanitation sub-sector such as the multi-lateral, bi-lateral donors and the NGOs end up adopting various institutional policies and

approaches to execute the projects in the communities, although, the policy objective of the agencies and the NGOs are the same in nature. This ends up affecting the quality standard of the facilities they provide for the user communities.

Also, it emerged from the findings that the Legislative Instrument (LI 1589) of Ghana's decentralization policy as enshrined under the Local Government Act empowered the sub-structure institutions such as the Urban, Zonal and Town Councils and Unit Committees to perform developmental roles at the local level. This provision presumably gives authority to the members of the sub-structures (Urban, Zonal and Town Councils, and Unit Committees) to manage and monitor all the development programmes including community water and sanitation services delivery. From the findings, this had resulted in a power struggles between the actors at the local level such as the community water and sanitation boards and the sub-structures, thereby affecting the activities of the community water and sanitation boards in the water and sanitation services delivery in the study communities. Finally, politics of water and sanitation services delivery was identified as a key challenge affecting the rural water and sanitation projects. According to the study, the politics of water and sanitation services delivery had led to the denial of the communal ownership of the facilities. Instead the facilities were owned and managed by the community water and sanitation boards. This scenario therefore makes decentralization of water and sanitation services worthless at the study communities.

In view of the above, it is argued that although it is a legitimate opinion that decentralization improves public goods and services delivery by increasing allocative and productive efficiency, the policy is not advisable for a country like Ghana where there is a high level of elite capture of the local government programmes at the local levels, and also the local government continues to rely on the central government for funds and logistics to carry out its development programmes and activities at the local levels.

CHAPTER 7: DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY: THE USERS AND THE SERVICE PROVIDERS PERCEPTIONS AND EXPERIENCES

The preceding chapter of this thesis focuses on the challenges of the decentralization of water and sanitation services delivery in the selected communities in the Wa Municipality. In this chapter, the researcher sought to examine the perceptions and experiences of the users and service providers on the outcomes of decentralization of water and sanitation projects in terms of access, efficiency, quality and sustainability in the selected communities in the Wa Municipality. It also examined the relation that exists between water and sanitation services on one hand and health of the people on the other. This chapter is of crucial importance in this study in that water and sanitation services delivery is a key objective of every government in both the developed and developing world. The point is that an improved water and sanitation service contributes to reducing the mortality rate of children, increasing life expectancy and also reducing the suffering and hardship caused by water-related diseases (Clasen et al., 2014). The chapter concludes with a summary.

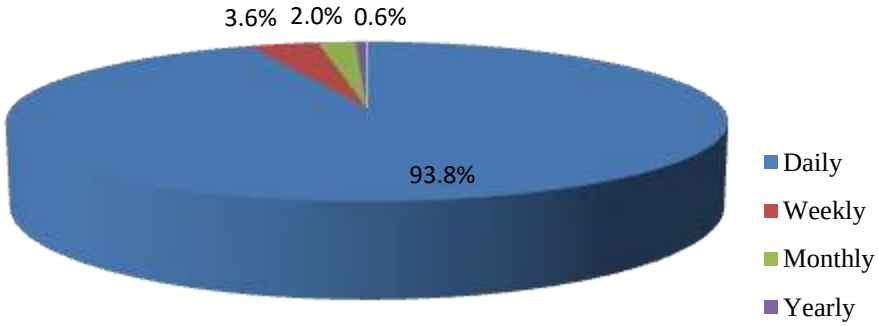
7.1 ACCESS TO WATER SUPPLY AND SANITATION SERVICES

The operational definition of access to water supply and sanitation services is the percentage of households which have direct access to quality water and sanitation services in the community. Households' accessibility to water and sanitation services is crucial to the government because access to water and sanitation services is a key factor to an improvement in socio-cultural, economic and physical well-being of the people. In this study, the discussion on the accessibility to water and sanitation services focussed on reliability of

water supply services, households' coverage of sanitation services and solid waste generation and disposal.

7.1.1 RELIABILITY OF WATER SUPPLY SERVICES

Water is a basic requirement for all. Therefore the reliability of flow of quality water benefits the households, especially women and children of many societies because they are responsible for the collection and transportation of water used in the households. According to CWSA (2014), a water facility is described as reliable if the facility is able to provide regular water supply services for at least ninety-five percent (95%) of the year, without being interrupted. This is one of the critical topics of the study, because a reliable flow of quality water benefits the households, especially women and children in the study communities who are responsible for water collection and transportation for household uses. As part of the study, the researcher sought to examine the reliability of water supply services from the boreholes in the study communities. Figure 9 presents the detailed results of the findings.



Source: Fieldwork, 2015.

Figure 9 Reliability of water supply services

As Figure 9 shows, out of the 354 responses, 93.8% indicated that the boreholes supply water daily, 3.6% said the boreholes supply water weekly, and 2.0% noted that the boreholes supply water monthly. Only 0.6% stated that the boreholes supply water yearly. To confirm the findings, the issue was explored in the focus group discussion. One of the discussants who live in Piisi remarked:

"The water supplies from the boreholes are regular, but the pressure on the boreholes for water supplies is high in the community because there are three boreholes in this community, one of the boreholes has broken down due to the lack of proper repairs and maintenance. In view of this, the hand pumps of the two functional boreholes are often locked up especially in the afternoons. The intention is to ensure sufficient recovery of water in the boreholes and also to monitor the use of the hand pumps. For this reason, many of the community residents resort to unsafe traditional water sources for domestic purposes during the afternoon of the day" (Fieldwork, 2015).

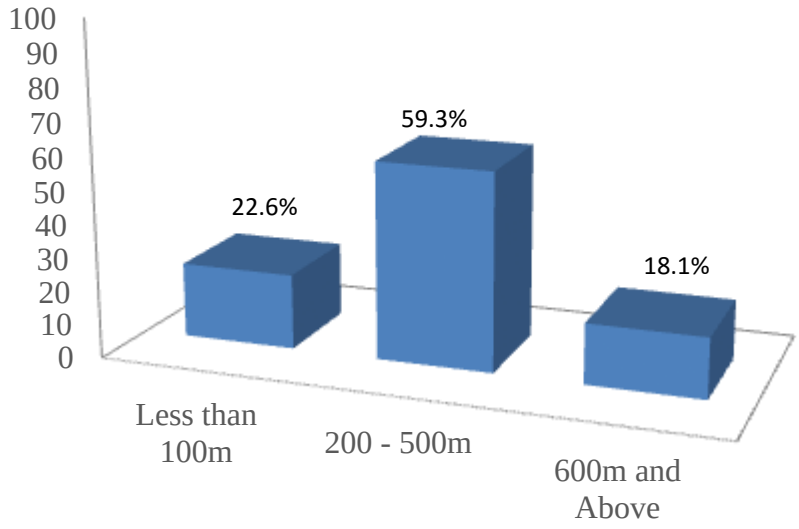
Similarly, an Assembly Member in Nakori lamented in an interview, on the issue that:

"Actually, as I know, the required recommended borehole to persons is 1:300 in the communities. As it stands now, the ratio is about 1:700 persons due to the breakdown of one of the boreholes. So, currently, the community depends on two boreholes for water supplies. As a result, the functional boreholes supply water to about 60% of the population in the community. Thus, there is rationing of water at the household units in the community. This problem is likely to increase in the few years due to the increasing rate of child birth in the community" (Fieldwork, 2015).

Implicit in the excerpts above is the lack of repairs and maintenance of the boreholes by the Community Water and Sanitation Board with the support of the District Water and Sanitation Team from the Municipality; the driving force behind the designing process of the decentralization of water and sanitation projects. This is more critical because one of the key factors to help energizing the boreholes to produce constant water supplies to expand access, efficient, quality and sustainable drinking water is the regular repairs and maintenance. This can be easily achieved where spare parts, lubricants and other consumables are available when needed. For example, it was found in Charia, Jonga, Nakori and Piisi that the non-functionality of the

boreholes had affected the households' access to efficient, quality and sustainable water supplies, straining the already fragile balance between water supply and demand in the communities. This situation had resulted in an increase in waiting time at the water source point, the running costs had become higher and the burden on women and children to search for water had also become greater in the communities. These findings are inconsistent with Oates' (1999) work. According to Oates' (1999), decentralization promotes allocative efficiency of the provision and management of basic public goods and services than the central government because decentralization focuses on reaching out to the vulnerable and underprivileged who are in the deprived areas.

As a follow-up to the previous question, the researcher sought to investigate the respondents' perceptions of the distance to water point for water supply services. Figure 10 presents detailed results to buttress this.



Source: Fieldwork, 2015.

Figure 10 Distance to the water point for water supply services

As Figure 10 indicates, out of the 354 respondents who participated in the survey, 22.6% of them said the distance from their homes to water point for water supply services were less than 100m, whereas

59.3% indicated that the distance from their homes to water point for water supply services was between 200 to 500m. Only 18.1% said the distance from their homes to water point for water supply services was 600m and above. On the whole, a majority of the respondents (81.9%) walked a distance of less than 100m, and 200m to 500m respectively to the water point to have access to water. This is in accordance with the CWSA required standard of 500m[12] distance for the setting of boreholes (hand pumps). However, it must also be mentioned that out of the 354 respondents, 18.1% of the respondents also claimed they walked about 600m and above before they got access to water point to access water. The households of 18.1% of the respondents who walked for about 600m and above before they got to water point for water supply services often relied on other sources of water which were closer to them, although the unauthorized water sources had a number of indirect adverse health effects on them. To validate the findings, the researcher further probed the issue, during the focus discussion. One of the participants remarked:

"I spend one hour to walk to the water point source for water daily, while others in the same community [Biihee] spend even more than one hour before they get to the water point source. The problem is that one of the existing boreholes is non-functioning. In addition, service providers did not also take into consideration, the dispersed nature of the settlement patterns before they constructed the boreholes for us" (Fieldwork, 2015).

From the findings, it was found that the service providers in the decentralized water and sanitation services delivery did not take into account the local desires and the prevailing conditions of the people before the facilities (boreholes) were constructed for them. As a result, the people had not socially accepted the new water project provided for them, rather, they continued to rely on the traditional sources for water supplies for domestic uses. For example, it was revealed in the study that in Sagu, Jonga and Kperisi that although low-cost technology boreholes had been provided them, the systems had fallen idle and into disrepair because not enough attention was actually paid them before the construction of the facilities.

In view of the above, it can be interpreted that as far as decentralization of water and sanitation services delivery is

[12] Distance to the water point must be up 500m (CWSA, 2012).

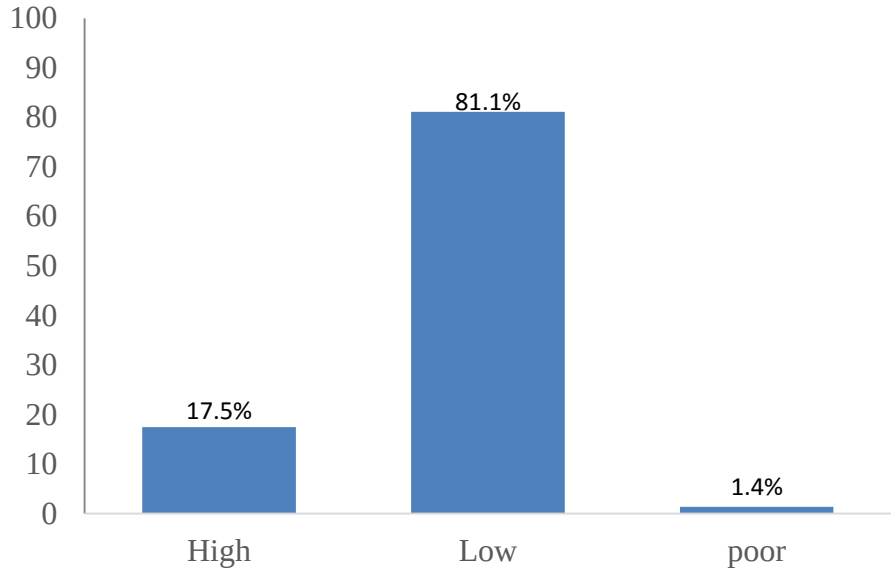
concerned, improved investments and focus on technology alone, while important, were not adequate to enable the local people to socially accept the projects and also sustain them. The sustainability of the project could be achieved if the local desires and the prevailing conditions of the people are taken into account before the facilities are provided them.

The findings of the study support the institutional theory as espoused by Selznick (1957) and Riggs (1971) to explain the failure of decentralized water and sanitation project in the study area. Institutions, by definition, can be described fundamentally as the constructive rules of agreement through which regulative rules are imposed as obligations to shape and coordinate behaviours. Thus, institutions can be a constraining and a superimposing check on some kinds of action and also help influence others in society (Thornton et al, 2012). This means that whenever the institutions in society are ignored during the policy design and implementation, the well-intended developmental initiatives are likely to fail in the communities. This means therefore that, in order for the community water and sanitation project to be successful in the beneficiary communities, it should be socially-acceptable. The socially-acceptable community water and sanitation project is one that is packaged in a manner that takes into account the desires and the prevailing conditions of the people in the communities, as well as packaged in a manner that accompanies a radical change through effective social marketing strategies that make the stakeholders perceive themselves to be better off with the change. Therefore, if the community involvement is not fully achieved, people will prefer to continue with their 'own way of life' rather than adopt a new water and sanitation facility which promises to offer access, efficient, quality and sustainable services to people in the community.

7.1.2 PERCENTAGE HOUSEHOLDS COVERAGE WITH SANITATION SERVICES

Sanitation has been recognized as a key component in the efforts to improving health. Sanitation is therefore important in water project and it should, whenever possible, be married with water supply services during the initial planning stages of water project. As one of

the core components in water projects, the study examined the percentage households' coverage of sanitation services in the communities. A summary of results is presented in Figure 11.



Source: Fieldwork, 2015.

Figure 11 Percentage households coverage with sanitation services

As Figure 11 shows, out of the 354 respondents, 17.5% of the households had high coverage of sanitation services, whereas 81.1% and 1.4% of the households had low and poor coverage of safe sanitation services respectively. Furthermore, in relation to the issue of percentage households' coverage with sanitation services, the study asked a follow-up question to determine the type of toilet facilities commonly used by the households in the community. It was found that out of the total respondents of 354, 70.9% of the households were without toilet facilities at home, while 2.0% of the households had water closets. Again, it was revealed that 11.0% of the households had private latrine, while 16.1% had public toilet. In addition, it also emerged that the households which had access to water closets and represented 2.0% in the communities were the local elites who were the monthly salary workers. Further, an anecdotal discussion with the respondents revealed that households in the

communities resorted to open defecation in the communities including in the bushes, around the settlements, on garbage dumps and in streams which serve as water source to several communities, although some of the households had access to private and public toilet facilities.

An interview with the Municipal Environmental Health Officer indicated that open defecation was a common practice in the communities because the communal latrines constructed in the communities did not meet the required hygienic standards in a number of ways: First, the surroundings of the public toilets were not weeded. Second, the seats were not cleaned with soapy water and third, the toilet bins were not emptied nor the toilet rolls dislodged from the septic tanks, or burnt in order to ensure that the place was hygienic for use. Consequently, there was a pungent stench around the toilet facilities and also the facilities attract flies which made the usage of toilet facilities quite phenomenal by the households in the communities.

Also, it was found that the communal latrines were always crowded, and too distant from many of the households they served in the communities. This situation posed serious challenges for the households particularly for the children and their parents. For example, in Biihee, it was found that the community had only one public latrine. Besides, the distance from their settlements to the place of convenience was far. In view of that, many of the women in the community [Biihee] found it impracticable to send their children on a long distance to the place of convenience, especially when there is more than one child to be cared for at home. Under this condition, the parents allowed their children to squat in gutters and lanes around their settlements to openly defecate.

Further, the findings also revealed that the percentage of households that adopted the open defecation method (in the bush, at refuse dump sites, around streams, defecating in the carrier bags and throwing the faecal matter in the storage containers in their communities) represented 60%, which is greater than the national average (25%) of people who practice open defecation (Ghana Statistical Service, 2012).

To validate the findings, the researcher further interviewed the Director of the Municipal Assembly Health Services Director on the issue. Confirming the findings, he remarked:

"Currently, there is a problem with sanitation services delivery such as public toilet facilities. In view of this, the households in the communities are forced to share toilet facilities anytime you visit public toilets. However, sharing toilet facilities in the communities is not a safe practice for older women, and also for girls, who mostly fall victims to harassment by some unscrupulous men whenever they visit the communal latrines" (Fieldwork, 2015).

From the excerpts, it was established that, an improvement in sanitation service delivery in the study communities could lead to a number of substantial direct and indirect health, social and economic benefits to the households. For example, an improved sanitation service delivery is likely to contribute to reducing the mortality rate of children and improving expectancy rate. In addition, it eases the suffering and hardship caused by sanitation-related diseases in the study communities.

However, despite the above benefits associated with an improved sanitation service delivery, the problem of sanitation services delivery still persisted in the communities under decentralization of water and sanitation services delivery. This is because the Municipality; the driving force behind the decentralization did not have sufficient financial resources due to the low level of revenue generated from the internal sources. As a result, the Municipality had to rely on the central government for financial support to carry out its programme in the communities. This situation makes local government worthless under the decentralization programme. This finding corroborates Kwon's (2002) work in explaining the failure of decentralized water and sanitation services delivery. According to him, in the developing countries, decentralization cannot automatically lead to an improvement in the public goods and services delivery such as water and sanitation services as espoused by the classical scholars, because local preferences may not as easily reflect in the local budget statement as in the case of advanced countries. Second, sub-national governments in developing countries have poor administrative capability to mobilize their own financial resources. Therefore, they lack autonomy in financial resources making-decision to determining

the quantity and quality of public goods and services provided to the citizens.

7.1.3 SOLID WASTE GENERATION AND DISPOSAL

Solid waste generation and disposal was another important issue examined in the study. The major solid waste components generated in the communities were food waste, plastics, metals, wood waste, paper, glass, and other types of waste (Municipal Assembly, 2014). As part of the study, the researcher examined the factors that accounted for solid waste generation. The results of the findings are displayed in Table 11.

Table 11 Factors accounting for solid waste generation in the Municipality

Item	Frequency	Percent
Increased population	284	80.2
Inadequate education on waste management practices	49	13.8
Poor enforcement of sanitation by-laws	21	6.0
Total	354	100.0

Source: Fieldwork, 2015.

As shown in Table 11, the majority of respondents (80.2%) indicated that an increase in the population accounted for the increased in waste generation, whilst 6.0% said the increase in waste generation was caused by poor enforcement of sanitation by-laws, and 13.8% maintained that an increase in waste generation was caused by inadequate education on waste management practices in the communities.

Further, the issue of solid waste collection and disposal was discussed during the focus group discussion. One of the participants explained:

"The refuse collection and disposal in my community [Busa] is done by the Zoomlion Services Ghana Limited which is contracted out by the Assembly. It is also carried out by the Municipal Assembly Waste Management Team. The refuse is stored in dust bins and other storage containers in specific locations supplied by the assembly,

awaiting collection to the dumpsites. However, due to the irregularity of the service rendered by the Zoomlion Services Ghana Limited, and the Municipal Assembly Waste Management Team, sometimes a large amount of the solid waste is not collected, consequently, the refuse are often found scattered around the settlements. Worst of all, in my community [Busa], especially during the dry season between November and March, many of the dust bins could be seen overflying throughout the settlements due to the North-Eastern Trade Winds from the Sahara Desert" (Fieldwork, 2015).

The response above indicates that the issue of solid waste collection and disposal was handled by the private company (Zoomlion Ghana Company Limited), which had been contracted by the Municipal Assembly. The Department of Waste Management of the Municipal Assembly also carry out the refuse collection to the dumpsites. Form the findings, it was found that these waste management institutions mostly operated in the Wa Township, and its adjoining communities, while leaving the communities which are quite remote from the Municipal Capital.

To validate the findings, an interview with the Municipal Assembly Member in the community [Busa] also emerged that sometimes, it could take the workers about a week or more before the refuse were transported to the dumpsites. This situation, in part, accounted for large amount of refuse stored in the containers in the community.

To reinforce the findings, the researcher interviewed the Municipal Environmental Health Officer on the same issue. He remarked:

"Refuse collection is done by Zoomlion Services Ghana Limited, a private company contracted by the Municipal Assembly. The Department of Waste Management in the Municipal Assembly also collects waste to the dumpsites. In addition, the Municipal Assembly has provided the communities with adequate garbage containers to collect the refuse, awaiting disposal to the dumpsites by the waste collectors. Yet, the households at times chose to dump their solid waste indiscriminately around the compound, in the street or areas where the big containers are placed to store the refuse" (Fieldwork, 2015).

The interview with the Municipal Environmental Health Officer highlighted the contributions made by the Municipality in an attempt to address the poor sanitation situation in the communities. These

included the provision of dumpsites for waste disposal and the provision of adequate garbage containers to store the refuse. Others include contracting the Zoomlion Services Ghana Limited to carry and dispose of the refuse, and equipping the Department of Waste Management in the Municipal Assembly to collect wastes to the dumpsites.

Paradoxically, it was found in the study that, in spite of the above measures, many of the households have ignored these dumpsites and continue to dump their garbage in bushes around the settlements and sometimes on the streets or in the gutters near their houses. According to the study, the people exhibited these kinds of behaviour due to the lackadaisical attitude of the workers of the Zoomlion Services Ghana Limited and the Department of Waste Management of the Municipal Assembly towards refuse collection and disposal in the communities. It was observed that, the long distance from the house to the dump sites to dispose of refuse and absence of education on hygiene promotion also contributes to this canker.

Further, the researcher examined the other methods of solid waste disposal in the communities during the focus group discussion session. One of the participants remarked*:*

"Apart from dumping refuse in the dustbins to be conveyed to the dump sites, in my community [Sing], we also burn the refuse. Besides, at other times, the solid waste are dumped in an organized place near our settlements and subsequently transferred them to serve as compost for our farms" (Fieldwork, 2015).

From the above excerpt, it was established that, apart from dumping the refuse in dustbins, most often, the households burnt the refuse just around their settlements. Although burning is another method used by the households to dispose of their refuse, it is not a good environmental practice in the communities. The implication of this practice on health is that the smoke that is emitted from the burning refuse can cause lung cancer, headache and other respiratory infections for the residents in the households.

Further, it also emerged that the households also practiced traditional methods of waste disposal, where waste was dumped in an organized place to serve as compost for their farms. Obviously, this traditional practice is ecologically good for farming. Nonetheless, it is also greatly challenged and environmentally hazardous, especially during

the rainy season. First, the traditional waste management practice produces messy pools in the kraal and therefore generates very messy conditions which produce a pungent smell near the households. Second, it also serves as breeding grounds for flies. In view of the above, the traditional waste management practice is considered as sanitation unfriendly because the practice has a tendency to lead to outbreak of both communicable and infectious disease outcomes such as cholera, typhoid and diarrheal diseases in various households.

In addition, as part of the research, the study sought to explore whether the respondents were willing to report a culprit who is caught dumping solid waste indiscriminately in the open field to the Community Water and Sanitation Boards, or the Assembly Members for such culprits to be fined in line with the rules and guidelines governing decentralized water and sanitation projects. One of the participants who had lived in one of the communities [Sagu] for the past 30 years remarked:

"*Indeed, indiscriminate disposal of waste has grave consequences on environmental sanitation management in the communities. Obviously, my community [Sagu] is one of the classical examples. Yet, it is not good to report the culprits to the local authorities because we are neighbours. Worst of all, you will become an enemy to the family of the culprits in the community" (Fieldwork, 2015).*

From the responses, it was established that indiscriminate disposal of refuse was not a good practice in the communities; nonetheless, the residents continue to practice it. How does one explain the behaviour of the households in terms of management and control of sanitation practices in the communities? One explanation is that local waste disposal is not usually a concern to the households or residents if the quality of their living environment is not affected by the bad sanitary practices (for example, open defecation, improper waste disposal and burning refuse in open places). On the contrary, households in the communities become more concerned and aware of the effects of the bad sanitary practices if such practices seriously affect the environment in which they live. In this context, it is argued that residents often see the provision and management of refuse and sewerage systems as the responsibility of the government (local or central) and not the responsibility of the households in the

communities, because the bad sanitary practices did not affect the environment in which they live.

Furthermore, obtaining legitimate community consensus to appreciate the impact of poor sanitation and unhygienic environment on their health is not a simple task. For example, from the study, it emerged that the underprivileged rural communities in the study area such as Sagu and Sing had serious sanitation- related and hygiene challenges. Nonetheless, they were not aware in spite of the frequent outbreak of the sanitation-related diseases; because these communities lacked knowledge of the proper resolutions to resolve their predicaments (sanitation and hygiene related diseases).

In view of the above, it is argued that the decentralization of water and sanitation projects had not been able to ease the challenge of frequent outbreaks of diseases and the increasing rate of mortality rates among the children under five in the study communities in the Municipality- a challenge which confronted the centralized provision of water and sanitation services delivery. This situation is not an isolated situation in Ghana. For instance, in the Third World countries, institutional reforms have in many instances, been executed, without sufficient deliberation on the policy change and the local setting of which the policy is executed. As a consequence, the involvement of the beneficiaries towards the success of the programme is low, because they feel that they are not part and parcel of the programme. This tends to affect the efficient delivery and sustainability of the goods and services being delivered to the people. This finding is inconsistent with Oates (1999) work who argued that decentralization promotes allocative efficiency in terms of the provision and management of basic public goods and services, because decentralization focuses on reaching out to the vulnerable and underprivileged who are in deprived areas.

7.2 EFFICIENCY OF DECENTRALIZATION OF WATER AND SANITATION SERVICES DELIVERY

Efficient water and sanitation services delivery, to a greater percentage of low-income households, is crucial to socio-economic development because it helps to prevent water-borne and sanitation-related diseases at the household levels in the communities. To begin

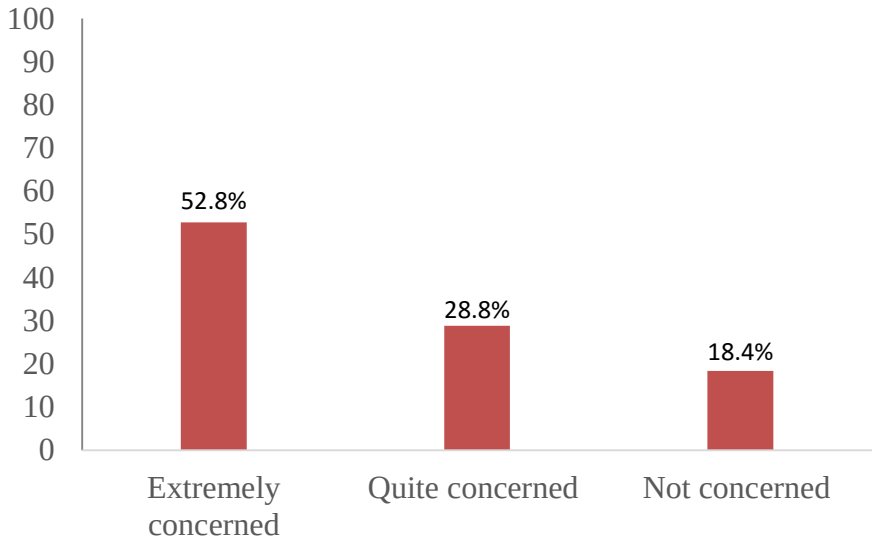
with, the discussions of the efficiency of decentralization of water and sanitation services delivery focus on the households hygienic practices. This issue is discussed thereof in the subsequent section.

7.2.1 HOUSEHOLDS HYGIENIC PRACTICES

One of the key practices in reducing the incidence of water-borne and sanitation-related diseases is implementing households' hygienic practices. As part of the discussions, the issue of households' hygienic practices was examined in the study communities. The intent was to investigate the residents' knowledge of households' hygienic practices and its impact on the health of the people. The issues that engaged the researcher's attention included: households water storage condition, frequency of cleaning water storage containers and reservoirs, hand washing with soap, maintenance of boreholes and households' involvement in environmental cleanliness. The issues are discussed in turn.

7.2.1.1 HOUSEHOLDS WATER STORAGE CONDITION

An adequate supply of quality water to households is not a necessary condition for the prevention of water-borne diseases. Quality water supply services is critical to improve the health status of the residents of the households (end users of the service) if the households water storage conditions such as the type of water containers used to collect water, its storage and retrieval for domestic uses are hygienic. This issue is critical, in that, the evidence gathered suggests that water quality from the boreholes in the communities was far more acceptable than water supply services from the traditional sources; nevertheless, residents of the communities, especially children, often experience water-borne and sanitation-related diseases including diarrhoea with the continuous use of water resources. As part of the study, the researcher sought the views of the respondents concerning households' water storage condition. Figure 12 provides a summary of the results.



Source: Fieldwork, 2015.

Figure 12 Level of concern in dealing with households' water storage condition

As depicted in Figure 12, a majority of respondents (52.8%) indicated that they were extremely concerned with households' water storage condition; whereas 28.8% said they were quite concerned. Only 18.4% opined that they were not concerned with the households' water storage condition. From the findings, it was further revealed that a majority of the respondents (52.8%) who were extremely concerned with households' water storage condition were the local elites (the municipal assembly members, traditional chiefs, opinion leaders in women groups and the salaried workers in the communities). In contrast, the respondents who claimed that they were not concerned (18.4%) were the underprivileged and vulnerable people who did not see the need to apply the sanitation and hygiene promotion education in the households. They were not; therefore, ready to show their willingness to finding a solution to the situation. This was because these households in the communities were poorly reached out to in terms of sanitation and hygiene education.

The issue was probed further during the focus group discussions. One of the participants remarked:

"*I do not cover the water containers and reservoirs, because, I use them to harvest rain water any time it rains. In addition, this type of water is used for cooking, washing and bathing, so, I do not cover it. However, the storage containers and reservoirs used to store the drinking water are usually covered and are stored in the kitchen. More importantly, sometimes we wish we can get education from the appropriate quarters on sanitation and hygiene education promotion"* (*Fieldwork, 2015).*

From the findings, it can be pointed out that some of the households in the communities have the willingness to exhibit good hygienic practices at the household units to help promote good water storage condition to protect the water from contamination, whilst others do not, although, contamination of water can occur depending on the household's water storage conditions. These practices such as unwillingness to cover their storage containers was recurring in the low income communities including Sagu, Sing, Piisi and Jonga in the study area. This was because these communities were poorly reached out to, in terms of sanitation and hygiene education. In view of this, they did not see the essence of promoting hygienic practices in their households. This means that sanitation and hygienic practices are more likely to improve at the communities where the level of hygiene and sanitation education programme is high. Conversely, hygienic practices will also be low in communities where the hygiene and sanitation education is not satisfactory.

Further, according to the dominant view, decentralization helps to allocate resources evenly to both the developed and the deprived areas of the state. This means that under decentralization, the underprivileged in the deprived areas have access to equal treatment in the state. However, the responses from the extract in the study had shown that there was the lack of equal treatment in terms of education on hygiene and sanitation management and control in the study communities. The point is that within the study area, the poor communities such as Sagu, Sing, Piisi and Jonga continued to experience very poor treatment on sanitation and hygiene education programme carried out by the District Water and Sanitation Team and Community Water and sanitation Board in the study communities, whilst Kperisi (one of the developed communities in the study communities) had frequent access to sanitation and hygiene

education programme. By extension, this means that the kind of treatment that the District Water and Sanitation Team and Community Water and Sanitation Board had been giving to the underprivileged (deprived) and privileged communities in terms of hygiene and sanitation education was different in the study communities.

In view of the above, it can be interpreted that decentralization is seen as a threat to equal allocative efficiency of the provision of water and sanitation services delivery to the people in the same communities in the study area, due to the level of disparities between communities in terms of access to water, sanitation and hygiene education in the same study area. This finding agrees with Prud'homme's (1995) work to explain the failure of decentralization programme. According to Prud'homme (1995), decentralization widens the level of disparities between jurisdictions in a country because decentralization provides different treatment to citizens in the same country. According to the critics, under decentralization, districts with higher per capita income have the opportunity to get higher access to the provision of basic local public goods and services than district with low per capita income, although, the residents of the districts with the higher per capita income are not likely to pay higher taxes for the provision of local goods and services.

7.2.1.2 FREQUENCY OF CLEANING WATER STORAGE CONTAINERS AND RESERVOIRS

Frequency of cleaning water storage containers and reservoirs as a function of household hygienic practices was also discussed in the study. This is central to the study of water and sanitation services delivery because, whilst water is the source of life, it can also become a source of diseases if the water storage containers mostly used by the community to collect water are not hygienic. To begin with, questions were asked to elicit responses from the respondents on the frequency of cleaning water storage containers and reservoirs at the households' level. Table 12 provides the summary of results.

Table 12 Frequency of cleaning water storage containers and reservoirs

Item	Frequency	Percent
Weekly	32	9.0
Fortnightly	82	23.2
Monthly	69	19.5
Occasionally	171	48.3
Total	354	100.0

Source: Fieldwork, 2015.

As Table 12 indicates, out of the 354 responses, 23.2% affirmed that they clean their water storage containers and reservoirs fortnightly, only 19.5% indicated that they clean their water storage containers and reservoirs monthly and 48.3% noted they clean water storage containers and reservoirs occasionally. Only 9.0% of the households in the study communities had their water storage containers and reservoirs cleaned within the week. From the responses, it is argued that a significant higher number of the households did not clean their water storage containers and reservoirs regularly before they used to store water from the boreholes for domestic uses. This phenomenon was found to be one of the critical conditions that led to the contamination of households' water storage. This is because one of the crucial requirements that has to be met in order to ensure that drinking water is of high quality for the households is that households' water storage containers and reservoirs should be frequently cleaned to prevent pathogenic bacteria, viruses, protozoa and helminths (a parasitic worm) from entering the containers and reservoirs that were used to store water at the household levels.

To validate the findings, the issue was probed further during the focus group discussion. One of the participants who live in Busa remarked:

"This community [Busa] in the Municipality used to have health officials to organize sanitation and hygiene education programmes for us. Interestingly, these health officials were knowledgeable about the work they do. Therefore, they ensured that quality education programmes were provided to the community. Sadly enough, although the service providers continue to organize sanitation and hygiene education programmes for us, the current crop of workers

who organize such workshops are not competent and efficient of the work they do, yet, they do not visit the community regularly to organize the programme for us" (Fieldwork, 2015).

From the findings, it was found that although there are potential health benefits accrued from the regular cleaning of the water storage containers and reservoirs at the household units, some of the communities did not get access to such programmes. This problem is attributed to the lack of competent staff to organize regular education for them. For example, a critical examination of the findings confirmed that in Busa, although water supply services at the point source were found to be quality or free from contamination, at the household levels, the stored drinking water was found to be contaminated, because many of the households did not observe the regular cleaning of the water storage containers and reservoirs at the household units (The water quality test: Detection of bacteriological parameters-Total Coliform, and Escherichia Coliform (*E coil)* is discussed in detailed in section 7.3).

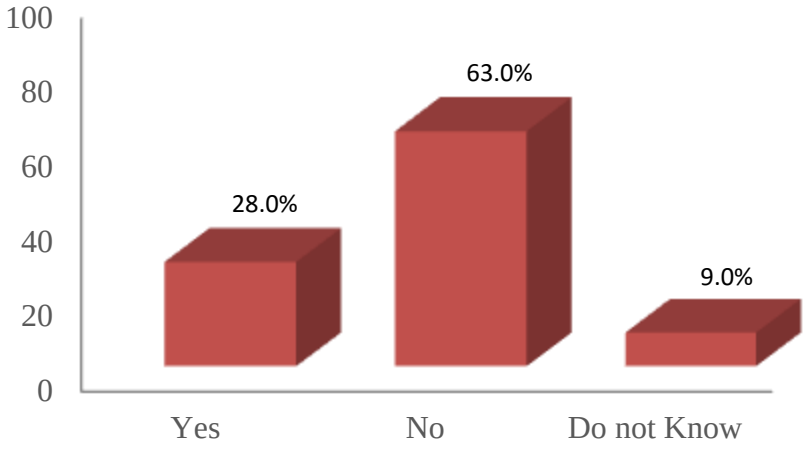
From the responses, it can be interpreted that under the Ghana's decentralization system, the local government staff continue to be the employees of the central government, because the government recruits and then post them to the local government intuitions. Therefore, the local government staffs are automatically the employees of the government even though they work in the District Assemblies. This situation affects the level of commitment of the staff towards the local government programmes. This is because, the local government does not have the authority to terminate the appointment of the staffs if they fail to deliver the duties effectively assigned them. This institutional arrangement makes the Municipality inefficient to perform its roles effectively under decentralization of water and sanitation services delivery in the study communities.

This finding that emerged from this study confirms that of Laryea-Adjei's (2007). According to him, central governments in most of the Third World countries pay critical attention to fiscal and political decentralization rather than the administrative decentralization, or they design the decentralization programme in such a way that the local service providers continue to be the employees of the central government. This practice leads to the loss of local autonomy by the

local governments to hire the competent and committed staff to carry out the day-to- day activities.

7.2.1.3 HAND WASHING WITH SOAP

Having analysed the frequency of cleaning water storage containers and reservoirs by the households in the communities, the researcher made an attempt to ascertain from the respondents whether the households in the study communities practiced regular hand washing with soap in critical times; before eating or visiting the toilet. Hand washing with soap is of paramount importance in water and sanitation project largely because it helps to maximize the potential benefits of improved water supply and sanitation services to the households in the communities. Figure 13 presents a summary of the findings.



Source: Fieldwork, 2015.

Figure 13 Distribution of responses on regular hand washing with soap

As Figure 13 reveals, out of the 354 respondents, a majority of 63.0% indicated that they did not practice regular hand washing with soap before eating or visiting the toilet. Again, whereas 28.0% of the respondents affirmed that they washed their hands with soap

regularly before eating, or after visiting toilet, only 9.0% of the respondents noted that they did not know about the practice. From the findings, it was revealed that regular hand washing with soap before eating, or after visiting toilet was not seriously observed by the households in the study communities. Meanwhile, hand washing with soap at critical times such as before eating, or after visiting toilet helps to remove the unpleasant faecal odour. It also helps to avert the spread of disease agents such diarrhoea, respiratory infections and skin infections (Pullan et al., 2014; Bain et al., 2014).

The data collected indicated that because of the economic hardships faced by the household units in the selected communities in the Wa Municipality of the West Upper Region[13], the residents are required to use soaps careful at the household levels. This practice is meant to ensure that households do not spend more money on toilet soaps so that the little money in the households is saved for the daily expenditure. In this direction, toilet soaps were considered as valuable goods at the household levels and various households use the soaps with care. In addition, in most of the low income households, the use of toilet soaps for hand washing in critical times (before eating or after visiting toilet) was not a regular practice. As a result, it becomes quite difficult to suddenly introduce the practice in the household units. In addition, in rural communities where a majority of the people do not have education, households' hygienic practices are not seen as an important issue. Consequently, residents in the households find it illogical to wash their hands when the food is ready. In some cases, residents in the households forget washing their hands after eating because it is not a habitual practice.

In order to investigate the issue of regular hand washing with soap in critical times (before eating or after visiting toilet), the issue was probed further during the focus group discussion. One of the participants who live in Jonga community remarked:

"*At times, you can wash your hands before eating, at other times; you can forget and eat without washing your hands. In the same way, sometimes, you can wash your hands after visiting toilets, and at other times, you may forget to wash your hands after visiting toilets.*

[13] According to the Ghana Statistical Service Report (2012), the Upper West Region of Ghana continues to have the highest rates (70.7%) of poverty in Ghana

This is because hand washing is not a regular practice in our daily lives" (Fieldwork, 2015).

To validate the findings, the researcher probed the issue during the interview with Municipal Environmental Health Officer. He aptly stated:

"As part of the community water supply and sanitation project, the stakeholders organize sanitation and hygiene promotion programmes to the communities. As I know, these programmes are carried out frequently throughout the communities. This practice is carried out to ensure that the communities are well educated on good sanitation and hygienic practices so that the households would observe, practice and lead lifestyles that would help to prevent water borne and sanitation related diseases" (Fieldwork, 2015).

To confirm the findings, the issue was probed further during the interview with the CWSA Extension Service Specialist. He noted:

"CWSA has integrated hygiene education in water and sanitation project. CWSA in partnership with the stakeholders in the rural water and sanitation launched the Public Private Partnership in Hand Washing with Soap (PPPH) in Accra in 2003. The exercise dubbed" OBAATAMPA, HOHORO WO NSA" (Good mother, wash your hands) was carried out in all the regions and most of the district assemblies. Added to this, the CWSA has prepared hygiene and sanitation educational materials such as posters, stickers, manuals, toolkits, video and audio Compact Disk (CDs) to improve the hygiene education in the rural communities in Ghana" (Fieldwork, 2015).

The responses reinforce the point that hand washing with soap in critical times (before eating or after visiting toilet) is very crucial in the decentralization of water and sanitation services delivery. This is more critical, especially in the Ghanaian context where hands are mostly used directly for feeding. In this case, the integration of the sanitation and hygiene promotion programme into the decentralized water and sanitation project has a relatively high influence in ensuring that positive health results are achieved in the sub-sector. However, this was not the case in many of the low income communities in the study area. For example, in one of the study communities [Jonga], it emerged that the people were aware of the importance of hygiene, nonetheless, the economic conditions in the area makes the use of soap very much expensive for the residents in

the household units. This means that the poor state and condition in which the people live account for their bad behavioural attitude towards good sanitation and hygienic practices. This hardship economic situation of the people can be ascribed to the failure of the local government to provide the enabling environments (reduction of property rates, quick processing of land titles, strengthening of the security systems and construction of feeder roads) to create more opportunities for jobs to the unemployed youth who are mainly farmers in order to help improve their economic situation. This is critical because good hygiene behaviour is influenced by the situation in which people live in the household units. This finding complements that of Dethier's (2000) in explaining the failure of decentralization programme. According to him, one distinctive feature of decentralization is local elites capture. According to Dethier (2000), local elites capture occurs when the local bureaucrats exercise great influence over the policies and programmes of the local governments for their personal interest. This phenomenon leads to the difficulty of accessing public goods and services by the underprivileged and vulnerable group, leading to the widening of the poverty gap.

7. 2.1.4 MAINTENANCE OF BOREHOLES

One of the ways to measure the efficiency in the decentralization of water and sanitation services delivery is the ability of the community water and sanitation boards in the water and sanitation sub-sector to help maintain and replace broken boreholes. As part of the discussion, the views of the respondents were sought on the length of time it took to carry out the maintenance work on boreholes. The results of the findings are displayed in Table 13.

Table 13 Length of time for the maintenance of the boreholes

Responses	**Frequency**	**Percent**
Six months	14	4.0
Every two years	24	6.8
Every three years	96	27.1
Yearly	220	62.1
Total	**100.0**	**100.0**

Source: Fieldwork, 2015.

As Table 13 shows, out of the 354 respondents, 4.0% indicated that it took 6 months to maintain their boreholes, while 6.8% do so every 2 years. Again, 27.1% said they maintain their boreholes every 3 years, while 62.1% do so annually. Nevertheless, according to the requirements of Community Water and Sanitation Project, WATSAN committees/WSDBs are expected to conduct the routine maintenance of the boreholes at least twice a year. Such routine checks comprise of general inspection, greasing and replacement of fast wearing parts, minor repairs and functionality assessment. The lack of routine maintenance of the boreholes sometimes has negative effects on the efficiency and operational standard of the boreholes.

To confirm the findings, an in-depth interview was conducted on the same issue with CWSA Extension Services Specialists, he highlighted that:

"As part of the conditions on water and sanitation project, the routine management and maintenance of the boreholes in the communities are expected to be carried out by WATSAN committees/WSDBs with the tariffs they collect from the users of the services. Per the requirement, it is expected that the maintenance of the boreholes must be carried out in approximately every six months" (Fieldwork, 2015).

To validate the comments of the CWSA Extension Service Specialist, the issue of length of time for the maintenance of the boreholes was examined in the focus group discussion. One of the discussants who live in Piisi lamented:

"Ideally, the maintenance of the boreholes is expected to be carried out every six months. However, in my community [Piisi] for example, this exercise is done annually due to the lack of train mechanic to carry out the repairs and maintenance of the facilities" (Fieldwork, 2015).

From the responses, it can be interpreted that although regular routine maintenance of the boreholes is critical to improve the efficiency of the boreholes to produce considerable quantities and quality of water, nonetheless, the users of the service in the study communities including Piisi persistently experience changes in the length of time in carrying out the routine maintenance of the boreholes in the community. One key factor accounted for this situation in the study

communities such as Piisi was the lack of a trained mechanic to carry out the repairs and maintenance of the boreholes.

According to the literature on decentralization, the decentralized Water and Sanitation policy reform was implemented to resolve some of the shortfalls of the centralized provision of water and sanitation services. For example, under centralized provision of water and sanitation services delivery, the maintenance team toured around the communities and repaired and maintained a number of hand pumps (boreholes) in the districts annually. One key shortfall of this system is that it was ineffective and expensive in practice. However, under decentralization, the practice is that the central agency carries out the original installation, and provides a source of spare parts and training of the local people to carry out their routine repairs and maintenance (Fust, 2006).

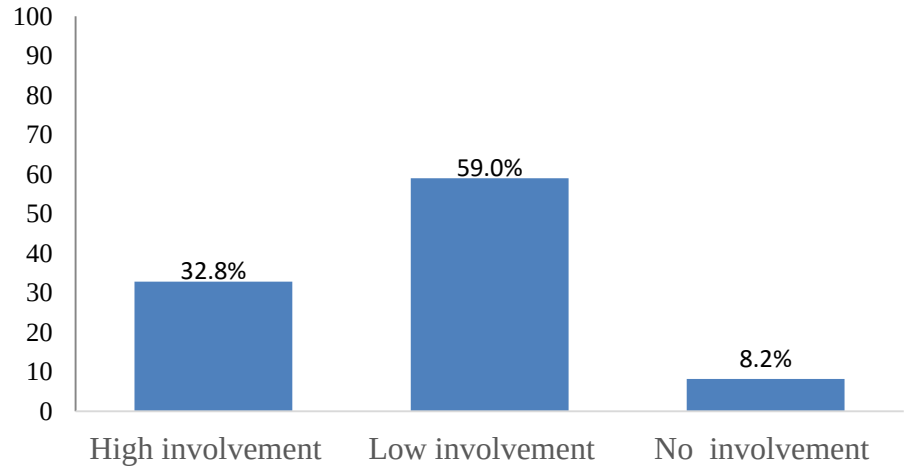
In view of this, decentralization is expected to lead to the improvement and sustainability of the projects due to the following reasons. First, since the repairs and maintenance is done by the local people in every six months, it is likely to help energize the boreholes to work better. Second, when people put much of their time and efforts into the programme they are more determined to maintain it. From the study, it was established that, in spite of the good reasons and intentions behind the decentralization of water and sanitation projects, it had not been able to ease the challenges created by the centralized water and sanitation services delivery in the area of repairs and maintenance of boreholes. This is caused by the elite capture of the financial resources generated from tariffs to train the local mechanics and also purchase the spare parts to carry out the repairs and maintenance regularly.

Corresponding to the findings, it is argued that, decentralization cannot be claimed as a panacea to ameliorate the challenges associated with centralization of water and sanitation services delivery in the study communities, because under decentralization of water and sanitation services delivery, some of the study communities such as Piisi continues to experience similar challenges regarding the repairs and maintenance of the facilities during the period of the centralized provision of water and sanitation services in the communities in the study area. This finding is in contrast to that of the study conducted by Maria and Ashley (2014). According to the

scholars, decentralization is seen as panacea to challenges of social infrastructural delivery in the developing countries. The point is that local governments in developing countries have strong biases toward micro level infrastructure projects. This is because these projects are less costly than large–scale programmes often carried out by central government. As a result, the local government institutions are able to provide the projects with the support of the local train people at a faster rate with high level of performance and general satisfaction to meet the desire and interest of the citizens.

7.2.1.5 HOUSEHOLDS INVOLVEMENT IN ENVIRONMENTAL CLEANLINESS

The efficient operation of community water and sanitation systems can be measured by the households' involvement in environmental cleanliness. In essence, this includes the selection and management of disposal sites, clean-up exercise in market centres, streets, proper covering of wastewater and food items sold in market places and control of animals in confined places. Ideally, environmental cleanliness is the responsibility of the households in the communities. The reason is that environmental cleanliness helps to maintain safe and pleasant physical and natural environment in all human settlements. Figure 14 shows the summary of the findings.



Source: Fieldwork, 2015.

Figure 14 Households involvement in environmental cleanliness

As Figure 14 shows, out of the 354 respondents, 32.8% were highly involved in environmental cleanliness. Whereas 59.0% had low involvement in environmental cleanliness, only 8.2% of the households did not involve themselves in environmental cleanliness. To validate this finding, the issue was probed during the focus group discussion. One of the discussants who live in Sagu remarked:

"*The success of Municipal Assembly Environmental Sanitation Programme depends on the availability of logistics. This will help the Environmental Health Department of the Municipal Assembly to carry out its outreach programme effectively in the communities" (Fieldwork, 2015).*

Similarly, the issue was examined during the interview with the Municipal Environmental Health officer. He stated that:

"Under the decentralization, the households' involvement in environmental cleanliness has achieved success; yet, the problem is that the Environmental Health Department, a key stakeholder in the Decentralization of Water and Sanitation Project does not have sufficient logistics to carry out its activities in the communities in the Municipality. This therefore affects the activities of the Department" (Fieldwork, 2015).

The respondents hold the dominant view that as far as rural water supplies and sanitation services delivery are concerned, a decentralized provision of water and sanitation services is an innovative process approach to help ensure that the services are used appropriately, and maintained for years to come because this approach requires the full involvement of the users of the service in the designing, planning, implementation, monitoring and evaluation. Further, it was established that the lack of logistics had been one of the constraints in decentralization of water and sanitation services delivery. According to the findings, this challenge therefore limits the activities of the Environmental Health Department in decentralized water and sanitation programme.

From the findings, it can be interpreted that decentralization does not automatically lead to improved public goods and services delivery as has always been presented by the advocates of decentralization. The point is that decentralization, operating under poor financial conditions, cannot achieve its success. This is because; the local government might find it difficult to perform its numerous functions

with limited financial resources. In view of the above, it is argued that, decentralization of water and sanitation services delivery in the study communities had not achieved success because the Municipality is not able to raise its own financial resources to procure the needed logistics for the Environmental Health Department of the Municipality to carry out its outreach programme effectively to educate the people on environmental cleanliness in the study communities. This finding corroborates that of Tanzi's (2000). According to Tanzi (2000), in many developing countries, most governments separate the expenditure on administrative work from the financing functions of local governments. This institutional arrangement, which has been the trend in most of the developing countries, is likely to lead local governments into troubles and therefore make them inefficient and appendages to central governments.

7.3 RESULTS OF THE WATER QUALITY TEST

The key requirement for drinking water is that water should be of high quality to the end users. Also, it must be free from pathogenic organisms and toxic chemicals. By water quality, it implies that drinking water standards are expected to be safe so that water supply services will not have any negative effects on the health status of the end users. For example, Coliform bacteria are the universal, non-specific indicator of faecal pollution, or post treatment contamination of water supply. Coliform bacteria, while it is in itself not a disease producer, are typically associated with pathogenic organisms and are a good index of the degree of bacteriological safety of water. However, Escherichia Coliform (*E coli*), a member of the Coliform group, is the most discriminating marker for faecal contamination and thus the microbiological indicator of choice for drinking water contamination (WHO, 2008; 2005). In view of this, the World Health Organization (WHO) has provided guidelines to enable the setting of water quality standards. For instance, in both the developed and developing countries, populations are protected by national regulations which enforce such standards (House et al., 1988). In this study, the bacteriological water analysis was conducted to investigate the presence of Total Coliform and Escherichia Coliform *(E. coli*) bacteria in the sampled boreholes and stored drinking water in the

sampled communities such as Busa, Charia, Kpongu, Kperisi and Nakori.

7.3.1 TOTAL COLIFORM (CFC) IN THE SAMPLED BOREHOLES

The Coliform group of bacteria in water mostly begin in faecal discharges of animals and humans, as well as from many non-faecal sources. Generally, they are heterotrophic, and are thus capable of increasing in numbers in water and soil environments. Total coliform is one of the indicators used to assess water quality standard (WHO, 2008; 2005). Table 14 provides a summary of the results of the presence of total coliform in the sampled boreholes.

Table 14 Results of the water quality test to determine the presence of total coliform in the sampled boreholes

Sampled communities	**Total Coliform (CFU/100ml)**		
Busa	0	0	0
Charia	43	42.4	38
Kpongu	0	0	0
Kperisi	0	0	0
Nakori	33	36.4	40.8
Ghana Standard Authority	0	0	0
WHO Standard	0	0	0

Source: Laboratory Analysis, 2015.

As indicated in Table 14, the results of the bacteriological examination conducted on water from sampled boreholes in the sampled communities in the three phases are as follows: in Busa; the

first phase was 0%, the second phase was 0%, and the third phase was 0%. In the case of Charia; the first phase was 43%, the second phase was 42.4%, and the third phase was 38%. Also, the water quality test in Kpongu revealed the following results: In the first phase, the result was 0%, the second phase was 0%, and the third phase was 0%. Similarly, in Kperisi, the first phase was 0%, the second phase was 0%, and the third phase was 0%. Finally, in Nakori, the first phase of the water quality test was 33%, the second phase was 36.4%, and the third phase was 40.8%. According to the World Health Organization (2008; 2005) and Ghana Standard Authority (1998), water is considered as of high quality and safe for drinking when there are no coliform bacteria per hundred millilitres (100ml) samples of water. From the bacteriological test results, it was evident that water sampled from the boreholes in Charia and Nakori showed the presence of Total Coliform from the point source. Hence, water from boreholes in Charia and Nakori were contaminated from the source.

7.3.2 ESCHERICHIA COLIFORM (*E. COLI*) IN THE SAMPLED BOREHOLES

Escherichia Coliform (*E. coli*) is described as a sub-group of the faecal coliform group. They are mostly found in warm-blooded animals. *E Coli* can cause dangerous diseases including urinary tract diseases and meningitis (WHO, 2008; 2005). This is critical because the presence of *E. coli* implies that water sources are faecal contaminated and thus, the presence of disease pathogens are likely to put the health of the beneficiaries in great risks. As part of the study, the researcher also conducted a test to determine the presence of *E. coli* in the sampled boreholes in the sampled communities (See Table 15 for the detailed results).

Table 15 Results of the water quality test to determine the presence of E. coli in the sampled boreholes

Sampled communities	**E. Coli (CFU/100ml)**		
Busa	0	0	0
Charia	12	15.4	18.6
Kpongu	0	0	0
Kperisi	0	0	0
Nakori	6	12.2	14.6
Ghana Standard Authority	0	0	0
WHO Standard	0	0	0

Source: Laboratory Analysis, 2015.

As Table 15 shows, the results of the bacteriological examination conducted on water sampled from boreholes in the sampled communities in the three phases are as follows: In Busa, the first phase was 0%; the second phase was 0%. The third phase was 0%. Similarly, in Charia, the first phase was 12%, the second phase was 15.4%, and the third phase was 18.6%. Further, in Kpongu, the first phase was 0%, the second phase was 0%, and the third phase was 0%. Also, in Kperisi, the first phase was 0%, the second phase was 0%, and the third phase was 0%. Finally, in Nakori, the first phase was 6%, the second phase was 12.2%, and the third phase was 14.6%.
Corresponding to the findings, it is interpreted that there was presence of *E. coli* in the boreholes in Charia and Nakori. The rest of the communities including Busa, Kpongu, and Kperisi did not have *E. coli* in their boreholes. Therefore, borehole water from Busa, Kpongu and Kperisi was not faecal contaminated; hence, it be concluded that water services supply meet the World Health Organization (WHO)

and Ghana Standard Authority's (GSA) standard for drinking water quality.

7.3.3 TOTAL COLIFORM (CFC) IN HOUSEHOLDS STORED WATER

As part of the study, the researcher further conducted a test to determine the presence of Total Coliform in households' stored water in two communities. In each community, four households were selected for the study. Table 16 provides a summary of the results.

Table 16 Results of water quality test to determine the presence of total coliform in the households stored water

Sampled Communities	**Households**	**Total Coliform (CFU/100ml)**
		Results
Busa	BHSW -1	0
	BHSW -2	0
	BHSW-3	1
	BHSW – 4	0
Charia	CHSW – 1	38
	CHSW-2	26
	CHSW – 3	0
	CHSW – 4	4
Ghana Standard Authority		0
WHO		0

Source: Laboratory Analysis, 2015.

From Table 16, the results of the test conducted to determine the presence of Total Coliform in the households' stored water indicated

that, in Busa, 3 out of the 4 households had no Total Coliform in the stored water. Only 1 household had presence of Total Coliform in the stored water. In Charia, it was also established that 1 out of the 4 households had no Total Coliform in the presence of water, whereas 3 out of 4 had Total Coliform in the households stored water.

7.3.4 ESCHERICHIA COLIFORM (*E. COLI)* IN THE HOUSEHOLDS STORED WATER

The researcher also sought to determine the presence of Escherichia Coliform (*E. coli)* in households' stored water of the selected households in this study. Table 17 provides a summary of the results.

Table 17 Results of water quality test to determine the presence of E. coli in the households stored water

Sampled Communities	**Households**	**E.Coli (CFU/100ml)**
		Results
Busa	BHSW -1	0
	BHSW -2	4
	BHSW -3	0
	BHSW -4	2
Charia	CHSW – 1	15
	CHSW -2	13
	CHSW – 3	0
	CHSW –4	10
Ghana Standard Authority		0
WHO Standard		0

Source: Laboratory Analysis, 2015.

From Table 17, the results of the *E. coli* test conducted on the households' stored water also showed that in Busa, 2 out of the households' stored water had *E. coli* present in it, whereas 2 had no

E. coli present in the households' stored water. It was also found that in Charia, 3 out of the households stored water had *E. coli* in them, whereas, 1 had no *E. coli* in the households' stored water. From the findings, it can be interpreted that the households' stored water in both Busa and Charia had Total Coliform and *E. coli* in them. This implies that there were some amounts of contaminants from both the source contaminants and non-contaminants sources to pollute the households stored water. As a result, the stored water in the households did not meet the WHO (2008; 2005) and Ghana Standard Authority (1998) standard of quality water for drinking and domestic uses.

Corresponding to the study, it was also found that, five key issues contributed to the contamination of water resources at both the household units and the community levels in the five communities. These included the failure of the households to cover their reservoirs and containers for storing water at the household levels, the use of one drinking cup to fetch water from the stored water, the presence of putrefied animals in the groundwater resources, the use of water source by both man and animals and the drawing of water by people who walk barefooted to the water source. These challenges bedevilled the water quality in Busa, Charia, Kpongu, Kperisi and Nakori was chiefly caused by the lack of monitoring and supervision by the District Water and Management Team to ensure that the guidelines regulating the use of water are genuinely applied to safeguard these resources against pollution at the community levels. This finding contrasts with Kendall's (1991) conclusion that local governments in the developing countries is a critical actor with the requisite capacities to monitor and supervise the provision of public goods and services to the people at the grassroot levels (Section 7.4 focuses on sustainability of decentralization of water and sanitation project).

7.4 SUSTAINABILITY OF DECENTRALIZATION OF WATER AND SANITATION PROJECT

The author's operational definition of sustainability is the capability of a system to maintain output at a level approximately equal to or greater than the required average in a long operational life, without excessive drain on the resources of the users or other stakeholders in

the sub-sector. How does one identify the salient sustainability issues in the decentralization of water and sanitation programme in the study communities? Sustainability is not the result of any activity, but of a number of interlinking activities. For this reason, each activity is considered as a building block that provides the foundation for a proper and well organized functioning facility. As part of the discussion, the researcher sought to find out the corporate decision on how to ensure sustainability in water and sanitation project in the study communities. The detail discussions are elaborated in turn.

7.4.1 CORPORATE DECISION ON WATER AND SANITATION PROJECT

One main pre-requisite of water and sanitation projects is that stakeholders in the sub-sector must have a decision making system comprised of appropriate personnel to deliberate on issues in relation to sustainability of the projects. As part of the discussion, the study examined the activities of the stakeholders to help sustain the facilities in the communities. One of the respondents who live in Kperisi remarked:

"*The stakeholders are constantly working as a team to build the physical and the institutional structures in water and sanitation sub-sector to ensure that the existing facilities are sustained, and the new ones are constructed so that we can continue to have access to efficient, quality and sustainable water and sanitation services" (Fieldwork, 2015).*

To validate the findings, the respondents were probed to know whether the users of the services pay the tariffs for future expansion of the facilities. One of the participants who lives in Jonga lamented in one of the focus group discussions that:

"*In fact, many of the households in my community [Jonga] pay required tariffs of 20 pesewas (US$ 0.26) per jerrycan we fetch from the borehole. Our target is to generate enough funds for repairs, replacement and the future expansions of the boreholes in the community, nonetheless, these tariffs we pay are misappropriated by the community water and sanitation boards" (Fieldwork, 2015).*

Similarly, an interview with one of the CWSA Extension Service Specialists on the issue of corporate decision on water supply and sanitation projects revealed an interesting finding. He remarked:

"Honestly, many of the households in the communities pay their tariffs of 20 pesewas (US$0. 26) per jerrycan, simply because they have access to efficient and quality water supply. But the problem is that, the funds are often times misappropriated or misused by the community water board on miscellaneous expenditure. These include travelling allowances to the Municipal Assembly Office for meetings, payment of wages and for daily feeding. This makes it difficult for the communities to undertake the repairs and maintenance, expansion of boreholes, toilet facilities and the replacement of refuse storage containers in the event that these facilities break down" (Fieldwork, 2015).

To validate the findings of the study, the same issue was probed further during the interview with the Community Water and Sanitation Board. The chairman of the board responded that:

"Sincerely, water and sanitation services delivery in rural and peri-urban communities in the Wa Municipality are not free of constraints. Notable among them is lack of funds. As a result, the care takers are not paid by the community. In view of this, the little funds we get from the water tariffs are used to cover our miscellaneous expenditure such as travelling to the Municipal headquarters in Wa to attend workshops in connection with community water and sanitation issues. In addition, we also take our daily expenses from the tariffs whilst at post collecting tariffs from the users" (Fieldwork, 2015).

From the findings, it was established that the Community Water and Sanitation Board generated little funds through the tariffs from the users of the services. However, the little tariffs generated from the users of the services did not actually reflect the benefits the households obtained from the services.

Corresponding to the findings, it can be interpreted that this problem is persisted due to the misappropriation of the funds by the Community Water and Sanitation Board. The implication of this practice on decentralized water and services delivery is that it restricted the capacity of the communities to undertake regular routine repairs and proper maintenance of the facilities and the acquisition of

new facilities to augment the existing ones to improve water and sanitation services in the communities.

This finding strongly reinforces the preceding work of Dethier (2000) who concluded that decentralization cannot lead to efficient allocation of resources at the local level because the local bureaucrats often exercise great influence over the policies and programmes for their personal interest, thereby leaving the poor people with the difficulty of accessing goods and services from the local council. The next section of the study explores the relationship between water and sanitation services and health of the community people.

7.5 RELATIONSHIP BETWEEN WATER AND SANITATION SERVICES AND HEALTH OF THE PEOPLE

Water and sanitation project was financed by the government, and other stakeholders. The comprehensive strategy upon which the community water and sanitation project is anchored included the following: improvement of domestic water supply and sanitation services, health education and community participation, control and reduction of diseases linked with unsafe water and sanitation services, and the provision of diagnostic facilities for treatment of the water supply services (CWSA, 2014). In this section, issues that engaged the researcher's attention included: cases of prevalence of water borne and sanitation related diseases. The discussion was based on empirical field data and documentary analysis. The issues are discussed in detailed in the subsequent section.

7.5.1 CASES OF PREVALENCE OF WATER BORNE AND SANITATION RELATED DISEASES

Another important issue examined in the study was the cases of the prevalence of water borne and sanitation related diseases from 2010 to 2015 in the study communities. Table 18 presents the summary of the findings.

Table 18 Cases of prevalence of water and sanitation diseases, 2010 - 2015

Description of the Cases	2010	2011	2012	2013	2014	2015
Children under five years who contract diarrhoeal diseases	5.9	9.5	10.9	11.5	14.1	12.6
Children under five who experience typhoid fever	0.2	0.4	2.0	4.0	16.2	4.3
Children under five who contract Intestinal worms	1.3	1.4	1.8	5.1	5.5	4.0
Children under five experienced who complicated malaria test positive	15.7	15.0	10.9	22.5	24.0	21.9
Number of people who experienced diarrhoea with blood (Shigella)	0.1	0.1	0.2	0.2	0.2	0.02

Source: Wa Municipal Health Services, 2015.

As shown in Table 18, the cases of prevalence in children less than five years who contracted diarrhoeal diseases in 2010 was 5.9%. The cases increased to 14.1% in 2014. The cases of prevalence in children under five years who contracted diarrhoeal diseases dropped to 12.6% in 2015. In addition, the number of people who experienced diarrhoea with blood (Shigella) in all ages also stood at 0.1%. The cases increased to 0.2% in 2014, and thereafter remained at 0.02% in 2015.

From the findings, it can be interpreted that although decentralized water and sanitation project is seen as an innovative approach to help provide efficient and effective water and sanitation services delivery

to the people to help reduce the incidence of water borne and sanitation related diseases in the communities, nonetheless, the communities continued to witness high cases of prevalence of water and sanitation diseases due to the absence of enabling conditions to support the decentralized water and sanitation project to work effectively in the study communities. These included the poor level of commitment of the District Water and Sanitation Team; a driving force behind the decentralized water and sanitation project to carry out proper monitoring and supervisory role to ensure that quality water and sanitation services are actually delivered in the study communities, inefficient legislative frameworks to regulate the proper use and management of the facilities and absence of frequent education on sanitation and hygienic practices in the communities. This conclusion strongly reinforces Shah and Thompson's (2004) work. According to them, decentralization is one way of achieving productive efficiency, nonetheless, decentralization, like any institutional reforms could not operate successfully if the central government is committed to provide the needed enabling conditions to support the system.

7.6 SUMMARY OF THE CHAPTER

The chapter set out to explore the perceptions and experiences of the users and service providers of rural water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. The pattern of results suggests that decentralized water and sanitation services delivery is not well implemented to improve the socio-economic welfare of the people. This is attributed to the contradictions in the theory of decentralization and what actually happens in practice. Crucially, in Ghana, Section 18 of the Community Water and Sanitation Agency's Act 564 of 1998, acting on the advice of its Board of Directors, give the mandate to the Community Water and Sanitation Agency to facilitate the provision of safe drinking water and related sanitation services in rural communities and small towns in Ghana (CWSA, 2014). The overriding goal is to improve access to efficient, quality and sustainable water supplies and sanitation services to improve the socio-economic welfare of the people in rural Ghana. This study has provided interesting results to enable us gain strong insights on the

theory of decentralization, and how it works in practice. In the first place, the study established that the distance that the people had to cover before they get water had not improved. Waiting in queue at the water point source for water was also a difficult task for the people. To avoid these frustrations, in many communities in the study area, households usually collected water from open and unauthorized sources such as dams, dugouts, rivers, lakes whose quality are doubtful for domestic uses. Similarly, it was also established that the distance to the places of convenience (toilet facilities) had not improved. The toilet facilities were also not cleaned. In view of this, the use of the toilet facilities had become phenomenal to the people thereby making many households resorted to open defecation. Further, it also became apparent in the study that there were widespread issues with this approach of providing water and sanitation services. These issues included misappropriation of funds, difficulty of getting access to available spare parts, problem associated with monitoring and supervision of water quality and sanitation and hygiene education. Taken together, these challenges tend to affect the performance of the decentralized water and sanitation services delivery in the study communities in the Wa Municipality of the Upper West Region of Ghana. These conclusions are further elaborated in the Chapter eight of the thesis.

CHAPTER 8: SUMMARY AND GENERAL CONCLUSION

This chapter is devoted to summary and general conclusion of the study. The chapter focuses on five main issues of concern. The first section highlights the general overview of the study. The second section discusses the summary of the key findings. The third section presents the general conclusion drawn from the key findings of the study. The fourth section focuses on the contributions of the study to knowledge, whilst the final section identifies the areas for further research.

8.1 GENERAL OVERVIEW OF THE STUDY

The study set out to assess the nature and implications of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. The specific objectives of the study were to; explore the challenges of the decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality, assess the perceptions and lived experiences of the users and service providers on the outcomes of decentralization of water and sanitation services delivery in terms of access, efficiency, quality and sustainability in the rural and peri-urban communities in the study area and to examine the relationship between households access to efficient, quality and sustainable water and sanitation services delivery and health of the households in the study communities. As part of the study, various conceptual and empirical issues in decentralization of public goods and services delivery were reviewed. The study was anchored by the Institutional theory and the theory of collective action.

In addition, to obtain actual respondents from the target population in order to achieve the objectives of the study, a sample of 354 respondents was selected from household units of 3060 from the ten selected (10) communities in the Wa Municipality. To find the sample size from the target population, all the communities were listed and mapped out with numbers. Thereafter, ten (10) communities were

selected from the target population using the simple random sampling technique. In each of the selected communities, all the houses were given serial numbers for the purpose of identification of the houses for selection for the study. Eventually, 3060 inhabited houses were located within the ten (10) selected communities. A sample size of 354 was drawn from the sample frame of 3060 at a confidence level of 95% using Fisher, Laing, Stoeckel and Townsend (1998) formula n = $\frac{N}{1+N(\alpha)^2}$ to get the 354 respondents, and 50 officials were purposively selected as key informants for the study.

The study was also aligned with the pragmatic paradigm. Methodologically, pragmatic paradigm allows for mixed method approach-which combines both qualitative and quantitative data. The data for the study were collected from primary and secondary sources. The primary data were collected through the use of questionnaire, in-depth interview and focus group discussion from the respondents such as the users of the services and the key informants (Regional Director, Environmental Protection Agency, Community Water and Sanitation Extension Services Specialist, Director, Water Resource Commission, Regional Manager, Ghana Water Company Limited, Regional Director, Upper West Coordinating Council, Municipal Assembly Members, Municipal Chief Executive, Municipal Coordinating Director, Municipal Environmental Health Officer, Director of the Municipal Health Services, Director, Pronet, Upper West region, WATSANS and WSDBs, Municipal Assembly Members, Unit Committee Members and Women Groups).

The secondary data were based on sources such as Community Water and Sanitation Agency annual reports, Ministry of Local Government and Rural Development bulletins, Ghana Statistical Services 2010 population and housing census report, World Bank annual reports, Academic literature (magazines, periodicals, journals, monographs and books) from the Aalborg University Library in Denmark and the Balme Library of the University of Ghana, Legon. Other secondary data sources focused on were Central Government Budget Statements, Wa Municipal Assembly Budgets, Wa Municipal Assembly financial and health reports, Ministry of Finance annual reports in Ghana, NGOs and External donor agencies annual reports. The analysis of data was done using the Statistical Product and Service Solutions (Version 21) software to capture and deduce the

data generated through the questionnaire survey into frequencies and charts, whilst the qualitative data (which were generated through in-depth interviews and focus group discussion) were transcribed and put into themes based on the objectives of the study. The secondary data were used to complement the primary data for the analysis of the study.

8.2 SUMMARY OF KEY FINDINGS

In line with the reviewed contextual and theoretical literature, the researcher identified three research objectives to guide the data gathering process of the study. This section presents a summary of key findings of the study.

8.2.1 HOUSEHOLDS DEMOGRAPHIC DYNAMICS ON WATER AND SANITATION SERVICES

Water management and sanitation practices were found to be affected by households' demographic dynamics such as level of education, size of the households, religious affiliations, age and income of the respondents. As indicated in the study, water management and sanitation practices were found to be more satisfactory in households with high level of education than households with low level of education. The implication is that, as people are educated, they are able to appreciate proper usage, maintenance of water resources and observe hygiene and sanitation practices.

Furthermore, age of the respondents was also found as a key determinant of the maintenance of hygiene and the usage of water supply services in household units. From the study, it was established that elderly residents in the household units observed sanitation management practices more than the children in the households. For example, it was found that the elderly engaged in sweeping and keeping the sanitation around the water pumps and within the household units. This implies that maturity plays an important role in the maintenance of water supply and households' hygiene and sanitation practices.

In addition, the total income of the respondents was also found to be vital to the management of water supply and maintenance of the

environmental practices in the household units. It was established from the findings that households with low number of dependents coupled with high total incomes paid the tariffs for maintenance of water and sanitation services than households with high number of dependents coupled with low total income. Further, it was observed that the size of the households of the respondents had implications on usage of water and sanitation practices. For example, the study revealed that the larger the size of the households, the more, the household's usage of water and generation of waste. Whereas the smaller the size of the household units, the lower tendency of the use of water and generation of waste. This means that as the size of the household units grow, the level of the use of water services and the generation of waste in the household units are also likely to increase.

8.2.2 INEFFECTIVE LEGISLATIVE FRAMEWORK REGULATING WATER AND SANITATION SERVICES

Households' sanitation practices were found to be influenced by ineffective legislative framework for regulating water and sanitation services. From the findings, it was revealed that a majority of respondents were aware of the legislative framework regulating water and sanitation services, nonetheless, residents in the communities continued to openly defecate in bushes around the settlements, on garbage dumpsites, in streams serving several communities and also dump their refuse indiscriminately in the communities, because the legislative framework regulating water and sanitation services was not effective in that it lacked adequate sanctions in the study communities in the Wa Municipality.

8.2.3 INADEQUATE SOURCES OF FINANCING WATER AND SANITATION SERVICES

Apart from the external support including the external donor agencies, NGOs, faith organizations, private organizations and community support, the District Assembly Common Fund (DACF) and internally generated funds (IGF) were found as the main source of financing the water and sanitation services in the selected

communities. This was vividly revealed in the analysis of trends of sources of revenue for financing the water and sanitation services in the study communities. From the study, it was established that DACF and IGF constituted 59.9% of the sources of funds for the water supply and sanitation projects. It was further revealed that the central government funding (DACF) constituted about 70% of the source of revenue for financing development programmes (such as water and sanitation project) because the revenue generated through the IGF was insufficient. This was caused by the inadequate local capacity for internal revenue mobilization coupled with unavailability of reliable data. This, according to the study, resulted in the failure to provide huge investments on water and sanitation projects to meet the demand of the growing population living in rural and peri-urban communities in the study area.

8.2.4 WEAK COLLABORATION BETWEEN THE STAKEHOLDERS IN WATER AND SANITATION SUB-SECTOR

Collaboration between the external support agencies and other stakeholders on the operation areas was found to be weak. This affected the policies and programmes of the external donor agencies in the decentralized water and sanitation sub-sector. For instance, it was established from the study that although the policy objectives of the external donor agencies were the same, sometimes one external support agency was not aware of the activities of another agency in the rural and peri-urban communities in the study area. In view of this, the agencies end up adopting different standards, equipment and financing mechanism which often affected the overall nature and performance of the programmes in the study communities. According to the findings, this institutional challenge poses a threat to the progress of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality.

8.2.5 MISAPPROPRIATION OF FUNDS BY THE WATSAN COMMITTEES/WSDBS

Misappropriation of funds by the Community Water and Sanitation Board was also identified as a challenge hindering the development of decentralized water and sanitation services delivery in the study communities. Misappropriation of funds in the study communities was created by inadequate transparency and openness in the way the proceeds from the tariffs were spent by the WATSAN committees/WSDBs. This challenge, according to findings of the study accounted for the cause of the long response to regular repairs and maintenance of the facilities if they broke down in the study communities.

8.2.6 LACK OF READY ACCESS TO AVAILABLE SPARE PARTS

Lack of ready access to available spare parts was also found as a constraint to the water and sanitation project. According to the study, spare parts shops were not available at the community level for the maintenance and repairs of broken down boreholes and the sanitation facilities. The spare parts were mostly found in shops in the Wa Township and southern Ghana. As a result, it usually takes the community about three or more weeks before spare parts were obtained from the shops to repair broken down boreholes and sanitation facilities in the rural and peri-urban communities in the Wa Municipality.

8.2.7 POOR HYGIENIC PRACTICES AT THE HOUSEHOLD UNITS

Hygienic practices at households units were also found to be poor leading to a number of water borne and sanitation related diseases. According to the study, this challenge was caused by the low level of water, sanitation and hygiene education programme in some of the study communities. This phenomenon was commonly found in

communities where they did not have WATSAN committees/WSDBs to monitor and supervisor the water and sanitation facilities. This phenomenon, according to the study affected the water quality at the household levels, thereby contributed to water borne and sanitation related diseases in the rural and peri-urban communities in the Wa Municipality.

8.2.8 LOW INVOLVEMENT OF THE BENEFICIARIES IN THE WATER AND SANITATION PROJECT

Involvement of the beneficiaries in the operation and management of the project is important to ensure effective and efficient performance of the community water and sanitation programmes. Such participatory policies imply control of tariffs and management and control of the facilities. Analysis of the trends of the community involvement in water and sanitation project revealed that the community people were not fully involved in the water and sanitation project. For instance, it was established in the study that the views of the people expressed in the meetings on issues on water and sanitation services delivery were also ignored. The point is that the community people were mostly considered as lacking adequate knowledge in the management and control of water and sanitation services delivery in the study communities in the study area.

8.2.9 FAILURE OF INTEGRATING THE DWST INTO THE DECENTRALIZATION SYSTEM

Another key finding identified in the study was that the framework of Ghana's decentralization system and the institutional structures at the district level did not recognize the District Water and Sanitation Team (DWST) as one of the formal structures of the decentralized system. In view of this, the DWST had not been integrated into the formal institutional framework of the Municipal Assembly. This institutional lapse had influenced the level of commitment and the capacity of the DWST to carry out their responsibilities in respect of water and sanitation services delivery in the study communities. From the study, this had an adverse effect on the monitoring and supervision of the

services, leading to the poor performance of the decentralized water and sanitation services delivery in the study communities in the study area.

8.2.10 THE POLITICS OF WATER AND SANITATION SERVICES DELIVERY

The influence of politics was also identified as one of the key challenges facing the water and sanitation projects. Although the decentralization of water and sanitation services delivery required the full involvement of the local people in the designing, planning and the implementation of the programme, it was established that, the local politicians were rather taking the final decisions in the selection of the beneficiary communities for the projects. In view of this, these local politicians sometimes used their position to influence the resource allocation to their electoral areas, where they did not have enough community water and sanitation facilities at the detriment of the underprivileged ones in the study communities. This kind of politics associated with community water and sanitation services delivery had negatively affected equitable allocation of the water and sanitation facilities in the study communities.

8.3 GENERAL CONCLUSION

The key principle of Ghana's decentralization system is to transfer of authority and responsibilities to the district assemblies to perform their functions in their areas of jurisdiction. Besides, the Constitution of Ghana also requires the central government to play an oversight responsibility over the District Assemblies. By implication, the Constitution requires that such oversight responsibility is used to assist the District Assemblies to perform their responsibilities at the local levels. In view of this, in theory, it may appear that the nature of the inter-governmental relations in Ghana is working efficiently and effectively to enhance cooperative governance, but, in practice, it is hierarchical in structure.

Technically, a critical review of Ghana's decentralization system shows that the design of the inter-governmental relations does not help decentralization to function very well in the state largely because

District Assemblies in Ghana face numerous challenges such as insufficient management capacity, poor sources of financing local level programmes, poor level of accountability and lack of participation in the affairs of the District Assemblies in Ghana. Further, the inefficiencies of the District Assemblies to provide basic public goods and services to the citizens can also be attributed to a number of issues. For instance, the decentralization system in Ghana has long been associated with a range of inter-governmental relations that swing between devolving autonomous functions and delegating responsibilities that are apparently contradictory, uncertain and vague. Taken together, such institutional structures and arrangements have a tendency to make District Assemblies under the local government system worthless when performing their roles in the local areas of the state.

More specifically, in this study, the researcher's interest was not to portray the decentralized system of government as a substitute to centralized system of government, but the overriding goal was to examine the nature and implications of decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality. By extension, the focus was to find out how the theory of decentralization as enshrined in the 1992 Constitution operates in practice in the rural and peri-urban communities in the Wa Municipality using water and sanitation services as the case study.

From the study, it was realized that the relationship between the theory of decentralization system in Ghana is more intricate than it appears in practice based on a number of systemic and structural challenges. These challenges are likely to continue to affect the Wa Municipality, since it continues to rely heavily on the central government for financial resources, personnel and logistics to carry out its developmental roles including the provision of community water and sanitation services.

In view of the above, it is argued that although it is a dominant opinion that decentralization promotes allocative efficiency of the provision of public goods and services to meet the needs and demands of the local people on grounds that local governments are closer to the people (Oates', 1999), it is a self -evident truth that decentralization is not advisable for a country such as Ghana, where the District Assemblies do not have the financial capacity, institutional and

administrative authority to carry out their developmental roles in their areas of jurisdiction.

8.4 CONTRIBUTION TO KNOWLEDGE

The study has explicitly identified the policy gap existing between the theory and the practice of decentralization of water supply and sanitation project. Until now, little attention has been given to the challenges responsible to this policy gap. Consequently, this study has contributed to:

i. Shape our knowledge of the policy gap that exists between the theory and practice of decentralization of water supply and sanitation project. Among the key challenges identified in the study which contributed to this policy gap are the ineffective legislative framework, politics of water and sanitation services delivery, lack of coordination and collaboration of the actors in the sub-sector and lack of integration of the DWST into the decentralization system;

ii. Empirically the study has broaden our knowledge on the perceptions and lived experiences of the respondents of the outcomes of decentralization of water and sanitation services delivery in terms of; access, efficiency, quality and sustainability. This is critical because, although there is a high scholarly interest in decentralization since its implementation, to date, very few empirical studies have explored the perceptions and lived experiences of the users and service providers on the outcomes of decentralization of water and sanitation services delivery in terms of; access, efficiency, quality and sustainability. Thus, this study contributes to the existing literature on the decentralization of water and sanitation services delivery; and

iii. Strengthen our knowledge that the socio-demographic and economic variables have a strong relationship in determining households' behaviour and water supply and sanitation services in the Wa Municipality of the Upper West Region of Ghana.

8.5 CONSIDERATIONS FOR FUTURE RESEARCH

In a study of this length on decentralization of water and sanitation services delivery in the rural and peri-urban communities in the Wa Municipality, little can be achieved in the form of breadth and depth of the variables examined. In view of this, future research could be conducted to examine:

i. The safeguarding of the contamination associated with community water and sanitation services delivery in the District Assemblies of Ghana.
ii. The political, social and economic aspects of the community water and sanitation services delivery in the District Assemblies of Ghana; and
iii. The appropriate technology for providing water and sanitation services delivery in the communities in the District Assemblies of Ghana.

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APPENDICES
APPENDIX A: QUESTIONNAIRE FOR THE USERS OF WATER AND SANITATION SERVICES

Date……..... **Questionnaire No……...**
Community …….... **House No……**

Background Information

1. Sex
   1. Male [ ] 2. Female…….. [ ]
2. Age
   1. 18 - 38 2. 39 - 60 3. 61+. …….....[ ]
3. Ethnicity
   1. Dagao 2.Lobi 3. Wala 4. Hausa 5.Sissala 6.Other (Specify)... [ ]
4. Size of the Household:
   1 .1-3 2. 4-6 3.7 and above 4. None..... [ ]
5. Religion
   1. Christian 2. Moslem 3. Traditionalist 4. Other (Specify……..[ ]
6. Educational Status
   1. None 2. Basic 3. Secondary Tertiary .....[ ]
7. Total Income in a month
   1 None 2. 100-200 3.1001…….....…..... [ ]

Decentralization of water and Sanitation Services Delivery

8. Do you know any legislative framework in the Municipality that regulates the water supply and sanitation facilities in the communities? 1. Yes 2. No 3 Do not know..... [ ]
9. Has the legislation of the Municipality helped to improve water supply and sanitation facilities in the rural and peri-urban communities in the Municipality? 1. Yes 2. No 3. Do not know……..... [ ]

Please explain your answer.

10. What has been the major source of financing water supply and sanitation projects in your community? 1. Through DACF and IGF 2. Through NGOs Assistance 3.External Donor Support 4.Contributions of the Community Members..... [ ]
11. In your opinion, do DACF transfers adequate for the provision of local services such as safe water supply and sanitation facilities in the rural and peri-urban communities in the Municipality? 1. Yes .2. No 3. Do not know..... [ ]
Please explain your answer
12. Are you satisfied with the time which the Central Government releases the DACF to the Municipality? 1. Yes 2.No 3. Uncertain 4. Do not know..... [ ]

Households Sources of Water and Storage Condition for Domestic Uses

13. What are your main sources of drinking water in the community? Please mention them.
14. How far does it take you to water point for safe and reliable water supply services? 1. Less than 100m 2.200m-500m 3. 600m and above..... [ ]
15. How frequently do you fetch water for the household use? 1. Regularly 2. Irregularly 3. Emergency 4. Do not know..... [ ]
Please give reason for your answer
16. Who fetch water for the households use? Please give reasons for the answer.
17. Do the households continue to depend on the unprotected lakes, streams, dams as sources of water supply services? 1. Yes 2.No 3.Do not know.....[ ]
18. How many minutes do you wait at the water service point for water supply services? 1.5minutes 2.10minutes 3.20minutes 4. 30 minutes and above……..[ ]
19. How frequently do you clean the water storage containers and reservoirs? 1. Weekly 2.Fortnightly 3. Monthly 4.Occasionally .....[ ]
20. Please explain your answer.
21. To what extent are you concern in dealing with households' water storage condition?

1. Extremely concerned 2.Quite concerned 3. Not concerned .....[ ]

Access, Efficiency, Quality and Sustainability of Safe Water and Sanitation Services Delivery

Water Supply Services

22. How reliable is the water supply services in your community
1. Daily 2. Weekly 3. Monthly.....[ ]
23. How would you rate the quality of water supply services in your community? 1. Excellent 2.Good 3. Poor.....[ ]
24. How would you rate the efficiency of the water services supply to your community? 1. Excellent 2. Good 3. Average 4. Poor 5. Do not know.....[ ]
25. Do you experience rationing of water supply services in the community? 1. Yes 2. No 3. Do not Know..... … .. .[ ]
26. How often do you maintain the boreholes in the community?
1. Every six months 2.Every two years 3. Every three years. 4 Yearly .....[ ]
27. Are you satisfied with the level of water supply service delivery in the communities within the Municipality? 1. Yes 2. No 3. Do not know…..... .[ ]
28. How has been the state of water supply services in your area in the past ten years? 1 Excellent 2. Good 3. Average 4. Poor 5. Do not know….....[ ]
29. Are satisfied with the quality of water supplies in your Community 1. Yes 2. No. 3 Average 4. Poor. 5 Do not know.....[ ]
30. How often the Community Water and Sanitation Agency conducts water quality test for the community 1. Every six months
2. Yearly 3. Every two years 4. Do not know.....[ ]
31. How do you see the sustainability aspect of the projects 1. Good 2. Average 3. Bad 4. Do not know.....[ ]

Sanitation Services

32. What is the level of households coverage with sanitation services in the community?1. High 2. Low 3. Poor .....[ ]
33. What kind of bathing facility is used by your family? 1. Own bathroom for private use 2. Shared separate bathroom in the same

house 3. Private open cubicle 4. Shared open cubicle 5. Public bath house 6. Bathroom in another house 7. Open field inside the house 8. Bath in a river, pond, lake or dam 9. Other (Specify…….....[ ]
34. Do you have toilet facilities in your house? 1. Yes 2. No .....[ ]
35. What form of toilet facility is commonly used by this family? 1. No facility (for example, bush/bush/open field) 2. Water Closet (WC) 3. Pit latrine 4. Kumasi Ventilated Improved Pit (KVIP) 5. Bucket/ Pan 6. Public toilet (for example, water closet, KVIP, Pit Pan) 7.Other (Specify)……[ ]
36. Do your family shares toilet facility with other families? 1. Yes, with other families in the same house 2. Yes, with other families in separate house 3.Yes, with several families located in different house 4. No, private toilet. Please state them……....[ ]
37. How far is your house to the public toilet? 1. Less than 100m 2. 1001m-5000m 3. 5001 m-1000 m.....[ ]
41. Do you pay for it uses 1. Yes 2. No 3. Do not know .....[ ]
38. Do you practice regular hand washing with soap before and after eating visiting the toilet 1.Yes 2. No 3. Do not know.....[ ]
39. To what extent do the households involve themselves in environmental cleanliness in the communities 1. High involvement 2. Low involvement 3. No involvement.....[ ]

Solid and Liquid Waste Generation and Disposal in the Study Communities

40. How do the households dispose of rubbish (refuse)? 1. Burned by the family 2.Public dump (container) 3. Public dump (open space) 4.Dumped in the gutter 5. Buried by the household……[ ]
41. How is solid waste transport to the dump site? 1. Wheel barrow 2. Automatic compactor tucks 3. Do not Know 4. Other specify.....[ ]
42. Which institutions transport the solid waste to the dump site? 1. Zoomlion 2.Contractors3. District Assembly 4. Others Specify….[ ]
43. Which body is in charge of the management of solid waste in dump site in the district? 1. Individual labourers' 2.Private contractors 3. District Assembly 4. Other specify…….....[ ]
44. Mention the main methods of liquid waste disposal in your community.

45. Are you aware that open defecation is a bad practice? Please explain your answer.
46. Are you willing to report a culprit of open defecation, dumping solid waste indiscriminately in the open field to the community water board or the assembly members for fines or sanctions? Please explain your answer.
47. What are your perceptions on the corporate decision making on water supply and sanitation facilities in your community. Please explain your answer.
48. Are you ready to pay higher tariffs for a future expansion of sanitation services 1.Yes 2. No 3. Do not know.....[ ]
49. What is the level of women's involvement in water and sanitation programmes in the community 1. High 2. Low 3. Poor.....[ ]

Knowledge of WATSAN committees/WSDBs in Water and Sanitation Services Delivery

50. Do you have WATSAN committees/WSDBs in your communities? 1. Yes. 2. No. 3.Do not know…….....[ ]
51. If Yes, state the roles of the WATSAN committees/ WSDBs in the water supply and sanitation programme in your community.....[ ]
52. Are you satisfied with the roles the WATSANs committees/ WSDBS play in connection with the water supply and sanitation programme? 1. Yes. 2. No.3. Do not know.....[ ]
53. Mention the challenges which are being faced by the WATSANs committees/WSDBs in the water supply and sanitation programme in your communities in the Wa Municipality.

Role of the Actors in the Decentralization of Water and Sanitation Services Delivery

54. State the roles of the following actors in the decentralized water and sanitation programme in your community.

Actors	**Roles**
Municipal Assembly.....	
NGOs.....	
External Donor Agencies.....	
CWSA.....	
DWST.....	

Health Considerations of Unsafe and Unreliable use of Water and Sanitation Services

55. Do you have knowledge about water borne and sanitation related diseases 1. Yes 2. No 3. Do not know.....[ ]

56. Do you know how these diseases are transmitted? 1. Yes 2. No 3. Do not know .....[ ]

57. How often are you educated on water borne and sanitation related diseases in your community? Please mention them.

58. Mention the water borne and sanitation related diseases in your community.

APPENDIX B: INTERVIEW GUIDE FOR THE USERS OF WATER AND SANITATION SERVICES

Water Supply Services

1. What type of water supply facilities do you have in the community?
2. How many boreholes are in your community? Are all the boreholes functioning in the community?
3. When and how did you get the facilities?
4. State the main sources of water supply for the household use.
5. Mention some of the water borne diseases in your community?
6. Do the households in your community continue to fetch water from the traditional source (dams, wells, ponds, and streams) for domestic uses?
7. Do you have rules and laws set out to regulate and control the use of water in your community? Who set the rules?
8. What do the community normally do to people who break the rules and regulations set to control the use of water? Could you please explain your answer?
9. Do the community members make contributions in the form of cash or communal labour towards operation and maintenance of the water supply facilities? Please explain your answer.
10. What are the roles and constraints of the DWST, NGOs, external donor agencies, WATSAN committees/ WSDBs and women groups in water supply services delivery in your community?
11. Mention the methods that the Municipality uses to select the beneficiaries for water and sanitation programme.
12. Do the households practice animal farming in the communities? What effects do it has on groundwater resources.
13. Mention the effects of politics on water and sanitation service delivery in your community.

Sanitation Services

1. State the main sources from which solid and liquid waste are generated in the community.
2. Mention the main factors that account for solid waste generations in the communities in the Wa Municipality.
3. Which institutions manage and control the final dump site of solid and liquid waste in your community.
4. What type of toilet facilities commonly used by households in your community?
5. Are you aware of any law (s) that regulate solid and liquid waste disposal in your area? Explain your answer.
6. Mention the role of the Zoom Lion in sanitation services management and control in your community.
7. Are you aware of the hygiene education? How often do you get hygiene education in your community, and who organize the education for you.
8. How many times do you clean water storage containers and reservoirs at the households units?
9. Do you practice regular hand washing with soap in critical times; before and after visiting toilet?
10. What do you understand by open defecation?
11. Are you willing to report a culprit of an open defecation, dumping solid waste indiscriminately in the open field to the community water and sanitation boards or assembly members for fines or sanctions?
12. Mention some of the sanitation related diseases you know, which are common in your community.
13. Do you have corporate decision making on the management and control of water and sanitation services in your community?
14. Do the corporate decision making on the management and control of water and sanitation services in your community reflect the payment of tariffs for future expansion of the facilities? Explain your answer.

APPENDIX C: INTERVIEW GUIDE FOR THE KEY INFORMANTS

Water Supply Services

1. What type of water supply facilities do you have in the Municipality?
2. Does the Municipality have a method of treatment of water services supply for domestic uses in the communities?
3. Apart from the CWSA, mention the key actors (stakeholders) in water supply and sanitation programme in your Municipality?
4. What criteria are used to select the beneficiary communities for the CWSA Projects?
5. What are the sources of financing the water supply projects in the communities? Please name them.
6. Does the Municipal Assembly rely on the DACF and IGF as source of revenue for water and sanitation projects? Please explain your answer.
7. Does the Wa Municipal Assembly cooperate with other actors (stakeholders) which have linkages with water supply and sanitation sub-sector?
8. What is the level of quality of water supply services provided for the communities? Please explain your answer.
9. Does the Wa Municipal Assembly monitor the quality of water supply services of the communities? Mention the strategies which are used to monitor the quality of water supply services in the communities.
10. What action is taken when the Wa Municipal Assembly receives report on the poor quality of water supplies from the communities? Please explain your answer.
11. What is the level of accessibility of the households to water supply services in communities? Explain your answer.
12. What is the level of the efficiency of the water supply services for domestic uses in the communities?
13. Do the communities continue to depend on the unprotected lakes, streams, dams as the sources of water supply services? Please explain your answer.

14. In what ways does the Assembly ensure that the water and sanitation projects are sustainable in the communities
15. State the key roles play by the Municipality in water supply services management in the communities.
16. What are the levels of involvement of the following actors; NGOs, women groups and households in the management and control of water supply and sanitation facilities in the communities?
17. What are the effects of politics on water and sanitation service delivery on the communities in the study area?

Sanitation Services

18. What is the state of sanitation services management and control in the communities in the Wa Municipal Assembly?
19. What are the roles of the Environmental Protection Agency in Sanitation control and management in the communities in the Wa Municipality?
20. What is sanitation and hygiene promotion? Mention the issues involved in sanitation and hygiene promotion programme.
21. Mention the actors involved in sanitation and hygiene education in the communities in the Wa Municipality.
22. What is the level of households' coverage with sanitation services in the communities? Please explain your answer.
23. What type of toilets facilities are commonly used by the households in the communities? Please name them.
24. How do the households in the communities dispose of their solid waste generations? Please name them.
25. What factors account for the solid waste generations in the communities in the Wa Municipal Assembly? Please mention them.
26. To what extent do the households involve themselves in environmental cleanliness of the communities in the Wa Municipality?
27. What is the level of women's involvement in water and sanitation programmes in the communities?
28. What role does the Municipal Environmental Health Department of the Assembly plays in water supply and sanitation projects? Please state them.

29. State the role of the Municipal Health Services in water supply and sanitation programmes.
30. Are you aware of the diseases associated with poor sanitation services? If YES name them.
31. Identify some of the water borne and sanitation related diseases affecting the households in the communities in the Municipality.
32. Do you have any by-laws against littering and indiscriminate disposal of both solid and liquid waste in your community? If YES name them. If NO explain why?
33. Do the communities able to enforce the by-laws on indiscriminate disposal of solid and liquid waste in open places in the communities? If YES how is it enforced? If NO why are they not been able to enforce the laws?

Activities of the District Water and Sanitation Team (DWST)

34. What are some of the activities of DWST on water and sanitation programme
35. How regular does the DWST visit the communities to supervise and monitor the activities of the community water boards in the communities?
36. How are the activities of the DWST financed by the Wa Municipal Assembly?
37. Do the DWST organize training for the community water boards? How often this training is organized for the community water and sanitation boards?
38. How does the community water and sanitation board carry out its hygiene and sanitation promotion programme?
39. Do the DWST target a particular group for the hygiene and sanitation education programme? Please explain your answer.

APPENDIX D: INTRODUCTORY LETTERS

Steen Fryba Christensen;PhD
Associate Professor
Institute for Culture and
Global Studies
Kroghstræde 3
9220 Aalborg Øst
Tlf. 9940 9173
sfc@cgs.aau.dk

AALBORG UNIVERSITET

Aalborg, October, 24th, 2014
TO WHOM MAY CONCERN

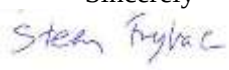
Dear Sir,

REQUEST TO PARTICIPATE IN DOCTORAL RESEARCH SURVEY
Mr. Dominic Degraft Arthur is a PhD candidate from the Faculty of Humanities, Department of Culture and Global Studies, **Aalborg University** Denmark. Mr. Arthur is currently conducting a PhD research on: **Decentralization of Water and Sanitation Services Delivery in Ghana: Empirical Perspectives from the Rural and Peri-Urban Communities in the Wa Municipality of the Upper West Region of Ghana.** Mr. Arthur's topic is fully endorsed by the Doctoral School of the Faculty of Humanities, Aalborg University.

I see the topic as a lively discourse which seeks to provide a great insight into decentralization in the Third World Countries The findings of this PhD thesis are expected to provide useful and significant information to assist Ministries, Agencies and NGOs in Water and Sanitation sector in formulating policies and programmes, which are responsive to improve provision of local basic services (Safe Water Supply and Sanitation Services) in the districts of Ghana. As a PhD supervisor, I would like to request you to participate in the survey of the study. I wish to assure you that all information provided through this survey would be handled with **strict confidentiality.** No reference will be made to the public through the information generated from the survey. The information gather through the survey will be reported in an aggregated form.

For any queries, you can contact the PhD student via phone +233554499381 or e- mail dominic@cgs.aau.dk whilst in Ghana or me at the phone number above.

Sincerely



Steen Fryba Christensen
Associate Professor and PhD supervisor

WA MUNICIPAL ASSEMBLY

TEL: 03920-22284 (MCD, 22285 MCE/FAX) 22003 EXCH
Email: wamunass@yahoo.com

In case of Reply please quote the number and date of this Letter.

OFFICE OF THE MUNICIPAL ASSEMBLY
P. O. BOX, 16
WA, UPPER WEST REGION

Our Ref.

Your Ref. No.....

25th October, 2014

RE: PERMISSION TO CONDUCT RESEARCH IN THE WA MUNICIPALITY, GHANA

Following your request to conduct a research on the topic **"Decentralization of Water and Sanitation Services Delivery in Ghana: Empirical Perspectives from Rural and Peri-Urban Communities in Wa Municipality of the Upper West Region"**. I am happy to inform you that the Assembly has granted you the permission to go ahead with the research.

2. It is therefore our hope and expectation that, the Wa Municipality would equally benefit from the research findings.

3. Wishing you the best of luck in your endeavor.

4. Thank you.

FOR: MUNICIPAL CHIEF EXECUTIVE
(KATUMI YAKUBU)
ASSISTANT DIRECTOR IIB

TO WHOM IT MAY CONCERN

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