

PRESBYTERIAN UNIVERSITY COLLEGE, GHANA
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**ASSESSING THE ACTION PLANS OF THE NATIONAL WATER POLICY IN
IMPROVING GHANA'S URBAN WATER SUPPLY.**

A dissertation submitted to the Department of Rural and Community Development of the Faculty of Development Studies, Presbyterian University College, Ghana in partial fulfilment of the requirement for the award of Master's Degree in International Development Studies



BY
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AUGUST 2020

DECLARATIONS

Candidate's Declaration

I hereby do declare that, except for the references to other people's work which have been cited, this dissertation is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

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Date:

Candidate's Declaration

I hereby do declare that, the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of projects work laid down by the Presbyterian University College, Ghana.

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Date:

DEDICATION

This work is dedicated to the memory of my late mum, Juliana Ashiabi Dadoho and my family.



ACKNOWLEDGEMENTS

I am grateful to the Almighty God for his providence and sustenance of me throughout this course at the Akuapem Campus of the Presbyterian University College, Ghana. I am equally grateful to all faculty members who supported in diverse ways to the completion of this work.

I am also highly appreciative of the support of my supervisor Dr. Richard Amfo-Otu and also the immense contributions of my course mates which have all shaped the conduct of this work.



ABSTRACT

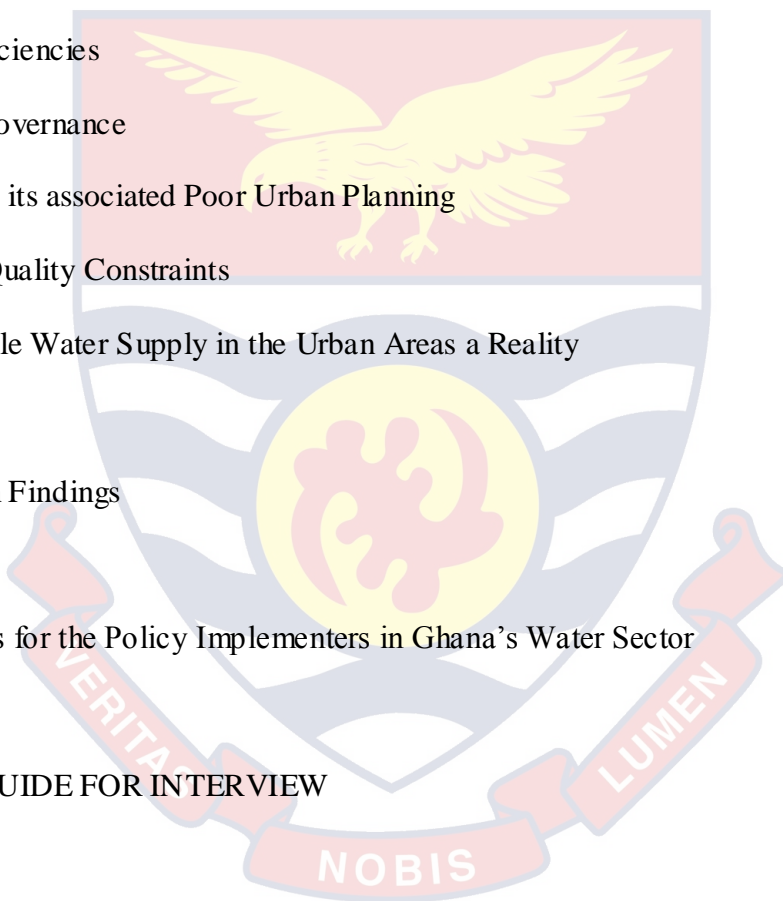
Water accessibility is a key focus area featured in the Ghana National Water Policy. Implementing agencies have been tasked by the policy to undertake key activities as part of measures and or action plans to improve on the urban accessibility to water. This study aimed at assessing the progress of Action Plans of NWP by implementation agencies towards achieving the strategic objective of urban water supply in Ghana. Data was collected through key informant interviews conducted with a total of twelve officials spanning across key institutions assigned responsibilities by the NWP including GWCL, PURC, MSWR, NDPC, WRI, CWSA, CONIWAS, and WRC. Most of the participants had served for over 5 years in their respective institutions. Participants revealed that in spite of proposed measures backed by the policy, implementation plans have been inadequate in improving accessibility to water in the urban sector. The study further revealed that key challenges affecting the holistic implementation of policy measures included; (1) the lack of an over-arching legislation within the water sector; (2) fragmented attempts by various institutions instead of a sector-wide coordinated approach in the implementation of action plans as well as (3) the shelving of critical research findings on risks posed to waterbodies by the mining sector. It is therefore recommended that (1) the establishment of policy indicators; (2) sourcing of sustainable funding for expansion of water supply infrastructure; (3) improvements in the operational efficiency of GWCL; (4) improved governance and accountability through the enactment of an overarching sector law; and (5) the establishment and sustainable funding of Pro-Poor Units in GWCL, will contribute to the rapid progress with plans to improve accessibility to water supply in the urban space.

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LIST OF KEY ABBREVIATIONS AND ACRONYMS

CONIWAS	Coalition of NGOs in Water and Sanitation
CWSA	Community Water and Sanitation Agency
GoG	Government of Ghana
GSA	Ghana Standards Authority
GWCL	Ghana Water Company Limited
MDG	Millennium Development Goals
MMDA	Metropolitan Municipal and District Assemblies
MoH	Ministry of Health
MSWR	Ministry of Sanitation and Water Resources
MWRWH	Ministry of Sanitation and Water Resources
NPDC	National Development Planning Commission
PURC	Public Utilities Regulatory Commission
SDG	Sustainable Development Goals
WATSAN	Water and Sanitation
WRC	Water Resources Commission
WRI	Water Research Institute



CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The importance of water supply cannot be overemphasized. Water is essential to life hence the relevance of its quantity as well as quality. In recent times, scarcity of water has become topical in terms of both quality and quantity of the commodity. Population growth and urbanization have also put tremendous pressure on water resources the world over. Water supply has featured strongly in the key objectives of the United Nations' Sustainable Development Goals. Goal 6 is geared towards ensuring access to water and sanitation for all (U.N, 2015). But it is also important to note that the achievement such a goal and any other water-related goal of the SDGs may seem unrealistic in an era of competing interest for water from other sectors locally and globally. All the same, there could be continuously improved access to water for the increasing global population when there are properly formulated and implemented regulations in place to guide the water supply chain from catchment to end-user. These regulations could ensure that issues of competing interests with regards to resource management as well as safeguarding the quality to ensure improve public health is carried out appropriately.

In Ghana, the document mostly referred to with regards to water is the National Water Policy (NWP) which was formulated in 2007. The policy document spells out some responsibilities to be assumed by certain institutions towards ensuring the successful attainment of the policy objectives. Over the years, most of the institutions have bemoaned one factor or the other which have militated against their roles as implementing agencies of policy plans. This has ensured that not so much has been

attained as regards the implementation plans of key focus areas of the NWP, much to the concern of water sector stakeholders in Ghana.

1.2 Problem Statement

Key institutions within the Ghanaian water sector have derived their mandates from the legislations such as the Acts of Parliament which established them and spells out their specific roles/functions. Some of these roles have also been re-echoed in the NWP and ascribed to the principal sector agencies. The roles of the principal sector agencies are to be complemented by allied institutions (MSWR, 2007). Following the NWP, the Water Sector Strategic Development Plan (WSSDP) was developed to identify and address current and evolving bottlenecks in the delivery of water and basic sanitation services in Ghana. Further to that, the WSSDP also emphasized Ghana's commitment to operationalizing the objectives and implementation strategies in its National Water Policy to ensure improved access to basic levels of water and sanitation services by 2025 (MSWR, 2014). The significance of institutions as implementers is again highlighted in the institutional framework for implementing the WSSDP. After over a decade of its development, it has become imperative that the responsibilities spelt out in the NWP to be evaluated.

1.3 Objectives

This study generally aims at assessing the progress of Action Plans of NWP by implementation agencies towards achieving the strategic objective of urban water supply in Ghana. Specifically, the study seeks to achieve the following objectives:

1. To analyse policy objectives and action plans of the NWP that are geared towards improving the accessibility of urban water supply in Ghana.
2. To assess the adequacy of action plans targeting improvement in access to water supply in urban areas.
3. To examine the challenges confronting the implementation of these action plans in urban water supply in Ghana.

1.4 Research Questions

1. What are the key policy objectives and action plans of the NWP focusing on improving access in urban water supply in Ghana?
2. What are the levels of progress with these action plans and how are they targeted at improving access to water supply?
3. What are the challenges confronting the agencies in their bid to ensure the implementation of these action plans?

1.5 Relevance of the Study

The complexity of increasing societal problems presents challenges to how policies are formulated and implemented. This study has implications for the understanding of how NWP is being implemented via the responsibilities and roles of their various institutions. The study will attempt to proffer an ideal framework which highlights what has been achieved and what is outstanding for both principal sector agencies and allied sector agencies in harmonizing the roles of regulations and regulators within the water provision value chain. The study will benefit the field of academia by further enriching and enhancing the body of knowledge in the area of water supply

particularly in throwing more light on the complexities of policy objectives and the realities of access to water in urban areas.

1.6 Limitation

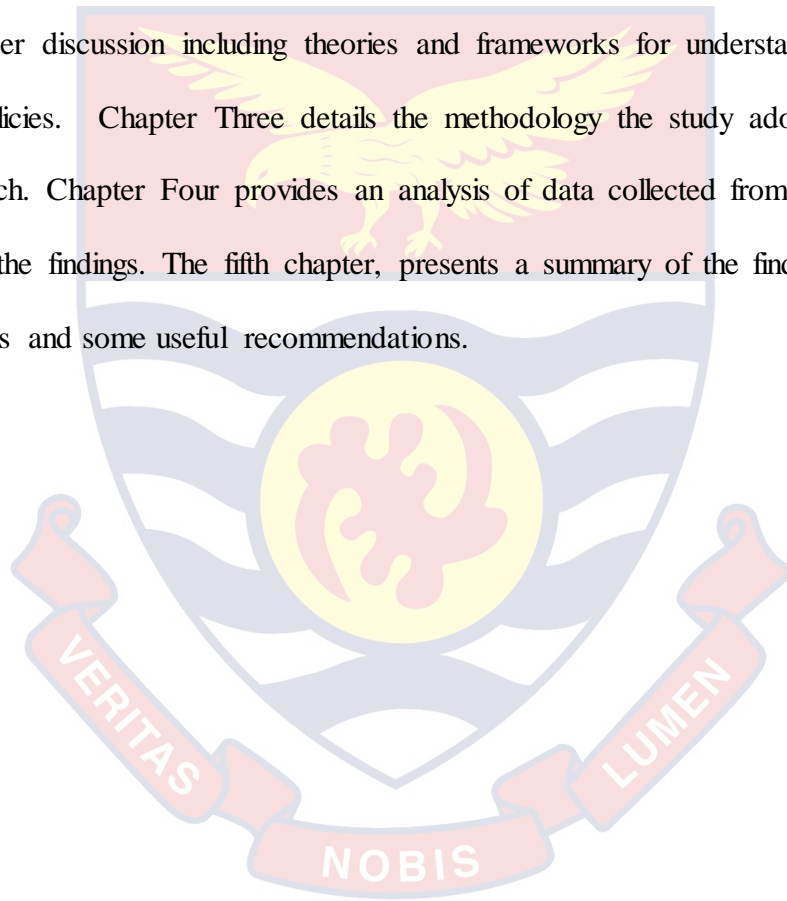
The study therefore focused on institutions that have been mandated by the NWP to put in specific measures towards addressing accessibility to water in urban Ghana. Institutions assigned with responsibilities and roles other than those geared towards improving accessibility to water supply in the urban sector were not considered by this study. The conduct of this research was partly affected by the high-level of bureaucratic culture associated with data collection from public sector institution. For this reason, some of the higher management in some institutions delegated junior representatives to provide information during the interview process hence some representatives could not adequately provide answers to some of the questions posed to them. The data collection was further affected by the prevalence of CoV-SARS 2 (CoVID-19) which limited access to the premise of some sector institutions.

1.7 Delimitation

In spite of the aforementioned limitations with the conduct of this study, data collection was expedited through tele-conferencing applications such as Zoom and Microsoft Teams in certain instances where it became impossible for the researcher to meet the participants in person. This interaction although did not auger well for participants who were technologically averse, others who were abreast with these platforms had little or no reservations about their use.

1.8 Organisation of the Study

The study is organized into five chapters, with Chapter One providing an overview of what the study sought to achieve. It provides the background by introducing some basic national water supply issues and its justification. Chapter one therefore highlights the research objectives, the research questions as well as the significance of this study. Chapter Two comprehensively presents a review of the relevant studies on the issues under discussion including theories and frameworks for understanding urban water supply policies. Chapter Three details the methodology the study adopted to carry out the research. Chapter Four provides an analysis of data collected from the field and also discusses the findings. The fifth chapter, presents a summary of the findings of this study, conclusions and some useful recommendations.



CHAPTER TWO: REVIEW OF RELATED LITERATURE

This chapter comprehensively presents a review of the relevant studies on the issues under discussion including theories and frameworks for understanding urban water supply policies. The chapter looks at the global overview of water as a resource, sources of water supply, existing institutional and legal framework in urban water supply and in the roles and responsibilities of key institutions. The chapter also covers gaps and challenges of the water sector in Ghana.

2.1 Global Outlook of Water

Globally, water scarcity has been propelled by increasing human population and climatic variation driven by climate change. Ongoing mismanagement of resources and improper planning in most developing countries have also led to the overexploitation of water resources such that the impacts have been overwhelming. According to the United Nations, about 1.8 billion people globally could be living in areas with absolute water scarcity. And about two-thirds of the global population, mostly those in developing countries will face moderately to high water stress issues and also problems of water scarcity (UNICEF & WHO, 2008).

2.2 Drinking Water Availability in Ghana

In recent times, there has been heavy investment into both rural and urban water provision translating into the construction of water treatment plants in some parts of Ghana. This development has been driven mainly by the commitment as a nation towards the attainment of the Millennium Development Goals. Following to these, about 79% of the population use improved drinking water sources with wide disparities among the

regions and also in rural and urban set up as the figure drop to 69% in rural areas. Rural areas comprise about half of the population. Regardless of this achievement, there are still about 6 million Ghanaians who are without access to improved water supply (Salifu, 2012). It was revealed during the study that for households with unimproved sources of water, 17% treat their water using the appropriate water treatment method before drinking. However overall, only 9 % of the population treated their water and mostly by straining through a cloth. In urban areas, 28% of population use sachet as the main source of drinking the figure is higher in Greater Accra region where 47% of population drink sachet water, followed by Eastern 15.3%, Western 14.6% and Central Region 13.4%. Tube wells or boreholes are the most common source of drinking water in all regions. Currently, groundwater serves as the main source of water for domestic uses for over 95% of water provided to small communities and towns. There are only 46% of public schools (total number of schools in Ghana 36,746) with improved drinking water sources within their premises.

Over the last few years, poor quality and intermittent supply of water in urban areas have resulted in increased use of sachet water. It has been reported that sachet water is being used in many homes, hospitals, even in theatres and delivery rooms. Due to insufficient regulatory mechanisms, indeed sachet water is a possible route for transmitting diseases, both from its contents and the container. Ghana Living Standards Survey-6 (Ghana Statistical Service, 2013), suggests that 32% of households in the country used wells as the main source of drinking, 29% use pipe-borne water, while 30% households relied on sachet, tanker, etc. In rural areas, 74% of households use either a well (55.3%) or natural sources (18.6%).

Sources of Water Supply

Urban sources

Generally, urban communities in Ghana abstract the larger share of their water supply from surface freshwater sources via dams and other diversion structures for onward treatment to meet health standards. Surface water sources can probably serve all urban needs for the near future through corresponding programmes of development and conservations (Integrated Social Development Centre, 2011). For convenience sake, however, private individuals who can afford rely much on groundwater supplies through either hand-dug-wells without pumps or boreholes fitted with pumps.

Rural sources

In Ghana, rural communities have mostly traditionally relied on water from surface and ground sources to meet their water demands. These communities have relied on a mix of protected and unprotected water sources. Nyarko et al., (2008), indicates that the surface water sources used by rural folks include, ponds, rivers, impoundments from dams, ephemeral streams and harvested rainwater from roofs whilst their groundwater supplies are obtained from hand-dug wells with or without hand pumps, boreholes fitted with hand pumps, and springs. Akuffo et al., 2013 and Awuah et al., 2009 further noted that as part of the official policy to provide potable and safe drinking water for all rural communities in Ghana, various stakeholders have adopted the rural water supply 12 schemes which are exploited mainly from groundwater sources particularly through hand-dug wells and boreholes fitted with hand pumps. These traditional systems are often insufficient both in quantity and quality.

According to Luczaj & Masarik, (2015) the quality of groundwater in Ghana is generally good and accounts for a large share of the potable water supply in rural communities.

Indeed, groundwater sources appear to be the key to the development of rural water supply and this reflects in its exploitation by the various stakeholders in the rural water sector and should therefore be managed and utilised on a sustainable basis to meet future challenges. However, it has to be emphasized that due to geological limitations it is not everywhere that groundwater is available especially in the required quantities. Some rural communities, therefore, have to rely solely on surface water sources whilst others have to resort to conjunctive use of both surface and groundwater sources.

Politics of Water

Zetland in 2014 suggested that politics is associated with the provision of water as a social service such that once beneficiaries can use their numbers to see decisions reverse or policies scrapped, politicians are always guided by the fragile nature of the socio-economic issues around water. It may not necessarily matter whether there is a perfect competition or the service provider is a State-owned Enterprise (SOE). In one breadth, SOEs may be particularly concerned with low prices; however, politicians in their bid to appeal to electorates tend to make promises without necessarily considering the adequacy of government's funding sources. For this reason, excessive political meddling in the operations of water utilities only results to inefficiencies: non-cost-reflective tariffs impacting heavily on the revenue requirements. In the end, existing infrastructure bears the brunt for the lack of maintenance and network expansion.

Besides, citizens are mostly ill-informed about the financial sustainability of the true cost of the utility (and promises) mainly because the true state and performance of the provision of the service are often overlooked. As a result, governance and incentives are frequently fuelled by pressures from powerful elements in political circles who may be

representing their interests or those of particular constituencies, or some other external agencies. It is also not uncommon to find as a result of social sensitivity, special interests geared towards the protection of vulnerable groups, existing policies and regulations. To remedy the aforementioned problem, mechanisms to insulate both the regulator and the utility from constant political pressures must be put in place. The latter is important to engender the basing of key decisions on long-term financial, economic, and engineering considerations.

The complexities of corporate governance in a heavily polluted political environment can mean that some utility companies become more powerful than their sector regulators (especially when a sector ministry tends to shield the utility from regulatory rulings). The prevalence of this situation usually results in a myriad of problems for the sector. Classic examples may include the resolution of tariff issues outside the formal regulatory system; some utility managers by-passing formal processes; or total failure to comply with regulatory instructions. However, when the independence of regulatory bodies is allowed to manifest through ensuring water utility performance, the governance structures (including appointments to regulatory commissions, Boards of Directors, and leadership positions in SOEs), these translate to dramatic improvements in performance. Indeed, there are numerous examples where this is the case.

Many studies have focused on the performance of state-owned regulated water utilities in both developed and developing economies. The analysis of some of these case studies has helped the conclusion that standard tools of regulation cannot be significantly effective in improving water sector performance without major changes in the supporting institutions, (Ehrhardt & Janson, 2010).

Possible Gaps in Water Sector Regulations

Regulations, in general, may not cover every area of a sector and this presents the opportunity for gaps to emerge as time goes on. Some key gaps inherent in national legislations have been outlined below as indicated by Berg, (2002): Policy gap - overlapping, unclear allocation of roles, and responsibilities; Administrative gap - Mismatch between hydrological and administrative boundaries, with implications for long term sustainability of utilities if they are forced to turn to high-cost water sources, such as desalinization; Information gap - Asymmetries of information between central and sub-national governments, and between utilities and governments, and consumers; Capacity gap - Lack of technical capacity, staff, time, knowledge, and infrastructure; Funding gap - Unstable or insufficient revenues of national, sub-national, and local municipal governments to effectively implement water services policies, and to invest and operate infrastructure; Objective gap - Competition, and lack of coordination, between different ministries; and Accountability gap - Lack of citizen concern and awareness about water service policy, plus low involvement of water users' organizations, where lack of data and participation limits the ability of affected groups to raise concerns in public forums.

Ghana's Policy Framework for Water

Ghana as a country has relied on policy direction from the World Bank in shaping its water sector. Two major policies backed by the World Bank have come to the fore for the Ghanaian Water Sector is concerned and these have been *Decentralization* and *Separation*.

Decentralization

The Government of Ghana in 1988 rolled out the implementation of its Decentralization policy to devolve certain fiscal, administrative, and development responsibilities from the central government to the district assemblies. Since then, difficulties in raising sufficient revenue to address poverty in rural districts, these areas have witnessed severe distress in the provision of certain amenities. This development had only meant that decentralized water projects may not adequately be financially supported by dwindled resources. Therefore, this implied that decentralization has only increased participation, accountability, and transparency. It ultimately became obvious that the concept was driven primarily by fiscal concerns – that is, the desire to reduce central government expenditures and increase the revenue generation responsibilities at the district level. The primary aim of the World Bank was to reduce the government's deficits and improve the government's loan repayment ability. This focus, therefore, did not only set the stage for the devolution of the responsibility for the provision of drinking water and sanitation services to the districts, but it also passed some of the responsibility for the government's international debt burden repayment to the impoverished rural and semi-rural areas.

Separation of rural and urban water services

During the fiscal years of 1993 and 1994, Ghana began to implement a World Bank-backed policy to separate the seemingly viable urban water supply systems from the insolvent and loss-making rural water systems. The same policy also passed the responsibility for sanitation and wastewater management on to the already burdened local assemblies. The World Bank's concept of unbundling was to project a segment of the Ghanaian water sector as an attractive area of investment to foreign capitalists, something that can best be described as “cherry-picking” or “seeking low hanging fruits”. Before

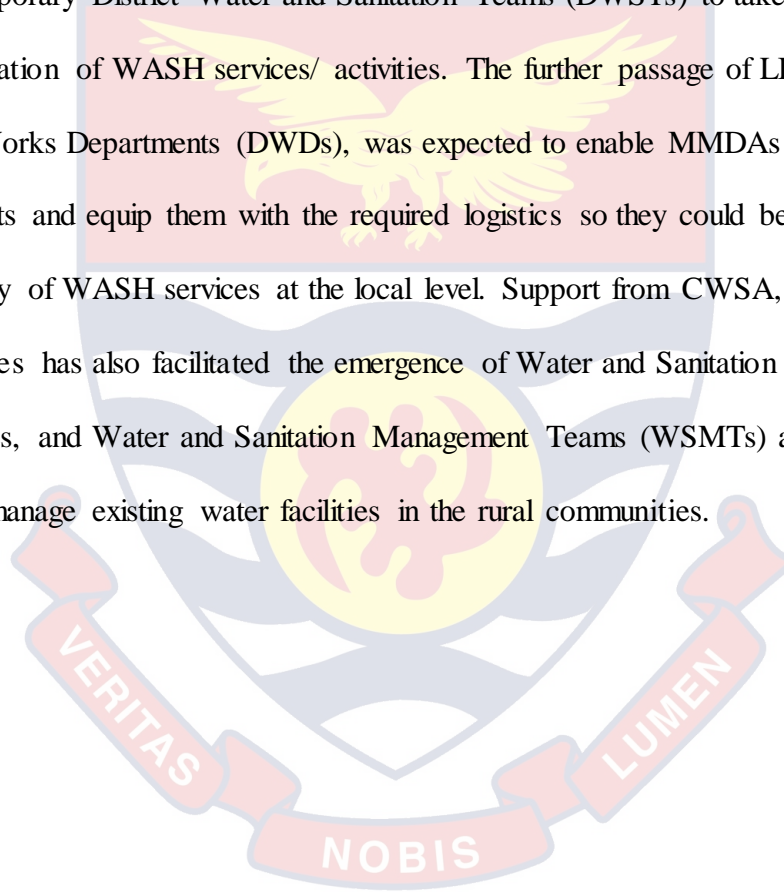
the segregation policy, Ghana had an integrated water and sewerage system, which saw to the management of drinking water and sanitation together as one unit which allowed for cross-subsidization. In those times, the integration allowed citizens and industrial set-ups in metropolitan and urban areas to support the delivery of water to the comparatively poorer rural communities through the payment of certain levies. This was curtailed once the concept of unbundling of the services was pursued hence less endowed district and municipal authorities are unable to meet the water and sanitation needs of their people.

Institutional Arrangements in the Water Sector

Ghana prides itself on some significant progress in the area of institutional reform and alignment within its water sector. Notable gains amongst these are, the transformation of the one-time Ghana Water and Sewerage Corporation (GWSC) into the Ghana Water Company Limited; the establishment of the Community Water and Sanitation Agency; the introduction of community management of rural and small towns water and sanitation facilities within the framework of the National Community Water and Sanitation Programme (NCWSP) and the establishment of the Water Directorate and the Environmental Health and Sanitation Directorate at the then MWRWH. The reforms were necessitated by the issues that bedevilled the water sector over the years. Whilst some of these issues were believed to be systemic of the sector agencies at the time, others were perceived as symptoms of external pressures on a typical third world country. Key amongst the countries challenges was the fact that reporting on sector progress and tracking of investments from donor partners, MMDAs, Non-Governmental Organisations (NGOs), and the private sector has been wrought with challenges mainly owed to the lack of a harmonized system for the allocation and disbursement of sector funds. There has

been inadequate information on the contribution of NGOs to the sector due to the weak regulatory and reporting framework. The absence of a strong decentralized department to support water service delivery at the district level was also an issue that the nation contended with.

The work of the CWSA was timely in assisting the Municipal and District Assemblies to set up temporary District Water and Sanitation Teams (DWSTs) to take charge of the implementation of WASH services/ activities. The further passage of LI 1961 to establish District Works Departments (DWDs), was expected to enable MMDAs to set up these departments and equip them with the required logistics so they could be more effective in the delivery of WASH services at the local level. Support from CWSA, MMDAs, and communities has also facilitated the emergence of Water and Sanitation (WATSAN) Committees, and Water and Sanitation Management Teams (WSMTs) at the sub-district levels to manage existing water facilities in the rural communities.



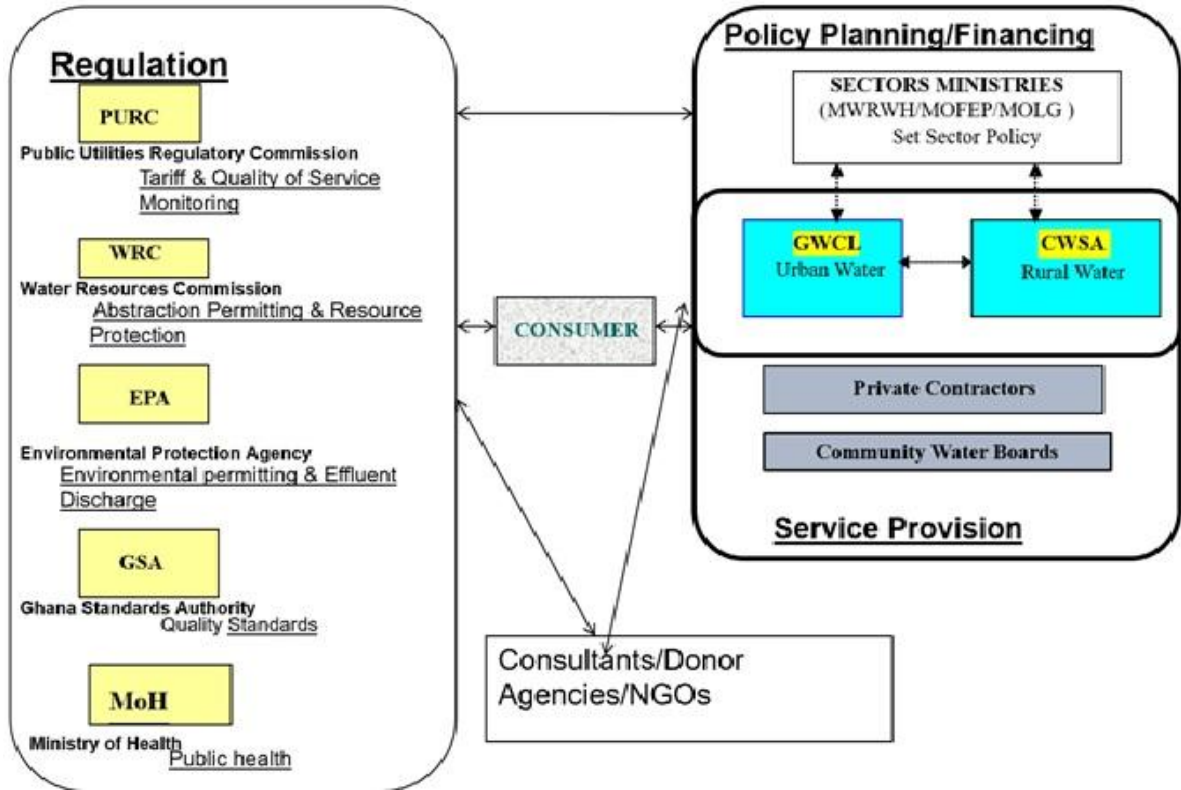


Figure 1: Water Sector Institutional Framework Arrangement

Source: Awuah et al., (2009)

Principles or rules (written and unwritten) define institutions by assigning them with their roles and responsibilities, hence facilitating how they interact with others.

Generally, most institutions in the water sector are shaped by: statutory laws, legal instruments, and regulations; national policy frameworks; bye-laws of District Assemblies or local groups; local law/self-regulation by either explicit or implicit rules and norms, “project law” including procedures of financial disbursement and procurement. Furthermore, some activities of these institutions may be influenced by market frameworks and relationships. Table 1 below lists out some key water sector institutions and their core mandates.

Table 1: Water Sector Institutions and Summary of their Roles

INSTITUTION MAIN ROLES AND RESPONSIBILITIES

PURC	Economic and quality of service regulation for urban water supply
GSA	The setting of national drinking water standards
GWCL	Provision of urban water supply
WRC	Protection and regulation of water resources in Ghana
WRI	Research into water quality and make recommendations to inform government policies
GHS/MOH	Provision of national health policy. Prevention & management of communicable diseases (that includes those that are water-related eg. cholera)
NDPC	Formulation of national development plans and policy.
CONIWAS	A coalition of NGOs involved in the provision of water supply and sanitation services
EPA	Responsible for environmental (air, land water) protection
MSWR	Policy formulation for the Ghanaian water sector
MLGRD	Environmental sanitation policy formulation, which includes water Hygiene. Development of Household Water Treatment and Safe Storage (HWTS) strategy

Source: Adapted from Ghana National Water Policy, (MWRWH, 2007)

Sector Regulations: Laws, Policy and Guidelines:

National Water Policy and Programme

For both the rural and urban water sectors, policy areas are set by the Water Directorate of the then Ministry of Water Resources, Works and Housing (MWRWH). In addition to its policy formulation role, the ministry also solicits funding from external support agencies, monitors, and advises the Cabinet. The Water Sector Restructuring Secretariat,

created in 1997 in the MWRWH, oversaw the process of private sector participation in the sector. The existence of a multiplicity of institutions most of which are armed with overlapping responsibilities is one main problem that partly arose from the reforms. To overcome the lack of coordination between the numerous institutions, some of which had been in existence since 1993, a National Water Policy (NWP) was launched in February 2008, to introduce a comprehensive sector policy and focus on three strategic areas: water resources management; urban water supply; and community water and sanitation.

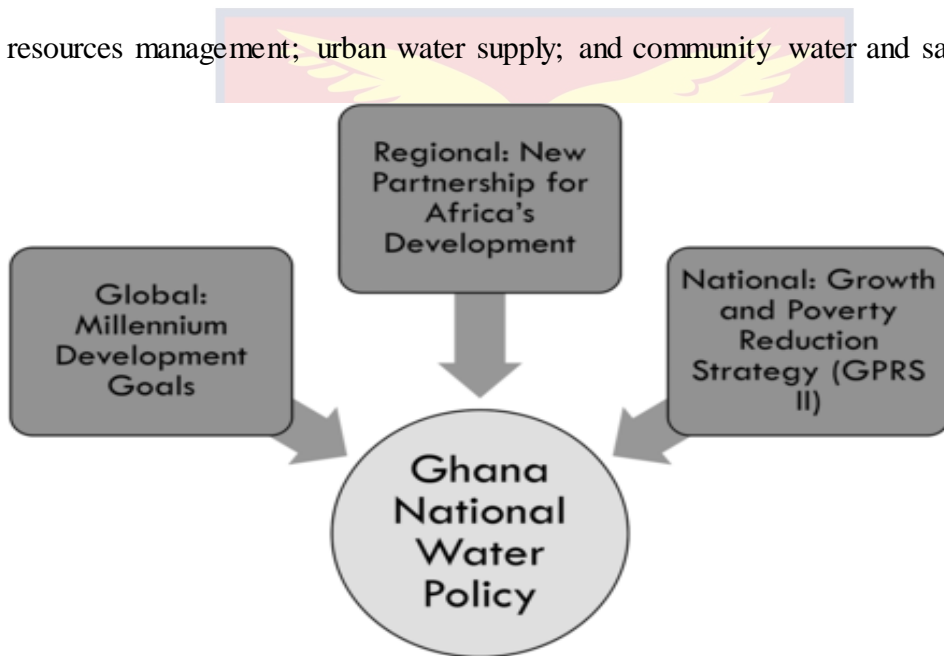


Figure 2: Strategic Areas of the Ghana National Water Policy

Source: (Monney & Ocloo, 2017)

The policy had the aim to envelop all relevant actors in the sector and make it easier for development partners to provide the necessary support to the sector. The NWP was prepared by the Ghana Water Resources Commission (WRC) since 2002 and is based on the Ghanaian Constitution of 1992, the Ghana Poverty Reduction Strategy (GPRS), international agreements and conventions, and other national programmes (MWRWH, 2007).

Rural Water Policy

Demand Responsive Approach (DRA) drives the policy for the rural water sector, whereby communities file for assistance through the District Assemblies (DA) for the supply of potable water supply starts with the application. A key principle of the National Community and Sanitation Policy is the requirement for beneficiary communities to pay 5-10% cash contribution towards the capital cost of the least-cost, technically feasible water facility option with the intent of involving the beneficiary communities to demonstrate their commitment, sense of ownership and responsibility (Limanto1, 2009)

National Community Water and Sanitation Programme (NCWSP)

The NCWSP which was launched by the government in 1994 is managed by CWSA through its national and regional offices. It is a national programme tasked to deliver rural water supply and sanitation facilities and funded by several donors and the Government of Ghana. The main donors are the International Development Association (IDA), Danish International Development Agency (DANIDA), Canadian International Development Agency (CIDA), and the French Development Bank (CFD) (The World Bank, 2010). The real implementation of the NCWP is carried out by the District Assemblies (DA's) through the District Water and Sanitation Teams (DWSTs). The NCWSP focuses on three main objectives to achieve health improvements: safe water supply, hygiene education, and improved sanitation (CWSA, 2014). These objectives in line with provisions of the *Community Water and Sanitation Agency Act*, 1998 are to: provide access to water and sanitation services for rural communities and small towns in Ghana; ensure the sustainability of water and sanitation facilities provided; and maximize health benefits by integrating water, sanitation and hygiene promotion.

Challenges with Water Policies in Ghana

Generally, the National Water Policy did well in outlining strategic actions for IWRM, climate change adaptation, gender mainstreaming, and transboundary water resources management. The policy however ignored some country-specific water management issues. It was apparent that the institutional framework for implementation had little or no place for institutions charged with mandates over land management and resource extraction. This will probably account for the nation's inability to find a solution to the perennial pollution and contamination to water bodies posed by Ghana's extractive sector. Timelines for policy review and update are absent and there are no indicators for monitoring progress towards the policy goals.

For the future, the National Water Policy requires a review to reflect the current global and national development agenda. The existence of concepts of privatization and social agenda/programmes in the same policy document presents complications for the implementation of either agenda. It is therefore important that Ghana as a sovereign nation may have to make a bold decision on what will suit it in the context of service provision. Monitoring and evaluation of the policy should be based on measurable indicators and strategic policy actions should not be vaguely outlined but must be allotted to institutions who would be made accountable for such actions. This will require, among others, harmonizing the indicators for monitoring water coverage countrywide. Future policy should provide a timeline for review so that it can be adapted to meet imminent challenges. Traditional leaders, and land and mining institutions must be recognized as key stakeholders in the water resource management implementation framework. Coastal protection and water resource protection against oil spills must be highly prioritized in a future National Water Policy.



CHAPTER THREE

METHODOLOGY

This chapter provides details on the approach that the study followed to solicit the relevant information needed to achieve the objectives. It also expounds on the research design, sampling and sample size determination, and data sources and how the collected data were analysed.

Research Design

This research focused on the elicitation and interpretation of people's narrative accounts of their experience hence a qualitative method was adopted for the study to address the exploratory nature of the research and perception study Pérez et al., (2017); and Pradhan et al., (2017). This study conceptualized a modernised framework to assess and analyse the effectiveness of regulations and policy implementation, with a specific focus on drinking water supply in Ghana. The framework defines the policy (what were the measures taken), practice (what happened), and performance (what were the results) to assess the effectiveness of policy implementation.

Data source and collection

Data collection was undertaken in two phases. The first phase involved the collation of relevant laws, acts, guidelines, and other legislative instruments from the sector institutions involved in the value chain of water provision in Ghana. The other aspect of data collection involved the conduct of key informant interviews with senior-level officers in the relevant sector institutions. Priority was given to officers in the executive positions of authority. Where unavailable, the assigns (persons in acting positions) were

interviewed. These key informants were selected purposively due to the peculiarity of the positions they held and their job functions.

Target Population

To obtain the most relevant information on how the National Water Policy is addressing the water supply needs of the urban areas, the qualitative data collection focused on policymakers; policy implementers; and other stakeholders in urban water delivery. The policymakers interviewed included personnel of the Ministry of Sanitation and Water Resources (MSWR), Water Resources Commission, and the Public Utility Regulatory Commission (PURC). For policy implementation, the Ghana Water Company Limited (GWCL) and personnel from the Coalition of NGOs in Water and Sanitation (CONIWAS) were interviewed.

Sampling Technique

Purposive sampling technique was adopted to select respondents from the officers in the executive positions of authority of the various agencies because they have the necessary information and knowledge or experience relevant to the research. This sampling technique was adopted because the samples satisfy the interest of the research hence sample was not intended to be statistically representative.

Sample Size Determination

In all, 12 participants were selected and interviewed as key informants as part of primary data collection for this study. A key informant was chosen from each institution except for WRC and GWCL where more than a single participant was interviewed mainly due to the wide nature of the coverage of these institutions countrywide. The choice of this number of participant was influenced by the suggestion by Adler & Adler in 2012 who

indicated that a sample size of 12 participants should be adequate to achieve saturation in qualitative research. This choice is rooted on the opinion of Dworkin, 2012 who argues that although he suggests a participant size of 25 to 50 in order to attain saturation, that recommendation would not apply to phenomenological studies or life history approaches. His guidance was intended to offer one clear and consistent standard for research projects that use grounded theory and draw on in-depth interviews.

Instrument Used

A semi-structured interview guide was used as the data collection instrument in this study. Questions asked were based on thematic areas provided in literature in line with the institutional framework of the water sector.

Analysis of Data

Transcripts were prepared from the KIIs after the transcription of audio recordings into text. The text was analysed using NVIVO Software Version 11 sourced from QSR to provide information on the relevant themes in the water sector from the perspectives of the experts.

Ethical consideration

To ensure a successful data collection from the field, some ethical issues were considered. The interviewees were made aware that their participation in the study was completely voluntary and that they were at liberty to opt-out of the study. The purpose of the study was also explained to all the participants. The participants were also assured of their anonymity and confidentiality of the information provided hence pseudo names were used as identities where necessary. This was strictly adhered to during the data collection, analysis, and discussion of findings.

CHAPTER FOUR RESULTS AND DISCUSSIONS

This chapter covers the data collected through desk review and field data from key informants. Information from the interviews was systematized using nVivo Version 11 and the Excel Application of the Microsoft Office Suite. Where suitable, results have been presented as tables. Data has been presented under the various main headings as captured in the objectives of the study and the information presented serves as the basis for the discussions and interpretation.

Participant's Profile

It was significant to understand the background of the participants who were interviewed. This assisted the researcher to build a relationship between their personality and responses such that appropriate conclusions could be made in the data analysis. From Table 2, the profile of participants involved in this study showed that there were more male participants in this study compared to their female counterparts. Key informants ranged from 27 years old to 58 years old. All the participants had some form of formal education with the least education being at the Higher National Diploma (HND) obtained from the Polytechnic. Post Tertiary Education including Doctoral (Ph.D.) qualifications which accounts for the highest educational level of some participants. The positions held by participants were considered since those who held the executive positions could give in-depth information on the subject matter. A larger number of participants were executive members of their institutions, non-executive participants made up those in the minority.

Table 2: Profile of Participants

Characteristic	Frequency	Percent
Age		
<30 years	1	8.3%
30 – 40 years	3	25.0%
40 – 50 years	4	33.3%
+50 years	4	33.3%
Gender		
Male	7	58.3%
Female	5	41.6%
Educational Background		
Pre Tertiary	2	16.6%
Tertiary	5	41.6%
Post Tertiary	5	41.6%
Type of Institution		
Regulator	2	16.6%
Implementation Agency	1	8.3%
Policy Formulator	2	16.6%
Service Provider	5	41.6%
Level of Decision-making		
Operational Level	4	33.3%
Managerial Level	4	33.3%
Strategic Level	4	33.3%
Years Served in the Current Portfolio		
Less than 5 years	4	33.3%
Between 5 to 10 years	3	25.0%
Between 10 to 15 years	1	8.3%
Above 15 years	4	33.3%

Source: Field Interview, 2020

Participants’ Institutions

Table 3 shows the various institutions mandated by policy plans, measures, or actions in the NWP who participated in the study. Generally, participants at strategic, managerial, and operational levels of decision-making were interviewed within the organizations except where single individuals participated in the study.

Table 3: Institutions of Participants

Institutions	No. of Participants
MSWR	1
NDPC	1
WRC	2
PURC	1
GWCL	4
WRI	1
CWSA	1
CONIWAS	1
Total	12

Source: Field Interview, 2020

Objectives and Plans to Ensure Accessibility to Water Supply in Ghana

The National Water Policy of Ghana is intended to provide a framework for the sustainable development of Ghana's water resources. It is targeted at all water users, water managers, and practitioners, investors, decision-makers, and policymakers within the central Governmental and decentralized (district assemblies) structures, non-Governmental organizations, and international agencies. The overall goal of the National Water Policy is to achieve sustainable development, management and use

of Ghana's water resources to improve health and livelihoods, reduce vulnerability while assuring good governance for present and future generations. The policy seeks to address key issues underwater resources management, urban water supply, and community water and sanitation as part of its strategy towards achieving the overall goal. The study explores the main principles and or challenges, policy objectives and measures aimed at ensuring accessibility for urban water supply. These attributes of the NWP have been collated as indicated in Table 4.

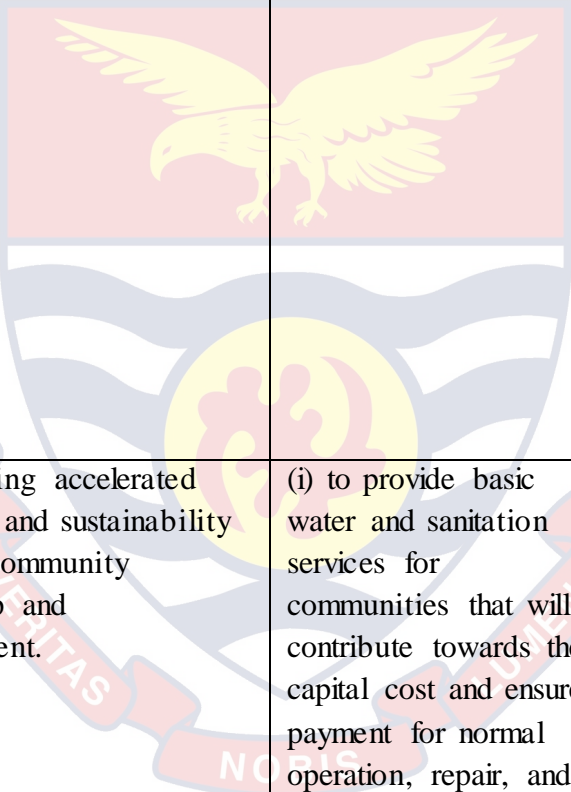


Table 4: Collation NWP Strategic Goals, Focus Areas, Principles and Challenges, Policy Objectives and Actions

Strategic Goal	Focus Area	Principles & Challenges	Policy Objectives	Policy Actions & Measures
Water Resource Management	Focus Area 2: Access to Water	<p>(i) the fundamental right of all people without discrimination to safe and adequate water to meet basic human needs;</p> <p>(ii) ensuring a minimum water requirement for the maintenance of health and well-being is assured.</p>	<p>(i) facilitate improving access to potable water without discrimination; and</p> <p>(ii) enhance the management and development of water resources in a manner as first priority, safeguards that the entire population, particularly the poor vulnerable, will have access to adequate and potable water;</p>	<p>(i) strengthen and ensure the sustainability of ongoing community management, operating and maintenance of facilities, to safeguard investments already made;</p> <p>(ii) strengthen District Assemblies to assume a central role in supporting community management of water and sanitation facilities, and in maintaining the integrity aquatic ecosystems;</p> <p>(iii) increase the stake of and clearly define the role of the formal and informal private sector in the provision of water and sanitation in urban and rural communities ensure the facilitative role of Government agencies;</p> <p>(iv) promote partnership between the public and private sectors in the provision of supply and sanitation</p>

				<p>services for improved management and to facilitate inflows;</p> <p>(v) improve efficiency in production and distribution through effective and improved O&M and pricing mechanism (strategy and structure) taking into account the poor vulnerable; and</p> <p>(vi) ensure sustainability through cost recovery, taking into account the basic right threshold level of supplies ("some for all"), especially for the segment of the population who can demonstrably not afford the full cost of supplies.</p>
Urban Water Supply	Focus Area 2: Improving Access to Water	<p>(i) rehabilitation and expansion of existing infrastructure;</p> <p>(ii) achieving equity in access to water supply for peri-urban and urban poor to meet their basic needs at an affordable cost;</p> <p>(iii) improving operations and management;</p>	<p>(i) to ensure sustainable financing of the infrastructure deficit to meet present and future demand;</p> <p>and</p> <p>(ii) to improve management and operation</p>	<p>(i) introduce private sector participation in the operations and management of urban water supply</p> <p>(ii) carry out rehabilitation and upgrading of reservoirs to restore and increase their capacities, where feasible, using appropriate means (e.g. dredging, raising spillway levels), and new ones built where</p>

		<p>and</p> <p>(iv) reducing the high level of physical losses.</p>		<p>required;</p> <p>(iii) prioritize new investments in system extensions and expansion of bulk water production based on well-established criteria that include health factors; and</p> <p>(iv) ensure that an equitable amount of investment resources are dedicated to extending services to low-income communities.</p>
Focus Area 10: Pro Poor Issues	<p>(i) increasing tariffs to recover costs fully while paying attention to affordable particularly by the poor</p> <p>(ii) achieving equity in access to water supply for peri-urban and urban poor to meet basic needs at an affordable cost; and</p> <p>(iii) understanding the needs of the poor and designing interventions to</p>	<p>(i) to ensure improved and sustainable access to water by the poor for their basic needs.</p>	<p>(i) adopt a tariff structure that provides an optimal benefit to consumers including income consumers;</p> <p>(ii) encourage cooperation between private operators and small-scale independent providers, rather than grant exclusivity to either party, to facilitate adequate affordable provision of safe drinking water to unserved and underserved areas;</p>	

		<p>suit their supply and payment choices.</p> 		<p>(iii) establish a programme such as a Social Connection Fund to support the connection of low-income consumers to the network;</p> <p>(iv) facilitate defining unserved zones and identify cost-effective alternatives for progressively extending services to these areas; and</p> <p>(v) recognize the current roles of small-scale providers (secondary and tertiary) in the water supply chain and provide support where appropriate</p>
Community Water & Sanitation	Focus Area 1: Access to Potable Water	(i) achieving accelerated coverage and sustainability through community ownership and management.	(i) to provide basic water and sanitation services for communities that will contribute towards the capital cost and ensure payment for normal operation, repair, and replacement costs of their facilities, mindful of the need to ensure affordability, equity, and fairness	<p>(i) promote an equitable demand-responsive approach where communities express demand by participating in making informed decisions on choices of services that fit their needs; and</p> <p>(ii) support institutions responsible for providing information on ground-water occurrence and availability (quantity and quality).</p>

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Source: Adapted from MWRWH, (2007)



Water Resources Management

Focus Area 2 under the Water Resources Management section of the NWP prescribes what is to be looked at to improve access at the resource level. Current trends point to the fact that the water resources management approach is critical to the protection and sustenance of the resource and the dependence of other uses such as drinking water provision. The risk level posed by the extractive sector to the health of water resources has been forecasted to impact heavily on drinking water supplies especially the urban areas in the nearest future. The net effect of these activities on surface water sources is being felt by the operations of drinking water treatment plants who rely on these rivers as their abstraction sources. The phenomenon over the years has caused the Ghana Water Company Limited operational problems, some of which resulted in the shutting of some treatment facilities.

Urban Water Supply

As a country, Ghana finds itself in a period of rapid urbanization such that water supply does not measure up to the demand created by the state of urbanization. The total drinking water demand of urban Ghana stands at 1,049,306 m³/day as against an average daily output of 572,012 m³/day (Nicolas, Cortes-Penfield, & Trautner, 2017). Owing to this deficit in supply, water is rationed to many consumers with only a few customers able to get a 24-hour supply. Supplies to peri-urban areas and some densely populated poor urban areas are so erratic that customers receive supplies once a week or a few hours on certain days in the week. The situation can become so dire that the dwellers in these urban areas have to resort to the purchase of water from secondary and tertiary vendors to meet their demand. To improve on the prevailing situation, governments have invested in expansion projects of treatment facilities but these attempts have not lived to the billing

because they are not matched with similar investments in the distribution infrastructure. Other governments have also pursued agenda which sought to attract consistent levels of investment from public and increasingly, private (local and foreign) sources (MWRWH, 2009). Regardless of these efforts, challenges persist within the water supply value chain in urban areas.

Community Water and Sanitation

According to the erstwhile Ministry of Water Resources Works and Housing, long-term plans were outlined in the Ghana Poverty Reduction Strategy (GPRS) to improved rural water supply, sanitation, health and, the control and eradication of water-borne diseases through the implementation of the National Community Water and Sanitation Programme (NCWSP). Among the broad principles, those of particular relevance to the community water and sanitation sub-sector are improving access to potable water to rural and small-town communities; decentralized delivery of water and sanitation service; sustainable financing; hygiene education and sanitation; public-private partnership; capacity building; gender mainstreaming and good governance; research and development; operation and maintenance; and monitoring and evaluation (MWRWH, 2007). In some urban and peri-urban areas, the rapid development has created water-stressed areas that are served by GWCL facilities and CSWA system or served by neither of the two systems. These grey areas have added to the already murky conundrum faced by the urban water service provision.

Levels of Progress with Action Plans and how they are Targeted at Improving Access to Water Supply.

The National Water Policy outlined five key policy measures to ensure improved and

sustained access to the urban water supply for drinking and other domestic purposes. These include amongst others the adoption of a tariff structure that provides optimal benefits to consumers including low-income consumers; encouraging private participation in the service provision schemes rather than granting exclusivity to either party; establishment of social connection fund; defining un-served zones; and identification of ways of service extension to these areas.

It is noteworthy that some of the measures have been implemented thus far albeit with limited success. Typical amongst these are; the adoption of a tariff structure that provides optimal benefits to consumers including low-income consumers; defining un-served zones and identification of ways of extending services to these areas; and the recognition of small-scale providers (secondary and tertiary) in the water supply chain. The challenges persist with (i) the establishment of a social connection fund to subsidize connection to households and (ii) cooperation between the private sector and small-scale independent providers.

One of the regulatory staff indicated that *“The lack of an over-arching law in the water sector as opposed to what transpires in the energy sector where before a private person, for example, an Independent Power Producer enters the sector, the entity must abide by the rules, has given all of us some level of ineptitude. It may seem as if we are all waiting for someone to act first”* (Director, 56, Regulator). A chief manager of water provider remarked that *“On this niggling issue of social connection fund, I believe a lot is being done within the sector but just that we have these efforts in fragments and nobody, in particular, is ready to champion or own it – may be largely attributable to the financial implications for the lead institution”* (Chief Manager, 51, Service Provider)

Tariff Structure

Tariff structure for utility services is very key in providing sustainable financial mechanism for the efficient and effective operations of the system. However, the system should be discriminatory to provide safety net for the urban poor to be able to access and pay for the water supply services. In this regard, a director pointed out that *“Regarding tariffs, this institution has always had its eye out there for those in the low-income category. The tariff structure adopted by the country has always made some provision for the section of the population whose income level and water use requires special attention.”* (Director, 56, Regulator)

The economic regulation for utilities in Ghana, the PURC adopted the lifeline tariff as a means of cushioning the urban poor against high tariffs. However, the results of the study did not show that the rising block tariff structure which has a lifeline component for households with a network connection is achieving its objective. *“As a nation, I believe we haven’t done badly by introducing lifeline tariffs for a large bandwidth of residential users so that provision should help but the bigger issue is the connection fees to enable users to become metered customers”.* (Director, 56, Regulator)

It is noteworthy that due to limitations in the reticulated pipe networks and its attendant water coverage problems, there are some of the households which still depend on water vendors for domestic water supply and as a result are not benefitting from the lifeline tariff. Moreover, the households lived in compound houses with average household size and households in a house of 4.5 and of 6.2 respectively. The responses of interview participants point to the fact that key stakeholders were aware that the lifeline tariff alone was not an effective pro-poor measure. The key stakeholders conceded that the lifeline tariff rather benefits the rich instead of the poor. An official of GWCL also bemoaned that the lifeline tariff was meant for the poor but they are not enjoying it hence the affluent in

urban communities rather benefit at the expense of the poor who the policy had in mind. An engineer from the distribution services indicated *“My brother, you and I are aware that the lofty intentions of the policy are not realized and from the business point of view, the volumes of water that used to be allocated to users in the name of lifeline or social tariff was benefitting the rich and affecting our revenues.”* (Distribution Engineer, 39, Utility Service Provider)

The findings in this study mirror those of the previous studies that have examined the effectiveness of the lifeline tariff as a pro-poor measure. According to (Awuah et al., 2009), low-income households living in compound houses with a single meter pay 20% more per unit volume than high-income households in single-family houses with a direct connection to a GWCL network. Other studies have also revealed that tariff systems like increasing block tariffs penalize clusters of households that share a single connection as they will fall in a higher tariff block because of the higher level of consumption from the water point, which means they pay more per unit of water than households in single-family houses with piped water connection (Ryan & Adank, 2010). Although the PURC has for about a decade recognized the ineffectiveness of the lifeline tariff as an efficient mechanism for delivering affordable water to the poor, it has not done anything concrete to improve the situation. This finding underlines the importance of accurate targeting of the urban areas for pro-poor water supply.

Defining Un-served Zones

Concerning the call on policy implementers to facilitate the outlining of un-served zones and identification of cost-effective alternatives for progressively extending services to these areas, the study revealed that the PURC in collaboration with the GWCL and WaterAid have piloted a pro-poor water supply intervention in some communities in the

ATMA jurisdiction, but are yet to officially share the lessons on the intervention. However, during separate interviews with officials of PURC and GWCL, it was revealed that the pilot pro-poor project was successful as it has helped the majority of the people in the pilot communities, Nima, Teshie, and Glefe, who did not have access to potable water to be served either through water kiosk, standpipes or boreholes.

It also came to light during an interview with an official of the GWCL that the company has no pro-poor criteria for urban water supply except for the use of public standpipes. However, not a single public standpipe was found in the study communities. The utility does not also have a pro-poor policy to demonstrate its commitment to progressively extending service to the poor. The GWCL only has a pro-poor coordinator with limited functions. A possible explanation for this result may be that the GWCL is not pro-poor inclined and thus finds it difficult to formulate and implement pro-poor policies. A study by (AWF, 2011) showed that the mandate, organizational structure, and skills of utilities are often inappropriate to deliver service to the urban areas.

To overcome this shortfall, some utilities have in recent times set up dedicated units to oversee service delivery. These pro-poor units, in some ways, mimic the processes used in the management of rural and small-town water and sanitation delivery where there is more active participation of the community (AWF, 2011). The purpose of the pro-poor unit is to improve coordination between and amongst external partners and lead the effort to increase access and coverage; increase utility revenue; reduce water losses; and improve relations with poor consumers. This is to ensure that the utility proactively improves services to the poor, rather than responding on an ad hoc basis (Water and Sanitation Program, 2009). The use of pro-poor units is common in Kenya, Uganda, Tanzania, and Zambia and their activities are well coordinated. In Uganda for example, the National Water and Sewerage Corporation's (NWSC) pro-poor unit has a field office

where customers can pay bills, apply for a new connection, or report problems. The pro-poor field office supports the other traditional field offices throughout Kampala and is supported by staff members at the corporation's Kampala headquarters, who drive the pro-poor investment program (Water and Sanitation Program, 2009). Since the establishment of the pro-poor unit by the NWSC in Kampala the branch office has increased its revenue collection twenty-fold due to its close relationship with customers. The pro-poor unit in Kampala also connects approximately 50 new customers a month to the piped-water network (Water and Sanitation Program, 2009). It is therefore, surprising that although the GWCL is aware of the existence of pro-poor units in other jurisdictions, it decided to opt for a pro-poor desk which is manned by a single officer. Naturally, such an arrangement will not be able to surmount the numerous challenges confronting the urban poor about water supply.

Recognition of Small-Scale Water Providers

The results of the study indicate that small-scale water providers are recognized by the policymakers and policy implementers as providing useful services in the water supply chain as stipulated in the policy. However, the activities of the water vendors, apart from the tanker operators, are not regulated. They operate as an informal business and do not usually register their businesses. Aside from the tanker operators who have some formal relationship with the GWCL and PURC and are thus loosely regulated, the other small-scale water providers operate without supervision and regulation by the PURC. The vendors seem to operate on the fringes of legality and do not come under any regulatory authority. The PURC believes that it is the quality of water supplied by water vendors that should be regulated, but not the prices charged by water vendors as prices of water are subject to free-market forces and do not warrant regulator's intervention.

However, the study revealed that apart from the tanker operators who have been given operational guidelines by the PURC, the activities of the water vendors are not supervised and regulated, not even the quality of the water that they dispense. This finding lends credence to a study by Mcgranahan & Kjellén in 2006 which revealed that water vendors typically operate outside or at the fringes of the established legal framework and that too little attention has been given to regulating their activities. On their part, Mcgranahan & Kjellén indicated that despite the significant role played by water vendors in the water distribution chain, they have historically existed at the fringes of legality and several factors militate against their operation. Another study by Ainuson, (2010), also observed that the refusal of government and other practitioners to recognize and pay close attention to the services of water vendors is militating against their operations in Ghana.

One cannot disagree with the observation by (Ainuson, (2010); Mcgranahan & Kjellén, (2006) and others in the literature, since the legal status of water vendors can make a big difference in their operations. It can make water vendors more efficient by opening up their relations with other actors of the system such as the utilities, financiers, and clientele and reduce the risks involved in investments. It can also enhance access of water vendors to credit as a business without legal identity or one operating at the fringes of the legal framework cannot access formal banking services.

Thus, an entrepreneur in the water vending business has to borrow at high rates which decreases the incentive for investment. The result is that water vendors are forced to make short-term investments as long-term investments are much more uncertain and they could be banned by authorities at any time (Rachelle, 2011). Moreover, institutional arrangements and legal reforms that integrate water vendors into the formal solution reduce opposition and improve transparency. It allows the informal providers to gain security and legitimacy and the utility can take advantage of the knowledge and skills of

the informal providers. Besides, regularization of water vendors can help utilities to reduce illegal connections and corrupt practices by staff, lower water prices, and improve the reliability of services, especially if adequate oversight or regulatory arrangements are put in place (Ryan & Adank, 2010).

Social Connection Fund

As already indicated the social connection fund which is meant to subsidize the connection of poor households to the network has not been established. The study revealed that the PURC (the regulator), the GWCL (the utility provider), and the MSWR are against its establishment although the three institutions were part of the policy formulation process. In an interview with an official of GWCL, it was revealed that the establishment of the social connection fund was proposed under the World Bank-funded Urban Water Project. However, the GWCL kicked against it because the corporation is of the view that if a person can build a house she/he should be able to pay for the connection of piped-water to the house. When a question was posed to an official of the MSWR as to why the social connection fund has not been established, he responded that the government views it as discriminatory. The official argued that the places referred to as low-income areas are inhabited by both the poor and the rich so targeting the poor for connection subsidy will not only be difficult but discriminatory.

This finding is consistent with the model of policy implementation by Pradhan et al., (2017) which indicates that the disposition of implementers toward a policy may affect their ability and willingness to carry out the policy. The model postulates that implementers' cognition of the policy; the direction of their response to the policy whether acceptance, neutral, or rejection; and the intensity of the response may affect their ability and preparedness to implement the policy. It is also in tune with Signé,

(2017) which established that successful policy implementation is based on the consistency of actions of implementing officials and target groups with the objectives and procedures outlined in a policy decision. The findings of the study clearly show that the GWCL, the PURC, and even the MSWR are negatively disposed toward the implementation of the social connection fund.

In an interview with an official of the PURC, he affirmed that the establishment of the social connection fund is not on the agenda of the utility regulator and that nothing has been done to subsidize connection for the poor. The PURC believes that the principal barrier for the poor to access water is not the connection fees but rather lacks of adequate infrastructure since the poor are already paying high volumetric rates to water vendors. The PURC is therefore of the view that if the service is expanded to reach the poor they can meet the full cost of connection which was (as at the time of the study) officially between GHC300.00 to GHC400.00. The PURC, therefore, sees no need at present to cross-subsidize connection charges (PURC, 2005). However, there is no guarantee that if this connection subsidy was to be implemented it would not lead to the exploitation of the people to be subsidized by the workers of the GWCL. Even if the water infrastructure is extended to poor neighbourhoods in the foreseeable future, water connection to poor households could still be a challenge due to high connection fees and unfavourable terms of payment of the fees. The connection fees are set as a one-off payment to recover the full cost of connection from the network to the customer. It includes the service pipe, meter, trench excavation, and other associated charges which are beyond the reach of the poor. At the time of the survey, an official of GWCL gave the cost of connection to the piped network as between GHS300.00 to GHS400.00.

What is worrying is that the connection cost quoted by the GWCL is just the official price, as households in need of connection often have to get it through the back door at a

higher cost which could be several times more. An opinion leader, for example, indicated that it cost more than GHS2, 000.00 (US\$400) to get connected to the pipe network for a distance of about 250 metres away from the mains. This matches those observed in an earlier study by Adank et al., 2016 who noted that the urban poor were discouraged from obtaining piped water connections by unaffordable connection charges despite the savings in time and money that they could make once connected.

Utilities fail to ensure that the poor get the public health benefit of clean water by often requiring them to pay, often in advance, for the full cost of a new connection. A study by Kayaga & Franceys, (2008) which was carried out in Ghana, India, Philippines, and Uganda also discovered that the mean cost for a functioning piped water connection of the four countries was US\$295 which was regarded as unaffordable to the poor. According to the study, poor households in Ghana living in cities and secondary towns pay on the average US\$331.3 and US\$358.3 respectively for a functioning piped-water connection. The amount includes the application costs, the connection costs and fees including any additional payments for components, e.g. pipes and meters; and the extent of any additional cost that is required including speed money to fast-track the processes, transport, and snacks for workers and inspectors among others. Ryan & Adank, (2010) also observed that in Ghana due to relatively high connection costs coupled with complicated procedures and legal boundaries such as proof of ownership of a house, poor households living in rented premises struggle to get connected to the piped-water network. People, therefore, resort to illegal connection and consumption. Ordinarily, it is the wealthier strata of the population that is connected to the GWCL network, which enables them to profit from the lifeline tariff at the expense of the poor who are not able to connect.

The unwillingness of the sector stakeholders to establish the social connection fund is

disturbing as it is denying the poor access to an improved water supply. The literature is replete with case studies on the association between subsidizing connection cost and improved access of the poor to water supply, especially when the subsidy comes with flexible terms of payment. Zetland in 2014 for instance argued that affordability is essential to create a sustainable water supply for the poor. The pair studied better practices in supplying water to the poor and found that subsidizing connection and granting the urban areas flexible payment terms on consumption charges has given the urban poor in Niger, South Africa, Senegal, Jakarta, Morocco, Ivory Coast among others the opportunity to get connected to the network. They outlined a combination of ways of promoting affordability in terms of connection fees and consumption charges. Notable among them is a special charge or tax on water bills used to fund network expansion in Buenos Aires and Ivory Coast; international grants and loans that subsidize socially assisted connection in Niger, Burkina Faso, and Senegal; and inter-service cross-subsidization where for example electricity revenue partially fund water investment or consumption as practiced in Gabon and Morocco.

The US Agency for International Development, (2007) revealed that the Mozambique Water Sector Asset Owner and Investment Agency (FIPAG) in its quest to improve services to the poor whilst at the same time driving greater service provider efficiency, reduced the connection fee by 50% (about US\$75 per connection) and now allows fee payment for 12 months in Maputo and 13 other towns and cities. This has resulted in a sharp increase in the connection rate among poor householders, most of whom previously paid much higher per-litre prices for lower quality water from informal suppliers. This was made possible by streamlining connection processes and thus reducing per-connection cost; levying a new surcharge on the water supply to the country's ports; and setting up a revolving fund to finance the remaining balance.

Cooperation between the Private Sector and Independent Providers

As mentioned earlier, the policy measure which seeks to encourage cooperation between the private sector and small-scale independent providers as a way of improving access of the urban areas to water supply is yet to be implemented. The results of the study show that officially, there is no private operator involved in urban water provision; neither are there small-scale independent water providers in the urban water sector. The GWCL is the only statutory body responsible for producing and distributing potable water to the urban population in Ghana. It came to light during the study however that small-scale private water providers have emerged in the urban water sector, albeit unofficially. It was observed that private individuals are operating mechanized boreholes and selling water to both secondary suppliers such as tanker trucks, water trucks, and motorized water cart operators, as well as other end users. These providers are operating illegally and as such their activities are not regulated.

The study found the small-scale independent water providers are rife in Tema. About 72% of the 25 mobile water vendors sampled during the survey indicated that they depend on private mechanized boreholes as their main source of water supply. In separate interviews with officials of GWCL, CONIWAS, and GUWL it was revealed that the officials were aware of the presence of the small-scale water providers. However, nothing concrete has been done to regulate their activities. The officials, therefore, expressed apprehension about the unregulated nature of their activities. An official of GUWL, for example, acknowledged the contribution of the small-scale water providers but was quick to add that their activities should be regulated to protect the interest of the consumers.

It was however revealed that the current policy of the government is to promote public-private-partnership (PPP) initiatives as a way of pulling resources and expertise from the private and the public sectors to improve urban water supply. A possible explanation of

this might be that the government has realized that the public sector alone cannot fill the gap in urban water supply and that there is a need for the public to partner with the private sector to improve water supply to the urban poor. This must however be done in consultation with communities and the civil society organizations as previous attempts to bring the private sector into urban water supply were seriously resisted by civil society organizations.

Challenges Confronting the Agencies in their Bid to Ensure the Implementation of these Action Plans

From the study, six main challenges were confronting the agencies in their bid to ensure the implementation of these action plans to the delivery of water to the urban areas. These are an insufficient investment with special reference to water supply infrastructure; over aged distribution lines and pipes; and operational inefficiencies. The rest are poor corporate governance; urban sprawl and its associated poor urban planning; and frequent power outage.

Insufficient Investment

The results of the study show that a challenge thwarting water supply to the urban area is an inadequate investment to expand the infrastructure capacity of GWCL to meet present and future demand as stipulated in the urban water policy. Resources needed to facilitate the effective implementation of the policy are inadequate. The results of the study showed that water production lags behind supply. As of December 2012, the water produced from the 83 urban water systems was 707,783m³/day but this was not able to meet the total demand of 1,125,253m³/day resulting in a supply-demand gap of 417,470m³/day. Officials of the GWCL and the MSWR attributed the supply-demand gap to rapid urbanization and a low level of investment.

According to GWCL estimates about US\$100 million per year has to be invested in sector infrastructure development if the desired coverage levels are to be achieved over time (MWRWH, 2012). The GWCL's Strategic Investment Plan prepared for a systematic development of all urban water supply systems in the country indicates that about \$717 million will have to be invested in water production to help increase current urban coverage to about 100% by 2025 (MWRWH, 2012). This finding is consistent with a research by WaterAid in 2013, which revealed that notwithstanding the high level of commitment made by governments in Ghana, Niger, Sierra Leone, Rwanda, and Uganda to resource the water and sanitation sectors, financing is falling short of the required investment. Ghana, for example, requires an annual investment of 3.5% of GDP in the water and sanitation sector to achieve the MDG targets for water and sanitation. However, since 2008 the country has not invested more than 1.5% of GDP in the water and sanitation sector (WaterAid, 2013).

It also emanated from the WaterAid studies that inadequate investment in the urban water sector is not limited to Ghana. According to the UN-Water in 2013 investments in urban water infrastructure in SSA are not in tandem with the rate of urbanization. Water and waste services have not been given the needed priority, as significant under-investment has been the bane of urban water utilities despite the economic, social, and environmental benefits of water. It was confirmed during interviews with the key stakeholders in the urban water sector, namely, the GWCL, GUWL, MSWR, and CONIWAS that the budgetary allocation to the water sector is low. An official of GUWL, for example, bemoaned the low level of commitment of the government to a water supply to the urban area. The official, therefore, called on the government to be more committed to the implementation of the policies that are already on paper. It was also indicated by an official of CONIWAS that the small amount allocated to the water sector in annual

budgets is often not fully released by the Ministry of Finance.

An official of the MSWR explained that the government does not have the quantum of money needed to finance the infrastructural requirement of the urban water sector. The government, therefore, has to borrow but this is based on its ability to repay the loans. Given this, the government hesitates to take more loans. The official further revealed that a proposal to set up a National Water Fund to finance the implementation of water projects was jettisoned because it will overburden the citizenry due to an avalanche of funds such as the Ghana Education Trust Fund and the Communication Fund, among others.

The main sources of funding for development projects in the urban water sector are primarily from external support agencies amounting to about \$30 million per year, the Government's annual budgetary allocation of about \$ 2 million a year, and internally generated funds mainly through water sales totalling about \$3 million a year (MWRWH, 2012) The average inflows from these sources over the last years amount to about 35% of the level required to achieve the Millennium Development Goal of 85% coverage (MWRWH, 2012). The urban water sector, therefore, relies heavily on external grants and loans. According to MoFEP; MLGRD; MWRWH, (2010), the water sector in Ghana is dominated by donors, with very little funding from the Government. In 2010 for example, donors provided 78% of funds for the MSWR as against 22% by the government. However, in that same year, the government provided 95% and 85% of funds allocated to the Ministry of Education and Health respectively.

Budgetary allocation by the government to the water sector as a percentage of the total social sector budget has been averaging about 3.6% (WaterAid, 2013). Aside from the inadequate budgetary allocations to the urban water sector, the small funds approved for the sector are not fully released. In 2007 for example, GoG released only 4.6% of the

GH¢25.7 million approved, while in 2009, GoG released about 23% of the approved GH¢11.8 million (MSWR, 2009). This suggests relative neglect of the water sector compared to health and education. These findings also affirm the importance of resources in the policy implementation as identified in the literature Pradhan et al., (2017) as well as Binswanger-Mkhize et al., (2010) who both argues that effective and successful policy implementation has to do with the significance of resources allocated for the implementation of the policy.

Over Aged Distribution Lines

Another challenge confronting water supply to the urban areas is over-aged infrastructure. This was attested to by about 50% of the households. The study findings show that some of the distribution lines which were laid before Ghana attained independence were still in use. The focus group participants in some communities confirmed that the distribution lines in the community are old and leak due to rust and breakages. The focus group participants also indicated that when leakages from the distribution lines are reported to the GWCL for redress, the company rather blocks the piped lines and thereby denying people service by such lines access to water. This finding supports previous research on the challenges of urban water supply in Ghana which links urban water supply to over-aged infrastructure. A study by Kuma et al., (2010) revealed that one of the major challenges facing the GWCL was over-aged distribution lines which results in frequent leaks and bursts. Some of the pipe works were done in the 1930s when the Weija Water System was first commissioned. Similar study by Marieke Adank et al., (2018) also identified dilapidated water distribution infrastructure as a challenge in the urban water sector. The poor state of the water distribution line may be attributed to poor maintenance of water infrastructure which could also be linked to low investment in the urban water

sector.

Operational Inefficiencies

The study identified operational inefficiencies as one of the challenges in the urban water sector. Analysis of data from GWCL revealed that operational inefficiencies have resulted in a high level of Unaccounted for Water (UfW) which has been hovering around 50% since 2007. For example, the volume of water produced by GWCL in 2007 was 217.9 million m³. However, only 103.9 million m³ was supplied to customers. This means that the 114 million m³ of water produced in 2007, representing 52.3%, was not supplied and could not be accounted for due to operational and commercial losses. In 2012, GWCL produced 254.4 million m³ of water and supplied only 131.78 million m³ to customers leading to an UfW value of 48.20%. Normally it would be expected that, when a water system is efficient and effective, the volume of water produced should relatively be the same volume supplied/distributed to consumers. This is however not the case due to commercial and physical losses. Meanwhile, the PURC has given a benchmarked key performance indicator for the GWCL not to exceed 45% UfW (PURC, 2003) although this is far higher than the best practice of 20% for developing countries (S. V Berg, 2013). This notwithstanding, the GWCL is struggling to meet the set target of 45%.

An official of GWCL affirmed that the high rate of UfW is due to over aging infrastructure. The official stated that the company in its quest to reduce the high level of UfW is undertaking rehabilitation, repairs, and replacement of defective components. On their part, CONIWAS attributed the high level of UfW to inefficient management of the urban water system. An official of CONIWAS debunked the claim by GWCL that water tariffs are not adequate to enhance their operations. The official questioned the rationale for producing a quantity of water and claiming the 50% cannot be unaccounted for. He,

therefore, maintained that the high level of UfW is caused by inefficiencies in the system. This finding is consistent with Baghirathan & Parker, (2017) and C. van den Berg, (2014) which identified a high level of non-revenue water as a major challenge facing water supply providers in Sub-Saharan Africa. The study showed that averagely, a service provider in SSA loses 39 percent of its water produced, almost twice as much as the best practice of 20 percent. This means that although utility providers in SSA generally have a challenge with UfW, however, the UfW levels recorded in Ghana over the years are far higher than the SSA average. Moreover, there is evidence to show that some South African and Namibian utilities record only 12% of their revenues as UfW (C. van den Berg, 2014); whilst in Kenya, the acceptable level of UfW is not above 25% (MWI, 2008).

The UfW is caused by physical losses, estimated to be 45% of the total UfW, and commercial losses are also estimated to be 55% of the total UfW (Baghirathan & Parker, 2017). Physical losses in the system are to a large extent caused by leakages and burst pipes as a result of over-aged infrastructure. This is compounded by the lack of bulk meters to measure water produced and distributed by the utility and poor leakage detection mechanisms. Discussion with officials of the GWCL revealed that the company is aware of the existence of a modern system of monitoring and controlling physical losses such as Supervisory Control and Data Acquisition (SCADA) system. However, the GWCL has not been able to procure and use it due to financial constraints and outdated water infrastructure.

Poor Corporate Governance

The findings of the study showed that the governance structure of the GWCL is at variance with the dictates of the companies' code. The companies' code prescribes that a

company should have a Board of Directors appointed by the owners of the company referred to as shareholders. It should also have a Managing Director who is appointed by the Board of Directors. The essence of this is to make the Managing Director answerable to the Board of Directors who provides policy direction for the company. Contrary to the dictates of the companies' code, the results of this study show that both the Board of Directors and the Managing Director of GWCL are appointed by the government and this has been a source of conflict in the governance of the urban water sector. Moreover, the management staff of the company also do not have performance contracts based on which their performances could be realistically assessed.

An official of CONIWAS divulged in an interview that the urban water sector is plagued with governance and accountability challenges. He revealed that the government appoints both the board of directors and managing director of the GWCL and that has been a source of conflict in the urban water sector. The official further disclosed that appointments to the topmost positions in the urban water sector are not done on a competitive basis but are based on political lineage. He also indicated that the staff of the utility does not sign performance contracts. In an interview with an official of the GWCL, he confirmed that the Managing Directors of GWCL are not appointed on a competitive basis. He also affirmed that the appointment of both the board and the Managing Director of the utility by the government does not facilitate effective management of the sector.

An official of the MSWR admitted in an interview that there have been management crises in the urban water sector. He indicated that the governments are aware of the such challenges in GWCL and efforts being put in place have seen to the appointment of a new Board of Directors who then seek to appoint the Managing Director and Deputies. This finding agrees with Nyarko et al., (2008) findings which showed that political interference

in the appointment of top management of GWCL, GWCL Board of Directors, and in tariff setting was adversely affecting GWCL performance. According to Awuah et al., (2009), from 1992 to 2001 all the substantive Chief Executives or Managing Directors of GWCL were fired by the government before the end of their term without recourse to the GWCL Board.

The issue of political patronage in the appointment of key staff of the urban water institution is worrisome since this tends to lower the morale of implementers and affect their disposition towards the implementation of the policy (Molle et al., 2008). Moreover, political interference in the appointment of Board members and Managing Directors makes them more accountable to the political system rather than the general public, since they would be more disposed to serve the interest of the appointing authority. Boyne et al., (2010) argued that government may have the most logical policy imaginable, the policy may pass cost/benefit analyses with honours, and it may have a bureaucratic structure that would do honour to Max Weber, but if those responsible for carrying it out are unwilling or unable to do so, little will happen. Frieden, (2010) also stressed that the success of policy implementation depends among others on committed policy implementers.

The lack of effective mechanisms to measure the performance of the top management of the GWCL is equally worrying since it tends to perpetuate mediocre performance. This is because policy implementation requires that goals and objectives be identified and measured since implementation cannot succeed or fail without a goal against it to judge it Office of the Cabinet of Jamaica, (1998); and Signé, (2017). According to Signé, (2017), successful policy implementation is contingent on effective and well-coordinated institutional machinery and procedures by which higher authorities may attain higher compliance on subordinates to follow stated standards and objectives. Daniel & Hovland,

(2004) also acknowledge the importance of performance standards and objective means of measuring performance and ensuring compliance of policy implementers. Moreover, good governance mechanisms require citizens' participation in decision making. In consonance with this, the urban water policy supports customers' participation in decision making, however, the existing institutional framework does not amply empower the customers and for that matter communities to demand accountability from GWCL. The policy and regulatory framework do not sufficiently empower the users, customers, or beneficiaries to demand accountability from GWCL management or its Board members.

Urban Sprawl and its associated Poor Urban Planning

Poor urban planning and urban sprawl in general was found to be a hindrance to water supply to the urban poor. The study established that rapid urbanization has stretched the capacity of the GWCL to serve the ever-increasing urban population with water. The supply of water has consistently fallen short of demand as already indicated. Moreover, urban sprawl has made the extension of services to low-income areas very difficult due to the unplanned nature of the settlements. Similarly, previous studies have demonstrated that rapid urbanization and its associated sharp rise in the number of people without access to water supply from public utilities and as a result of poor people, who live in informal urban settlements, are forced to buy water from water vendors at a higher cost (MWRWH, 2015).

The rate of urbanization in Ghana outstrips the current levels of urban water supply and as a result, water is considered a critical resource in short supply among the urban poor (Nyarko et al., 2008). In an official interview with an official of GUWL, it was disclosed that the unplanned nature of the low-income settlements is making an extension of the piped-water network to these areas very difficult. The official explained that it is very

difficult to even lay the distribution lines to the low-income areas due to the unplanned nature of the settlements. The challenges associated with the extension of the piped-water network to unplanned and densely populated settlements were also espoused by an official of GWCL during an interview. The official stated that the extension of piped-water to unplanned settlement involves high compensation costs. He also said that the demand for compensation by project-affected persons before the start of a project threatens project implementation in unplanned settlements which is mostly inhabited by the poor.

These results also match those of Marieke Adank et al., 2018 which identified key constraints to the urban water supply as high population density and the unplanned nature of many parts of Tema which makes it difficult to lay tertiary mains and service connections to the individual households. The financial costs of breaking down illegal structures as well as the political costs to extend the connection to unplanned settlements are sometimes too prohibitive for water agencies to undertake any progressive water supply planning (Ainuson, 2010). This is not surprising since urbanization in general and urban planning, in particular, has not been given the needed attention by policymakers. Until 2012, Ghana did not have an urban policy that would have promoted a sustainable, spatially integrated, and controlled development of urban settlements with adequate provision of housing and services. Moreover, in Ghana just like in other developing countries, the decision to implement or not to implement policy measures is often looked at with political lenses.

Water Resource Quality Constraints

When participants were interviewed for their expert opinions on what challenges confront the quality of water resources, informants generally hinted at the level of pollution that most of

Ghana's freshwater resources are exposed to and also lack of enforcement of the resources protection regulations to ensure judicious use of water resources in the country.

"Hmmm... just look at what is happening to our surface waterbodies serving the minerals extractive sector for instance – I don't know if they would have survived without surface water bodies in this country but now I am also not sure how we as humans will survive in the few years to come if we continue to allow miners to toy with our vital resource the way they keep going". (Basin Officer, 46, Resource Regulator)

"So long as we don't punish people who cause harm to these essential resources including the water we drink, the air we breathe and the forests we all rely on just because environmental issues are constantly on the backburner of our enforcement institutions, we won't have full control of what's happening" (Treatment Plant Operator, 49, Service Provider)

One key informant intimated during an interview that the inability of the policy-makers and influencers to utilize the numerous studies conducted on Ghana surface water resources and the threats posed by human activities to these water resources should be blamed for the continuous exploitation of the resource.

"My brother, see... we have done lots of research in this institution and I believe some students and lecturers in the academic institutions have also done thousands of works in similar areas. What then do you think is lacking to protect our water resources when people want to use them? If you should ask me over and over again and I'd say: it is the political will to enforce what is right!" (Analyst, 40 years old, Research Institution)

The responses of participants on the subject raise the alarm to suggest that stakeholders believe efforts have gone down the drain in attempts to salvage and preserve the country's dwindling freshwater resources. To these experts, the country is losing the battle against illegal extractive activities which have for some time impacted negatively on the quality of water in some of the country's rivers and further impacted the treatment and supply of drinking water for municipal

supplies. The inadequate enforcement and lack of sustained protective measures have been fingered in the prevalence of the menace. The prosecution of culprits of environmental offenses must be given the political will to serve as a deterrent to others who might be contemplating similar activities. The obvious lack of this commitment by all stakeholders will spell doom for this vital resource and many other sectors that rely on it for their survival.

Making Sustainable Water Supply in the Urban Areas a Reality

Following the identification of the above challenges, the households, policy implementers, focus group discussants, and other stakeholders in the urban water sector put forward five key interrelated recommendations aimed at improving urban water supply on a sustainable basis. These are improving the operational efficiency of GWCL; expansion of water supply infrastructure; private sector participation in urban water supply; increased commitment by the government to pro-poor water supply; and community participation in the urban water sector.

First, the participants called for the rehabilitation of the distribution lines to improve the operational efficiency of the public utility. The households contended that the distribution lines were old and weak and as a result, a lot of water is lost during distribution. They, therefore, advocated for the massive replacement of the distribution lines to improve urban water supply. These findings are in agreement with that of MWI, (2008) who recommended a continuous investment in the sector to rehabilitate water infrastructure as a means of overcoming inefficiency in water supply disruption and reducing UfW. In recent years, UfW in Ghana has been hovering around 50%. This is a drain on the resources of the GWCL. It also reduces the quantity of water supplied by the utility to consumers. Given this, any intervention aimed at reducing UfW and increasing water supply is welcome.

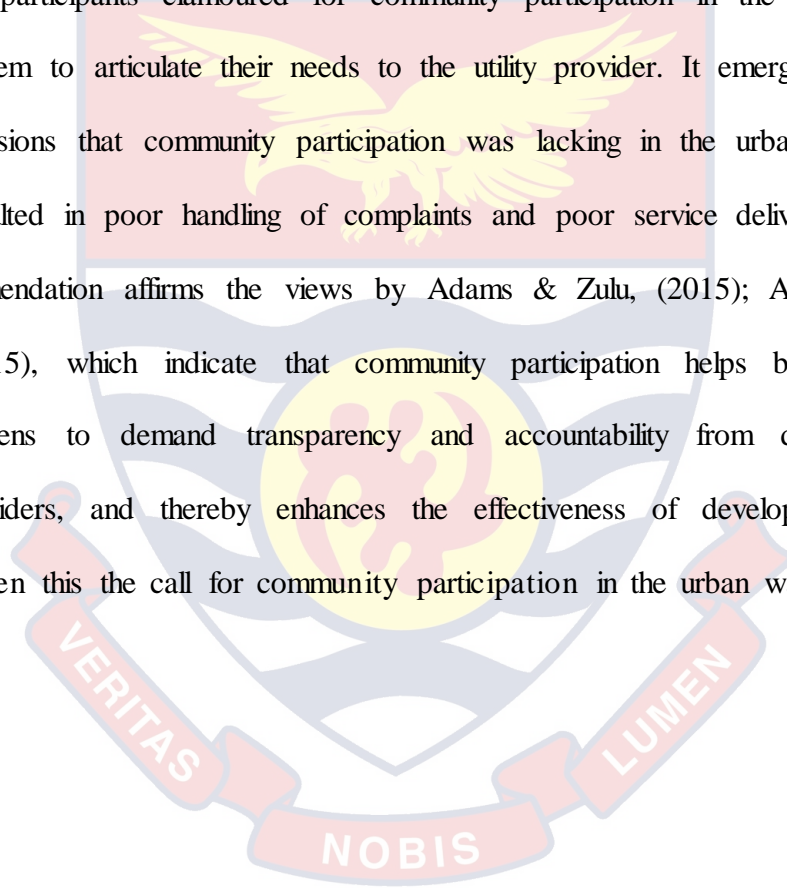
Second, it was recommended that the GWCL and the government should invest more in urban water infrastructure to rehabilitate the existing urban water systems and build new ones to expand urban water supply. The participants are of the view that when the urban water systems are expanded it would increase the productive capacity of the GWCL to meet the water needs of the urban areas. This recommendation agrees with Ryan & Adank, (2010) in Accra which called for the expansion of the capacity of the water system to satisfy the future water demand and ensure reliable water supply. This however demands a huge financial outlay. However, judging from the quantum of budgetary allocation to the urban water sector and the amount disbursed from the allocated funds, it may not be possible to finance the system expansion from the consolidated fund, at least for now. The government, therefore, has to look at alternative sources of funding.

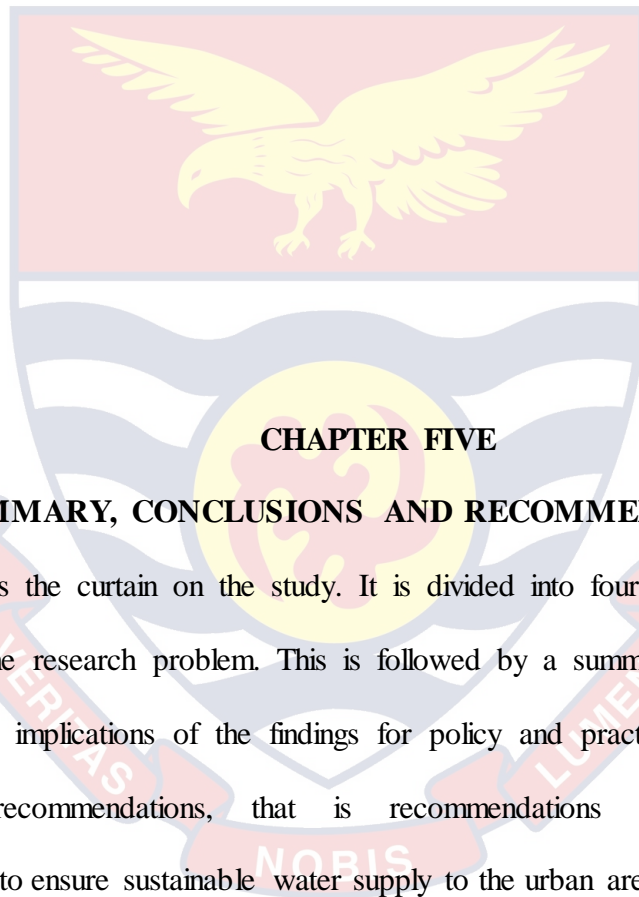
Third, there was a call for private sector participation in the urban water supply. The results of the study showed that 76.9% of the surveyed households advocated for private sector participation in the urban water supply. The households are of the view that the private sector was more efficient and their inclusion in urban water supply would improve water supply on a sustainable basis. This finding is however a contested issue as the literature is replete with studies that are in favour of or against private sector participation in the urban water supply. Those who are for privatization argue that privatization brings efficiency in the provision of water services which translates to improved access to water services by consumers (Baer, 2014). Whilst those who are against privatization posit that privatizing the provision of public goods such as water will increase the cost of water to the detriment of the poor as the private sector is profit inclined (Bakker, 2010). Due to these contesting claims, privatization of water services has often been opposed by civil society organizations including those in Ghana.

Fourth, it was also recommended that the government should stop paying lip services to

pro-poor water issues and be more committed to the course of the urban areas when it comes to water delivery. The findings of the current study are consistent with those of WaterAid, (2013) which indicated that just having a pro-poor policy means little without resources to implement the policy. There is therefore the need for government to show more commitment to improving water supply to the urban poor by providing sufficient resources for the implementation of the pro-poor policies.

Finally, the participants clamoured for community participation in the urban water sector to enable them to articulate their needs to the utility provider. It emerged during the focus group discussions that community participation was lacking in the urban water sector and this has resulted in poor handling of complaints and poor service delivery by the GWCL. This recommendation affirms the views by Adams & Zulu, (2015); Ainuson, (2010); and Mwiru, (2015), which indicate that community participation helps build ownership and enables citizens to demand transparency and accountability from decision-makers and service providers, and thereby enhances the effectiveness of development projects and policies. Given this the call for community participation in the urban water supply is apt.





CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter draws the curtain on the study. It is divided into four main sections starting with an overview of the research problem. This is followed by a summary of the main findings of the study and the implications of the findings for policy and practice. The chapter ends with two sets of recommendations, that is recommendations for further studies and recommendations to ensure sustainable water supply to the urban areas.

Summary of Main Findings

The study revealed that the National Water Policy provides a comprehensive framework aimed at ensuring improved and sustained access to urban areas to potable water supply. However, the challenge has been the implementation of the policy. The water policy has clearly stated objectives but there are no measurable performance indicators to assess the extent of realization of the policy objectives. Moreover, personnel at the decision-making levels of some of the

policy implementing agencies such as the GWCL, do not sign any performance contract. There are no objectively verifiable standards for measuring performance.

Contrary to the dictates of best practices of pro-poor water supply strategies revealed through the review of literature on pro-poor water supply in developing countries, the utility provider does not have a pro-poor unit to facilitate precise targeting of the urban areas for water supply. The company has a mere pro-poor desk which is manned by a single person. The GWCL does not also promote active community participation in the design and implementation of water projects. Moreover, the GWCL is negatively disposed toward the implementation of some of the pro-poor measures outlined in the National Water Policy such as the establishment of the social connection fund. This brings into question the commitment of the policy implementer to the implementation of the pro-poor policy measures outlined in the National Water Policy.

Furthermore, the level of investment in the urban water sector was found to be very low. It appears the National Water Policy was formulated to be used as a tool for marshalling resources for its implementation. There is therefore over-reliance on development partners for the implementation of the policy. This has resulted in inadequate investment to fund capital projects. The governance of the urban water sector was also found to be at variance with the prescriptions of the company's code about the appointment of Managing Directors of the GWCL. The government appoints both the Board of Directors and Managing Directors of the GWCL and this has been a source of conflict in the urban water sector. Besides, the appointment of people to the top-most positions of the GWCL is heavily politicized.

The analysis of the research data had revealed several salient issues in water supply to the urban areas and pro-poor policy implementation. The major findings of the study have various implications on policy, existing studies on urban poverty and urban water supply, theories, and future studies in urban water supply. Based on the findings of this study, five key policy implications can be drawn. First, the evidence from this study suggests that the problem of

water supply inadequacies to urban settlements is significantly linked to inadequate investment in the urban water sector. The utility lacks the needed investment to extend services to new settlements or even maintain the standard of service in areas with reticulation. Government budgetary allocation, grants, and other financial flows are inadequate to increase water supply to meet demand. Given this, there appears to be little prospect for the utility to extend water supply to the urban areas. If immediate steps are not taken to improve access to the urban areas to water services, they will continue to have less access to water and even to less clean water with its attendant health implications.

The findings also indicated that the urban poor would continue to pay a high poverty penalty in the urban water market due to their reliance on water vendors for water supply. The disadvantaged position of the urban poor is likely to push them to the catastrophic spending threshold if the cost of water becomes too expensive. This will compel the urban poor to adopt some coping strategies including reliance on unimproved sources at a lower cost with its associated health risk. It is evident that although the WHO and UNICEF do not consider sachet water as an improved source of drinking water, it will continue to be a popular source of drinking water in the urban areas. The issues associated with the quality of water supplied by water vendors, and in some cases GWCL, will compel the urban poor to drink sachet water which they perceive to be of better quality.

The findings, therefore, provide support for the conceptual premise that satisfaction of the urban poor with domestic water supply is contingent on four key variables. These are accessibility to water, availability or reliability of water supply, acceptability of water sources, and affordability of water. However, the reliability of water supply from a piped network enhances the level of satisfaction of the urban poor with water services. This is because piped-water is affordable and somehow of acceptable quality compared to water from other sources.

The study shows that given the current status of implementation of the pro-poor policies outlined in the National Water Policy, it is not likely that sustainable water supply to the urban areas will be achieved in the foreseeable future. The status of implementation of the pro-poor policy measures may not change significantly, unless the policy implementers are re-oriented to incorporate the conditions for successful policy implementation and the elements of pro-poor policy implementation strategies, which form the conceptual base of this study, into their operations. Media reportage that whips up public sentiments against policy implementers hinders the smooth implementation of public policy. Concerning the awareness of the citizenry on the National Water Policy, this study aspires to be the first that has tested the awareness level of the populace on the National Water Policy, at least in Ghana.

Conclusion

This study attempted to examine the extent to which the National Water Policy is addressing the water needs of the urban areas. Analyses of the policy objectives of the NWP revealed that, the policy document held enough objectives that covered significant aspects of the sector to aid improvements in accessibility to portable water in the urban areas. For instance, Focus Areas and Policy Objectives of the Water Policy spoke directly to the issue of water accessibility from the resource level through to plans for urban and rural water supplies. However, the roll-out of these plans have been riddled with some key challenges which have affected the holistic implementation of policy measures.

In assessing the adequacy of action plans targeting improvement in access to water supply in urban areas, the experts and professionals interviewed in this study intimated that the plans in the existing document do not adequately address the emerging issues confronting water accessibility in urban Ghana. This situation in their view bothers largely on the lack of an overarching legislation within the water sector. The study further revealed that fragmented attempts

by various institutions as well as the shelving of critical research findings on risks posed to waterbodies by the mining sector have all contributed to the non-attainment of the desired level of progress with the plans to improve on water accessibility in urban Ghana.

Challenges identified as continuously stifling improvement in water accessibility in the urban sector include: 1. Inadequate financial resources to undertake expansion projects within the distribution networks hence expanded treatment and transmission infrastructure remains underutilized; 2. The insufficient gains made in attempts to reduce physical and technical losses in the provision of water utility services; 3. The emergence of peri-urban settlements which are not readily factored in the distribution plans of the water service provider; and 4. The recognition and streamlining of the role private participation in urban water service provision.

Recommendations for the Policy Implementers in Ghana's Water Sector

The findings of this study suggest specific courses of action to ensure sustainable water supply to the urban areas, therefore, recommendations have been made to that effect.

1. Establishment of Policy Indicators - the MSWR in conjunction with the GWCL and other stakeholders in the urban water sector develop objectively measurable indicators to track the implementation of the policy measures outlined in the National Water Policy.
2. Expansion of Water Supply Infrastructure. There is the need to inject more funds in urban water infrastructure to rehabilitate the existing urban water systems and build new ones to expand urban water supply. When the urban water systems are expanded, it will increase the productive capacity of the GWCL to meet the water needs of, especially those in urban areas. It is however evident that the government alone cannot mobilize the needed resources to expand the water supply infrastructure. It is therefore important for the government to explore other avenues to improve urban water supply, especially

to low-income areas. In this vein, it would be appropriate for the government to encourage small-scale independent water providers to invest in the urban water sector. This could be done by breaking the monopoly of the GWCL as the sole urban water provider through a legislative instrument; licensing of small-scale independent water providers; and regulating their activities. The small-scale independent water providers could partner with the public sector or even communities to produce and distribute their source of water such as mechanized boreholes with distribution lines as done under the small-town water supply system.

3. Improvement in the Operational Efficiency of GWCL. The study further recommends massive rehabilitation of the over-aged distribution lines to reduce the high level of UfW and improve water supply to people connected to the network. It will also improve water supply to water vendors who depend on GWCL for water. It is also important for the GWCL to procure bulk supply meters to enable the company to accurately measure water produced and distributed by the water systems. Besides, it would be apt for the GWCL to improve monitoring of the distribution system by investing in modern leakage detection systems such as Supervisory Control and Data Acquisition (SCADA) system. The GWCL should also institute measures to reduce commercial losses which are mostly through illegal connections, metering errors, billing anomalies, and siphoning off the water. This could be done through the procurement of meters for customers, improving the billing and collection system, and checking of siphoning of water, among others. However, given the current management style of the GWCL, there is the need to set performance standards with clear benchmarks and sanctions to make these recommendations work.
4. Improved Governance and Accountability in the Urban Water Sector. The governance structure of the GWCL should be in tune with the dictates of the companies' code. The

appointment of a Managing Director of the GWCL should therefore be the preserve of the Board of Directors devoid of external interferences. The appointment of people to the topmost position in the urban water sector should also be devoid of politics, and be done on a competitive basis.

5. There is the need for the Government to demand accountability from the Board of Directors of the water sector institutions for it to trickle down to the management and other staff. This could be done through the introduction of social accountability mechanisms and the signing of performance contracts with objectively measurable targets that cascade down to departments, regional, district, and individual targets to drive efficiency.
6. There is a definite call for community participation in the urban water sector. This will enable poor communities to articulate their needs to the utility. It will enable citizens to demand transparency and accountability from decision-makers and service providers, and thereby enhance the effectiveness of policy implementation. This may however require some changes in the existing system of water services delivery to incorporate a community participation strategy.
7. Recognition of Small-Scale Water Providers It is also worthy for the MSWR and the PURC to come out with mechanisms for licensing the small-scale water providers, also known as water vendors, and regulating their activities. This will help to improve the quality of water supply to the urban areas. The licensing and regulation of the small-scale water providers will formalize their activities and make them more efficient. It will also compel them to produce and distribute quality water at affordable prices. Registration and licensing of small-scale water providers are likely to enhance the effective organization of the small-scale water providers into cooperative associations through which their activities can be effectively monitored and regulated. It will also

enhance their ability to source more capital and form partnerships to expand its operations to complement the efforts of the GWCL.

8. Establishment of Pro-Poor Units in GWCL to ensure accurate targeting of the urban poor for water supply, it is recommended that the GWCL establishes functional Pro-Poor Units with clear cut mandate to deal with the peculiar water supply challenges facing the urban poor. This is because evidence from the review of the case studies of pro-poor water supply shows that service delivery to the urban poor requires a special approach. The establishment of the pro-poor units will ensure local participation in urban water delivery; enhance access of the poor to the piped network; increase the revenue of the utility provider, and improve consumer relations. The unit, when established, should however be manned by people who are well-versed in pro-poor approaches and positively disposed to pro-poor interventions to ensure the realization of its objectives.

For Future Research

1. Further research is needed to determine how to properly target the urban areas for water services since the poor have peculiar challenges with water delivery as well as to establish a specific measure of minimum daily per capita water requirement for Ghana taking into consideration our weather, environment, and way of life.
2. Finally, there is the need for research into the importance of resources; performance evaluation of policy implementers; and the disposition of implementers in policy implementation identified in the study. Such a study will throw more light on the effects of these variables in policy implementation in general.

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APPENDIX A: GUIDE FOR INTERVIEW

PRESBYTERIAN UNIVERSITY COLLEGE GHANA

FACULTY OF DEVELOPMENT STUDIES

Topic: Assessing the Action Plans of the National Water Policy in Improving Ghana's Urban Water Supply.

Interview guide for Key Informant Interview of within Water Sector Institution

This interview is to access the gaps, opportunities embedded in the regulations that govern drinking water supply in Ghana. You have been selected to take part in this interview as one of the means of collecting data for an academic study based on the relevance of the role played by your organization in the institutional arrangement within the water sector. Your identity will be concealed; your responses will be kept confidential and analyzed together with contributions from other interviewees. While we hope you stay and participate fully in this interview you are allowed to discontinue if you become uncomfortable with proceedings.

Respondent Profile

Age:

Sex of respondent:

Educational background:

Institution:

Position held:

Part One-Institutional Mandate, Functions and Capacity

Prelude to discussion

The intention is for the expert to provide the interviewer with information on where the mandate of the organization is drawn from and what the functions of the institution are.

- Briefly describe what the water sector looks like in your view?
- How did your organization come to being?
- How is your institution funded?
- Tell me how you assess the level of funding of activities prescribed by your mandate?
- Can you take me through your reporting lines?
- What are the bottlenecks in reporting?

Part Two: Institutional Mandate and Operations

- What do you do concerning drinking water?
- How effective is this activity in ensuring that drinking water service provision is done well?

Part Three: Institutional Collaboration

- Which institutions must you collaborate with within your line of work?
- How many are you able to work with effectively?
- What are the key reasons for which your institution's ability or otherwise to collaborate effectively?
- How do you hope this challenge is overcome soon?

Part Four: Opportunities for the Sector

- How would you describe whether the sector has lost or gained in the quest to deliver portable water in Ghana?
 - What is there for the sector to salvage?
 - Any recommendations?
-

End of interview

