ADDIS ABABA UNIVERSITY

COLLEGE OF DEVELOPMENT STUDIES CENTER FOR REGIONAL AND LOCAL DDEVELOPMENT STUDIES

AN ASSESSMENT OF LOCAL GOVERNMENT SERVICE DELIVERY: THE CASE OF DRINKING WATER SUPPLY AND SANITATION IN BURAYU CITY

BY

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JUNE , 2018

ADDIS ABABA

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Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for the thesis have been duly acknowledged.

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I hereby certify that the thesis entitled An Assessment of Local Government Service Delivery: The Case of Drinking Water Supply and Sanitation in Burayu City, by Girma Leta Lemi is his own work and has been done under my supervision. It is recommended that this thesis be placed before the examiner for evaluation.

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Date_____

Dedicate to

My beloved Family and Friends for their love and encouragement that they have gave to me throughout the process of the thesis

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Abstract

The estimated water service level of Ethiopia in terms of coverage, quantity, quality, and reliability is among the lowest in the world. Sanitation facilities are also in worst condition. Due to unreliability of safe and inassailability of safe and sufficient water supply and adequate sanitation facilities the estimated service level could be in much less situation. These combine effect of the poor water supply and sanitation facilities in the country have high impact on the economic development of the country and the living condition of the towns' communities (OWRMB, 2010). This study was conducted to assess the existing water supply and sanitation service delivery of Burayu city, Oromiya National Regional State, Ethiopia. To achieve the objective of the study, a total of 350 household heads were randomly selected and interviewed by using a semi structured questionnaire. Both qualitative and quantitative data were collected through questionnaire, personal observation, and key informant interviews. In addition, different documents from secondary sources were reviewed. The collected data were analyzed using a descriptive statistics. The survey result revealed that the city water supply cannot fulfill consumer demand for water. Only 60% of the population have a water supply service from the city administration. Inadequate water source, electric power supply problem, lack of institutional capacity and budget shortage are the basic factors for this imbalance. In line with this, the most frequent complains by water customers were regular interruption of water supply, ill hospitability of the office and unfair water distribution. The collected data also showed that there is prolonged water shortage in two kebeles (Leku Keta and Gefersa Nono) of the city. Consequently, in order to narrow the supply and demand gap, expansion of water supply services that match with the town development must be carried out, the city water supply and sewerage service enterprise should devise a mechanism (such as increase production, using modern technology, using alternative power generation) so as to assure the equitable distribution of water among the residents and the concerned stakeholders (Ethiopian electric power authority, the city administration, NGOs) should discharge their respective responsibilities properly.

Key words: local governance, service delivery, water supply, sanitation, Burayu city

Table of Contents

List of Tables

Table Page

List of Figures

Figure Page

Acronyms

BCWSSSE	Burayu City Water Supply and Sewerage Services Enterprise
CBOs	Community Based Organization
CSA	Central Statistics Agency
ECA	Economic Commission for Africa
EWWCA	Ethiopian Water Works Construction Agency
FDRE	Federal Democratic Ripublic of Ethiopia
GDN	Global Development Network
HEHD	Hygiene and Environmental Health Department
HEW	Health Extention Workers
IWC	Information Education Communication
MDG	Millennium Development Program
MLG	Multi-Level Governance
MoH	Ministry of Health
MoWIE	Ministry of Water, irrigation and Energy
MRSC	Municipal Research and Service Center
NGO	Non Government Organization
OECD	Organization for Economic Cooperation and Development
OWRMB	Oromia Water Resource Management Bureau
SPSS	Statistical Package for Social Science
UAP	Universal Access Program
UNICEF	Unite Nations Children‘s Emergency Fund
UNDP	Unite Nations Development Program
UN-HABITAT	Unite Nations Human Settlment Program
UNPPR	United Nations Population Projects Report
WASH	Water, Sanitation and Hygiene
WAP	Water Access Program
WHO	World Health Organization
WSDP	Water Sector Development Program
WSS	Water Supply and Sanitation
WUP	Water Utilization Prospectives
WWDA	Water Well Drilling Agency

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Service delivery refers to a relationship between service providers and consumers. It is also a continuous cyclic process for developing and delivering user focused services (UNDP, 2013). Municipal Research and Services Centre (1993) also defines service delivery as the actual production of a service such as collecting refuse and disposing it or lighting the streets. Stauss (2005) supports this view and suggests that in economic transactions, it is specialized skills and knowledge that are exchanged for money rather than the physical resources.

Whitaker (1980) observes that depending on the kind of service being offered, each service has a primary intervention of transforming the customer and that the customer is the principal beneficiary. As a fundamental responsibility of government and government institutions, the public service should deliver services that a society requires to maintain and improve its welfare. To do this, government institutions require organizational structures and suitably qualified people which must be supported to deliver the services they are responsible for (Whitaker, 1980). Besley and Ghatak (2007) argue that public services are a key determinant of quality of life that is not measured in per capita income. The authors stress that service delivery is an important feature of the poverty reduction strategy. Hernandez (2006) agree that services are vital to poverty alleviation and key to realizing the Millennium Development Goals (MDGs) both directly and indirectly, enhance the availability of services.

According to the Organization for Economic Cooperation and Development (OECD, 2010), throughout the world cities face the most sensitive challenges of service delivery because of fast growing populations. In many countries, developing countries in particular, the issue of service delivery is a challenge that needs to be addressed given the low quality of service provision and the pressing needs of the poor (Besley and Ghatak, 2007).

Aminuzzaman (2010) argues that although local authorities are the frontline local government organization closest to people, the scope and quality of service delivery is one of the most critical areas that have significantly tinted their credibility and institutional image.

Building an effective local civic sphere is thought to be the fundamental goal of local participatory development (Mansuri & Rao, 2013). The fundamental assumption here is that decentralization brings government closer to the people and makes it easier to stimulate community participation (Ackerman, 2005). Service providers need to have capacity to deliver quality and timely services and to respond to customers' complaints, while it is expected the users of service need to have the capacity to demand adequate and quality services, and hold service providers to account.

According to WHO-UNICEF (2010), access to safe water and sanitary means of waste disposal is universal needs and indeed basic human rights. Besides, they are essential elements of human development and poverty alleviation and constitute an indispensable component of primary health care. Hence, provision of adequate sanitation services, safe water supply, and hygiene education represents an effective health intervention that reduces the mortality caused by diarrheal disease by an average of 65% and the related morbidity by 26%. To contrary, inadequate sanitation, poor hygiene and unclean water result not only in more sickness and death, but also in higher health costs, lower productivity, lower school enrollment and retention rates of girls and perhaps most importantly the denial of the rights of people to live with dignity.
The SDGs put particular emphasis on the importance of improved coverage of water and sanitation supply and have a global target to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation by the year 2015. Achieving the targets will entail various challenges and pose a continuous uphill struggle for many countries in Africa. As a result of rapid growth in urbanization with increased rural urban migration and informal settlements, population growth, and growing poverty, African governments will need to be able to provide access to safe water to 210 million and sanitation to 211 million additional urban residents over the next 15 years. It is also estimated that almost 300 million Africans will be living in slums and informal settlements by the year 2020. This implies that investments in water supply and sanitation would require injections that if governments are to maintain current

levels of water supply and sanitation provision, under the projected growth scenario, access to these services should increase by 10 million a year for a 10-year period (UNESCO,2005).

Therefore, this study aimed to assess the water supply and sanitation service delivery of Burayu city administration. This study is conducted at Burayu city in Oromia National Regional State Oromia Special zone Surrounding Finfine, Ethiopia. The researcher believe that this research may help local municipal councils and authorities in terms of understanding the statusquo of water supply and sanitation service delivery of the city and the ways in which service delivery can be improved.

1.2. Statement of the Problem

The availability of water sources throughout the world is becoming depleted at which populations are increasing, especially in developing countries. This has brought into focus the urgent need for planned action to manage water resources effectively for sustainable development (Khatri and Vairavamoorthy, 2007).

Getachew (2002) stated that water supply and sanitation situation in Ethiopia is very poor, as most of the population does not have access to safe and adequate water supply and sanitation facilities. As a result three-fourth of the health problems in Ethiopia is due to communicable diseases attributable to unsafe or inadequate water supply and improper waste management particularly excreta. Diarrhoeal diseases caused by improper management of water and sanitation are among the major causes of infant and child morbidity and mortality. To the contrary, water and sanitation programs have a direct bearing on the prevalence of diarrhoeal diseases in the population. The combination of safe water supply, sanitation facilities and hygienic practices demonstrated a high potential in contributing to a remarkable decrease in the prevalence of a child and maternal morbidity and mortality.

The estimated water service level of Ethiopia in terms of coverage, quantity, quality, and reliability is among the lowest in the world. Sanitation facilities are also in worst condition. Due to unreliability of safe and inaccessibility of safe and sufficient water supply and adequate sanitation facilities the estimated service level could be in much less situation. These combine effect of the poor water supply and sanitation facilities in the country have high impact on the

economic development of the country and the living condition of the towns' communities (OWRMB, 2010).

Ethiopia has designed and implemented large public sector capacity building program which aims at improving public service delivery. The Public Sector Capacity Building Program introduced in 2004, is one of the largest public sector capacity building program that was designed and implemented. The aim of the program was to improve the scale, efficiency, and responsiveness of public service delivery at the federal, regional, and local level; to empower citizens to participate more effectively in shaping their own development; and to promote good governance and accountability (World Bank, 2004).

However, Wild and Harris (2012) state that public service delivery is still failing in many areas in most poor developing countries. This suggests that there is a need to revisit approaches to assisting service delivery sectors. The authors argue that a shift of emphasis is needed, towards a greater focus on understanding how a range of institutional and governance arrangements can shape service delivery processes and outcomes. Keefer, P. and Khemani, S. (2005) ,these authors try to address some specific types of governance constraints like Political market imperfections , Policy incoherence, Levels of performance oversight or monitoring , Challenges for collective action , Moral hazard and some of the causal mechanisms through which these constraints shape processes and outcomes in service delivery.

According to Teshome et al. (2013) like many developing countries, public service delivery in Ethiopia suffers from weak capacity of public agencies and lack of effective transparency, responsiveness and accountability systems. Direct accountability of service providers to citizens is at the infant stage while the long route is characterized by top-down, slow bureaucratic processes that do not result in effective transparency, responsiveness and accountability. Nor are there sufficient exit mechanisms for citizens, since public service deliveries are under the monopoly of public agencies.

As Jean (2007), too many citizens believe that their local government is the most tangible and layer of government with which the citizens contact in their everyday life. This implies that local government in modern day life is responsible for delivering basic services to its local

communities in faster, easier and more efficient manner which lead further growing to dissatisfaction if it is not managed properly.

According to the Organization for Economic Cooperation and Development (OECD, 2010) throughout the world cities face the most acute challenges of service delivery because of fast growing populations. Burayu city which is witnessing active industrialization, urbanization and population growth is also facing a challenge of providing basic services like drinking water supply and Sanitation, urban land, and infrastructure developments like roads, waste removal, public utility and social welfare. It is therefore important to study the service delivery opportunities in order to suggest ways that will improve service delivery and bring health growth in the city.

On the other hand, the provisions of urban infrastructure like water and sanitation services are clearly observed as critical challenges in the town. As far as the researcher's reading concerns, there is no previous literature conducted that neither relates to service delivery in Burayu city nor are there any assessment of local government service delivery in the town. These situations necessitated research work to look at the issues in the area closely and deeply in order to give clear description of the problems from various urban dwellers and officials point of view. This study is, therefore, one of the efforts to reveal the general condition of the water supply and sanitation service delivery in Burayu city.

1.3. Objective of the Study

The study has the following general and specific objectives

1.3.1. General Objective

The general objective of the study is to assess drinking water supply and sanitation service delivery in Burayu City.

1.3.2. Specific Objectives

- To examine the status of drinking water supply service delivery in Burayu city.
- To identify the major challenges of drinking water supply and sanitation service delivery in the study area.
- To explore the actual consequences of inadequate drinking water supply and sanitation services in Burayu city.

1.4. Research Questions

During this study, the researcher tried to find answers to the following research questions:

1. What is the status of drinking water supply and sanitation service delivery in Burayu city?
2. What are the major challenges of drinking water supply and sanitation service delivery in the study area?
3. What are the actual consequences of inadequate water supply and service delivery?

1.5. Significance of the Study

The provision of clean drinking water and urban sanitation are the main problems in whole world predominantly in poor countries like Ethiopia. Hence, the study aimed to assess the existing water supply and sanitation service delivery situation of the urban dwellers by assessing the sources of water, levels of sanitation services, causes of water and sanitation inaccessibility and their impacts on the livelihood of the people and environment. It provides insight to the local government, policy makers, NGOs, community based organizations and other stakeholders who are concerned with urban water supply and sanitation problems. The paper will also add to the literature of urban water supply and sanitation issue, which are currently the global challenge.

The study will inform the local government about the water and sanitation accessibility, quality, service quality and complain of the dwellers in the city. This in turn helps them to take measurement actions that could insure the accessibility, quality and impartiality of water supply and sanitation services.

The study also aims to explore the general picture of the existing opportunities and challenges of the research area through investigation of local government municipal councils, officials' city communities and development organizations for decision making. In addition, it is found to be important to expand knowledge about the issues in terms of the level of the community satisfaction by the services they obtain from the public organizations. So it is very important to undertake research on customer satisfaction in government organization and identify the gap that may exist and suggest solutions to be used by policy makers, administrators and all concerned bodies.

After all, this study will open up some new directions leading future researchers who want to carry-out an in-depth study in the future concerning the study subject.

1.6. Scope of the Study

This study focused on an assessment of local government service delivery the case of drinking water supply and sanitation in Burayu city. The reasons to select Burayu city for this study is that no study has been conducted in Burayu city concerning the city local government drinking water supply and sanitation service delivery issues. Because of different resource constraints, shortage of enough time and additionally municipal councils have a number of functions and responsibilities under its ordinance, it is difficult to assess all service delivery issues at this study area. Therefore to make it easy, the scope of this study is limited to the assessment of LG drinking water supply and sanitation delivery services of the city as a research.

The main reason for selecting drinking water supply and sanitation services of the city is that Burayu municipality area is rapidly moving towards urbanization and, the main challenge facing by urbanized society is providing these services to their public. For that reason, these services are more appropriate to get a clear picture of what challenges are faced by the local government in terms of better service delivery. And how the LG overcomes its challenges and what strategies will work to deliver the better service to the public.

1.7. Limitation of the study

In the process of collecting primary data, the households were reluctant to answer the entire question and provide the necessary information. It was also very difficult to make interviews

with some officials as they were not available on an appointment time. There was no organized secondary data in the two offices; Burayu City Water Supply and Sewerage Services Enterprise and the municipality office. The available data were fragmented and very difficult to access and get the necessary information.

1.8. Organization of the Paper

The paper is organized into five chapters. The first chapter is the introductory section which depicts the overview of the research where background, statement of the problem, objectives, research questions, significance, scope and limitations of the study and organization of the paper are included. The second chapter comprises a review of related literatures. Chapter three deals with methodology which includes, research design, description of the study area, target population, sampling methods, data source and type, data analysis and techniques and ethical consideration. The fourth discusses Data analysis and Interpretaion .And the last chapter is the conclusion and recommendations part.

CHAPTER TWO

LITERATURE REVIEW

2.1. Conceptual Review

2.1.1. Service Delivery

Service delivery refers to the provision of social or public goods that will promote socio-economic wellbeing of the citizens. Public services offered by government are numerous and may include the provision of public utilities, security, economic development projects, and the enforcement of the law and so on. The delivery of public goods and services at the local government level or the grass root is aimed at moving the standard of living of the populace to the next level (Angahar, 2013). Consequently, the efficient and effective provisions of basic amenities and social infrastructures for the people at the grass root are key factors to the existence of any government (Bolatito & Ibrahim, 2014).

2.1.2. Strategies for Service Delivery

In today's global competitive environment, the service industry plays an increasingly important role in the economy of many countries, therefore, delivering quality service is considered as an essential strategy for success and survival (Parasuraman et al., 1985). Improving service delivery is primarily about improving the effectiveness and efficiency of the way in which services are delivered. A report by the World Bank, (2009) stated that the current cities are faced with many urgent challenges which have necessitated the implementation of new intelligent service delivery systems to tackle those problems.

The reason for this strategy is that, in the developed world, cities are increasingly becoming the driving forces of their national economies (World Bank, 2009). In Jooste (2008) it is indicated that the use of public values, institutions, and service market in contracting can actually improve service delivery. They insist that stakeholder preferences and democratic processes establish the values to be optimized in service delivery. Furthermore, public law and organizational arrangements determine the contracting tools available for balancing competing values; and the

characteristics of service markets influence which contracting tools and vendors are best suited to achieve stakeholder values (Jooste, 2008). More so, a complex combination of strategies is needed to ensure that service employees are willing and able to deliver quality services and that they stay motivated to perform in customer-oriented, service minded ways. Continuous motivation of employees to be customer-oriented will enhance service quality. In order to build a customer-oriented, service-minded workforce, organizations must hire the right people, develop people to deliver service quality, provide the needed support systems, and retain the best people (Jooste, 2008). In 2003 the Economic Commission for Africa (ECA) states that the public sector plays a crucial role in national development. To remain viable, efficient and effective in responding to the dynamic needs of the citizen, it has to embrace strategies that can enhance improved productivity and the quality of services delivered. It outlined a number of strategies that can be adopted by African governments to enhance public sector performance. These strategies that touch on key requirements for improving the public sector in general and service delivery in particular, are based on the concept of a 'lean' government. This means a government that is run in partnership with all stakeholders, and one that focuses on promoting the advancement of the private sector and citizens through a well-managed policy and regulatory environment. The major strategies for improving service delivery as outlined by ECA (2003) are total quality management, organizational strategic management, training and development, and the Lean Six Sigma strategy.

2.2. Theoretical Framework

Researcher intends to apply Service Delivery Models in this study. According to UNDP (1999), service delivery is a set of institutional arrangements adopted by the government to provide public goods and services to its citizens. Therefore, it is the specific institutional arrangements that critically influence the performance of public service delivery. Same paper highlights four basic broad models of public service delivery arrangements that governments everywhere have adopted:

1. Direct Service Delivery Model - The central government brings out legislation enforces it, hires staff, produces and distributes services, invests, either directly operating from the

headquarters or through de-concentrated line agencies, assumes full responsibility, and is accountable not only for provisioning but also for providing services.

2. Privatization Service Delivery Model - The central government transfer the delivery of public services to the private companies. In this case it assumes no responsibility except for monitoring the company's compliance to legal codes. In many countries transportation and communication services are privatized. The basic rational of privatization is to gain advantages of allocative efficiency of the market mechanism and to meet resource gaps by mobilizing private sector investment in the public service sector.

3. Decentralization Service Delivery Model - Decentralization of service delivery functions to local government bodies is the most popular service delivery model in the world. Decentralization is based on subsidiary principals of governance; a rule where provision, production and delivery of services are to be devolved to the lowest layer of the government, local bodies, subject to economics of scale and capacity. By virtue of being closest to the public, local bodies are better positioned to match supply of a given service to citizens'demands, transforming citizens from service recipient client, and ensuring citizens greater accountability for service quality.

4. Alternative Service Delivery Model - In the public service delivery arena, "Alternative Service Delivery Model" is a relatively new phenomenon. It simulates a marriage between the government and private sector (Public-private Partnership) with different contractual arrangements. However, the ultimate ownership is generally vested to the government, and it retains the power to provide public services, whereas the private parties make the actual delivery. In order to make a good research, researcher intended to apply only Decentralization Service Delivery model and Alternative service Delivery Model in this study. Even though the Alternative Service Delivery Model has numerous of sub models, this study apply only the Multi-level Governance Model. As a new model, MLG model is more appropriate for present study.

2.2.1. Decentralization

The theory of decentralization is closely related with democracy, public administration, good governance and development (Khan, 2009). In the mid of the twentieth century, became the latest fashion in development administration, and it used as a tool for the development. The word decentralization could be defined as a transfer of power, authority, responsibility and functions from the central government to other levels of government (Hossain, 2005; Lai & Cistulli, 2005). According to Shamsur M. Rahman (1996), decentralization is the transference of authority from a higher level of government to a lower, delegation of decision making, placement of authority with responsibility allowing greatest number of actions to be taken where most of the people reside, removal of functions from the center to the periphery, a made of operations involving wider participation of people in the whole range of decision making beginning from plan formulation implementation (Hossain, 2005). Ronedenelli (1981) defined decentralization as a transfer of authority to plan, make decision and manage functions from national level to any individual organization or agency at the sub-national level (Ronedenelli, 1981). Whatever scholars understand by decentralization, it comprised with following essential features;

1. Decisions should be made in the field; officers must be selected and trained as to develop the capacity to resolve the problem on the spot.

2. A decentralized administration must be developed as far as possible with the active participation of the people themselves. Their cooperation and compliance are essential and the services of the state and the local bodies supplementing and stimulating but not duplicating their staff or equipment should be utilized.

3. Coordination of the work of the various agencies in the field should be done in the field itself because; central coordination means delays, jealousies and jurisdictional disputes (Hossain, 2005; Rahman 1996).

2.2.2. Multi-level Governance

Multi-level Governance (MLG) is a model which promotes neo-pluralism, meaning that it identifies the participation of different networks and political communities in the decision making process, besides the interest of old groups and problems are solved after reaching a

negotiation through the aggregation of the various divergent interests (Ivan & Cuglesan, 2009; Stubbs, 2005). It has also been described as multi-tiered governance, polycentric governance and multi-perspective governance by various scholars. Multi-Level Governance signifies the totality of relations between public and private sector actors, located at different territorial levels in the governance process (Ivan & Cuglesan, 2009). Gary Marks (1993) originally defined the model of Multi-Level Governance as "a system of continuous negotiation among nested governments at several territorial tiers which supranational, national, regional and local governments are enmeshed in territorially overarching policy networks".

Jachtenfuchs (1995) extended this institutional definition to encompass "the relationships between governance processed and different government levels". Bache and Flinders (2004) outline that currently there is no single widely recognized definition of the model of multi-level governance; however they identify four common strands in the research carried out. The objective of multi-level governance consists of the participation of all the actors, through different forms of partnership, regardless of the level at which they are located (national governments, local and regional authorities, community institutions or civil society). A specific feature of the multi level governance system is the fact that the decision-making process is based on negotiations between the main actors, to arrive at a consensus and non-majority vote (Ivan & Cuglesan, 2009).

2.2.3. Overview of water supply and sanitation

The survival and well being of a nation depends upon sustainable development and for this water supply and sanitation which are ingredients of a healthy and productive life, are essential requirements. For the poor people residing in urban slums and rural areas, to achieve a better economic growth rate and higher productivity, priority has to be given to the health of these people, for which provision of public utilities like water supply and sanitation is necessary (Pathak, Rajola and Rajnish, 2002). Provision of safe and sufficient drinking water with adequate sanitation service in urban areas is an important investment which safeguards health and safety of the people living in urban areas, and protection, conservation and promotion of the environment, especially in developing countries.

It is belived that the benefits of environmental protection, such as clean water, air and suitable sanitation facilities should be available to all, but in reality a disproportionate burden of protecting the environment is borne by the poor, especially the urban poor. An increasing awareness about the environment since 1970's has led to significant budgetary allocations for the water and sanitation sector. The 1980s were declared the United Nations International Drinking Water Supply and Sanitation Decade during, which the international community set an ambitious target of achieving 100% coverage in water supply and sanitation by 1990 (Pathak, Rajola and Rajnish, 2002).

Unfortunately, progress over the decades could not keep up with the population growth. Subsequently, significant investments have been made in that sector, yet progress in sanitation has been limited, resulting in consistently lowers coverage for sanitation in comparison to water supply. According to the WHO-UNICEF (2006), 2.5 billion people are without access to improved sanitation (corresponding to a global access rate of 62%) and one billion people in rural areas still practice open defecation. In terms of drinking water, 87% of the world's population uses drinking water from improved sources as of 2006 (54% piped connection in their dwelling, plot or yard, and 33% other improved drinking water sources). This translates into 5.7 billion people worldwide who are now using drinking water from an improved source, an increase of 1.6 billion since 1990. Although a number of developing countries are on track to meet the Millennium Development Goal of 77% rate of coverage, large parts of sub-Saharan Africa and Southern Asia are not, meaning that the world as a whole is not on track to meet the MDG sanitation target (WHO-UNICEF, 2006).

In developing world, one third population does not have access to safe drinking water and sanitation. In these nations, more than 80% of diseases and one third of deaths are caused by the consumption of contaminated water (Palamuleni, 2002 cited in Mengistu, 2008). For example at present more than 35 million Ethiopians are deprived the dignity of adequate sanitation facilities to safely contain and dispose of human feces (UNICEF, 2008) and half of 80 million population of Ethiopia is suffering from unnecessary water related diseases, Khartoum's sewage covers 5% of the urban area. Trends indicate that most countries are on track to meet the MDG drinking water target (89%), except sub-Saharan Africa, where coverage is still lower in comparison to other regions (GDN, 2009).

Inaccessibility of safe water and adequate sanitation facility strengthens the cycle of disease, poverty and weakness; therefore water and sanitation programs are instrumental in efforts to rescue people from poverty. In other word, provision of water and sanitation should be indispensable parts of the Poverty Reduction Strategies applied by developing countries. In the developing world today poor access to safe water and adequate sanitation continues to be a threat to human health. Expanding access to basic water supply and sanitation, integrated with hygiene education can reduce the burden of water-related diseases significantly by improving the lives of a large part of the world's population. Since provision of sanitation breaks the vicious cycle of poverty and initiates a virtuous cycle of economic well-being, it should be a vital ingredient in the poverty alleviation programs (Pathak, Rajola and Rajnish, 2002).

2.2.3.1. Urban water supply

Safe drinking water is the birthright of all humankind as much a birthright as clean air (Rao 2002) while access to clean water can be considered as one of the basic needs and rights of a human being. Health of people and dignified life is based on access to clean water (Korkeakoski, 2006). Alaci and Alehegn (2009) stated that, water is important in a number of ways; these include domestic and productive uses. Domestic water use takes the form of drinking, washing, cooking and sanitation, while productive water uses includes those for agriculture, Beer brewing, brick making etc. Safe drinking water matched with improved sanitation contributes to the overall well being of people; it has significant bearing on infant mortality rate, longevity and productivity.

However, the majority of the world's population in both rural and urban settlements does not have access to safe drinking water. According to WHO (2006) only 16% of people in sub-Saharan Africa had access to drinking water through a household connection (an indoor tap or a tap in the yard). Not only their poor access to readily accessible drinking water, even when water is available in these small towns there are risks of contamination due to several factors like inappropriate waste disposal and lack of water supply infrastructure such as pipe line for water (Mengistu, 2008). According to Water Utility Partnership (Africa, 2003), the primary goal of all water supply utilities is to provide customers with a 'private' connection to the piped water supply network.

For many public officials, policy makers and politicians a household or yard connection (hereafter referred to as a private connection) is considered the most satisfactory way to meet the following key objectives;

_ Public health objectives: by ensuring better quality and access.
_ Commercial objectives: by facilitating cost recovery and revenue generation.
_ Social objectives: by improving access for the poorest and enhancing security and safety.
_ Environmental objectives: by enabling better demand management and water conservation.

2.2.3.2. Sources of water

According to Sijbemsa, (1989) and UN-HABITAT (2003), water sources fall into three general categories.

Rainwater: Rainwater refers to rain that is collected or harvested from surfaces (by roof or ground catchment) and stored in a container, tank or cistern until used. Rain water is the purest water in nature but it tends to become impure as it passes through the atmosphere. It picks up suspended impurities from the atmosphere such as dust, soot and microorganisms and gases such as carbon dioxide, nitrogen, oxygen and ammonia.

Surface water: Surface water originates from rain water. It is the main source of water supply in many areas. It includes rivers, tanks, lakes, manmade reservoirs and sea water. Surface water is prone to contamination from human and animal sources. As such it is never safe for human consumption unless subjected to sanitary protection and purification before use.

Groundwater: Groundwater is water used by humans comes mainly from land such as wells, springs, etc. It tends to be of higher microbiological quality (having undergone natural soil filtration). However, it is relatively difficult to extract. More technology and energy is needed (compared with other water sources) to bring water from within the earth up to the surface. UN-HABITAT (2006) stated that, water service provision options are standpipes, yard and house connections.

Household connection: Household connection, is a water service pipe connected within house plumbing to one or more taps (e.g. in the kitchen and bathroom) or tap placed in the yard or plot outside the house.

Public tap or standpipe: Public tap or standpipe is a public water point from which people can collect water. Many low-income households that are unable to afford a household connection are relying on public water points.

Domestic reseller: Increasingly, households with a private connection are selling water to their neighbors.

Intermediate service providers: this includes private providers or community based organizations delivering water in unsaved areas.

2.2.3.3. Water accessibility

The concept of accessibility is the framework for the research discussion. To understand the best location, define accessibility and this is probably the most complex and important of all tasks facing those concerned with the provision of any social service. The task is a two dimensioned problem organizing a limited set of resources in a way, which is efficient, yet equitable. In real terms, it ultimately declines to the basic dilemma of having to rationalize supply of services yet ensuring improved accessibility of these services to the consumer (Adeyemo 1989). Accessibility therefore connotes physical availability of a service or facility. It establishes the extent to which factors like distance, time and cost have decayed. Optimum accessibility in the case of water means effectively over coming access indicators of distance, time and affordability (Alaci and Alehegn, 2009).

Accessibility must be seen within the context of the ease with which people can obtain the services of a facility and function. Accessibility increases with decreasing constraint both physical and social. According to Adeyemo and Afolabi (2005), accessibility is the balance between the demand for and the supply of consumer services over a geographic space and narrowing or bridging the gap between geographic spaces is the all significance of transport.

Access to essential resources and services has come to be recognized as positively related to development such that inaccessibility or lack of access is cited as lack of development or symptom of underdevelopment (Ayeni, 1987 and Moseley, 1979 cited in Alaci, 2004). To the extents that improved access to essential services has become an accepted part of the rubrics or measure of development and standard of living (Alaci and Alehegn 2009).

According to (UN-HABITAT 2003), access to safe water is the share of the population with reasonable access to an adequate amount of safe water. Safe water includes treated surface water and untreated but uncontaminated water such as from springs sanitary wells and boreholes. In urban areas the water source may be a public fountain or a stand pipe not more than 200 meters away from households. An adequate amount of water is that which is needed to satisfy metabolic, hygienic and domestic requirements usually about, 20 liters of safe water per person per day. This minimum quantity however vary depending on whether it's an urban location or rural and whether warm or hot climate. Perhaps this is why the African Water Development Report (2006) described basic human water need to be 20 to 50 liters of uncontaminated water daily. UNICEF (2006) stated that, population using improved sources of drinking water are those with any of the following types of water supply: piped water (into dwelling yard or plot), public tap or standpipe, tube well or borehole, protected well, protected spring and rain water collection while unimproved sources are unprotected dug well ,unprotected spring ,surface water (river, dam, lake, pond, stream, canal, irrigation channel), vendor-provided water (cart with small tank or drum, tanker truck),bottled water, tanker truck provided water.

2.2.3.4. Water accessibility indicators

According to WHO (2004), they are basic indicators for measuring water accessibility.These indicators show four paramount levels of water accessibility that include optimal access, intermediate access, basic access and no access. These are indicative of the level of water availability, which is a measure of the quantity available for use. Basically, they reflect the extent to which accessibility challenges such as time, distance and affordability are formidable or otherwise.

Table 1 .WHO water accessibility indicator

Travel distance to collect water	WHO standard	Average time spent to collect water	WHO standard
Water supply through taps continuously	(Optimal access)	Water supplied through multiple taps Continuously	Optimal access
< 100m	Water supplied through multiple taps continuously	Within 5 minute	Intermediate Access
101-200m	Between 100 and 1000m	5-30 minutes	Basic access
201-500m			
5001-1000m	(Basic access)	30 minute-2hours	No access
1.2-2km(1.5km)	More than 1000m (No access)	2-4hours	
>2km(3km)		>4 hours	

Source: WHO, (2004)

2.2.3.5. Affordability

The affordability of water has a significant influence on the use of water and selection of water sources. Households with the lowest levels of access to safe water supply frequently pay more for their water than households connected to a piped water system. The high cost of water may force households to use small quantities of water and alternative sources of poorer quality that represent a greater risk too (Public Health Protection, 2000). Private access to tap water is the cheapest for the consumer. Dependence on a shared standpipe increases prices almost four times. Private water delivery through tanker service (or sachet or bottled water) is the most expensive and tanker water delivery costs many times the tap water price. Thus, the consumers paying the most for water are the ones with the lowest income (Alaci and Alehegn, 2009).

2.2.3.6. Time and distance travel to fetch water

Time and distance traveled to fetch water are also key indicators of water accessibility. To most communities of Africa, long distance travel to fetch water is common. Hence, they spend much time and money. According to WHO (2004) standards if households travel more than 200 meters far away from house in urban, there is no access. Distance travel to fetch water is also one of the

indicators of water accessibility. WHO standards in relation to time, more than 30 minutes no access 5 minutes - 30 minutes basic access and within 5 minutes intermediate access

2.2.4. Urban sanitation

World Health Organization (WHO) defines sanitation as group of methods to collect human excreta and urine as well as community waste waters in a hygienic way where human and community health is not altered. The main objective of sanitation is to decrease the spreading of diseases by adequate waste water excreta and other waste treatment, proper handling of water and food and by restricting the occurrence of causes of diseases (Korkeakoski, 2006). Sanitation is a system to increase and maintain healthy life and environment. Adequate sanitation systems include both facilities and behaviors that form a hygienic environment and reduce people's exposure to disease-causing organisms (Bruijne, Geurts and Appleton, 2007) Korkeakoski (2006) also stated that, the purpose of sanitation is assuring people enough clean water for washing and drinking. Typically, health and hygiene education is connected to sanitation in order to make people recognize where health problems originate and how to better sanitation by their own actions. Essential part of sanitation is building and maintenance education on sewerage systems, wash up and toilet facilities

A household is considered to have adequate access to sanitation if a waste disposal system, either in the form of a private toilet or a public toilet (i.e. latrines at markets, bus terminals and lorry parks, patient and staff latrines at health facilities, teacher and pupil latrines at schools) shared with a reasonable number of people, is available to household members (UN-HABITAT2006).

In other word, safe waste disposal through the provision of latrines is a major priority as it creates the first barrier to direct and indirect excreta-related diseases. In the field, water supply and hygiene education, which would include sufficient water supply and soap; latrine maintenance; and the actual training and education, are important complements to latrine construction (Steve, 2004**)**.

Mein zinger, Oldenburg and Otterpohl (2008) stated that, the majority of the existing toilets in urban areas of Ethiopia are simple pit latrines, which face a variety of problems like pit collapsing and flooding. Also the need for digging of new pits once the old one is filled is considered a drawback of this conventional technique. The use of septic tanks is impeded by

factors like the lack of dislodging facilities (e.g. vacuum trucks) and missing sludge management concepts. Centralized sewerage systems are usually not within reach of the municipalities due to the high costs for sewers and treatment facilities. For example, the sewerage system in Addis Ababa caters only for about 3% of the city's population. In addition, many Ethiopian cities face difficulties in implementing a water-based sanitation system (i.e. water-flushed toilets) as a result of water shortages and inappropriate water supply systems.

According to (WHO. 2002), access to sanitation includes safety and privacy in the use of these services. Coverage is the proportion of people using improved sanitation facilities such as public sewer connection, septic system connection, pour flush latrine, simple pit latrine and ventilated improved pit latrine.

In addition to health, sanitation improvements have to meet the perceived needs of the intended users among which;

Convenience: Women in particular dislike having to walk long distances to relieve themselves.

Comfort: People dislike the smell of excreta and public toilets in densely populated communities are generally appalling.

Safety: Defecation sites are dangerous places for women and children.

Status: Families are ashamed when they cannot offer guests proper toilet facilities.

2.2.4.1. Available technology options for sanitation

Neto and Tropp (2000) stated that, there are numerous technical options for waste management, many of which, if properly designed, constructed, operated and maintained will provide adequate and safe service as well as health benefits. It is necessary to choose technically, economically and financially feasible options for sustainable waste management. Equally important is the involvement of all stakeholders playing a role in sanitation development, including users (or customers), community organizations, authorities and entrepreneurs. In particular, it is essential to involve women in the design and selection of domestic sanitation facilities.

Franceys et al. 1992; Mara, 1996b; UN-HABITAT, 2006; and WHO, 2010 also stated that, sanitation systems can be divided into two principal categories; i.e. onsite and offsite.

1. Onsite sanitation

On-site sanitation is the main form of excreta disposal in most sub-Saharan African cities and will remain the most appropriate level of service for the urban poor in the medium term. Despite heavy public investment in sewerage systems in most primary and some secondary cities, typically only 10-15% of the urban population benefit from access to the sewer network.

According to Water Utility Partnership (Africa, 2003; Ahmed and Nalubega, 2001 and Mara, 1996b)**,** onsite sanitation include SanPlat' latrines, ventilated improved pit (VIP) latrines, pour flush (PF) toilets, and ecological sanitation ('Eco San') toilets. In these systems, wastes are stored at the point of disposal and usually undergo some degree of decomposition on site. Onsite systems either require periodic emptying or construction of new facilities once they fill up.

2. Offsite sanitation

Offsite systems are forms of sewerage where part or all of the excreta are transported away from the household for treatment or disposal at a central point. Sewerage may be conventional (typically, connected to flush toilets and household grey water, and in many cases storm water) or modified where only liquid matter is piped away (small-bore sewerage) or where sewerage works on a non-constant flow principle (shallow sewers) and does not take storm water (WHO,2010). In order to minimize environmental pollution and disease transmission it is important that the sewage is properly treated and not allowed to flow untreated into rivers or other water bodies (WRI, 1998). It is important to note that there is no single appropriate technology for all circumstances and all socio-economic segments of a community, town or city. The more costly or, apparently, convenient technologies may not provide the greatest health benefit or may be unsustainable from an economic or technological point of view (Franceys et al. 1992).

On the other hand, Sewers are not just limited to pipes below ground. Open channels may also be used. These may be unlined, pitched with stone or lined with concrete. Where the lining is not water tight, the channel can act as an infiltration trench. This may be acceptable for surface runoff, but is not recommended for conveyance of foul sewage. Surface run-off can flood the channel, causing pollution, which is a greater risk to health than the indirect route of infiltration to groundwater. Where open channels are used for foul sewage and no alternative is possible,

they should be routed away from populated areas and have raised sides to limit the ingress of rainwater (WHO, 2010).

Sanitation is a challenging issue of today's world especially in poor countries where inadequate resources and awareness of community. Thus, it would be decent to launch community teaching and expanding community driven programs, encouraging local institutions such as; civil society organizations, community based organizations and private investors on the sector.
In general, to win the battle against poor sanitation in developing countries like Ethiopia, several programs has to applied otherwise sanitation is a rampant threat of health in these countries.

2.2.5. Impacts of water and sanitation inaccessibility

Although water and sanitation are the primary needs of human being, unimproved water and sanitation services have many negative impacts on people livelihood. Among which; health, socio-economic, environmental degradation and poor educational performance are the major.

2.2.5.1. Health impacts

The improvement of water and sanitation in developing countries is largely driven by the need to reduce the incidence and prevalence of infectious disease caused by pathogenic micro organisms. The majority of pathogens that affect humans are derived from faeces and transmitted by the faecal-oral route. Pathogen transmission may occur through a variety of routes including food, water, poor personal hygiene and flies (Ahmed and Nalubega, 2001).

According to USAID/E Statement of Work (SOW) for the Millennium Water Alliance (MWA) Water, Sanitation & Hygiene (WASH) program evaluation, "approximately 3.1% of deaths worldwide are attributed to unsafe water, sanitation and hygiene practices. Africa carries the heaviest burden, with 4 to 8% of all disease in Africa being related to poor water, sanitation and hygiene. In Ethiopia, water and sanitation related diarrhea accounts for approximately 20% of all deaths in children under the age of five, taking the lives of close to 100,000 children annually.
Thirty two percent of this diarrhea could be prevented by improving sanitation interventions such as pit latrines, septic tanks and composting toilets" USAID/E (2008).

According to FDRE (2005) Demographic and Health survey, only 8% of Ethiopian households have water on their premises and only 38% have a toilet. In addition, poor water and sanitation is

the source for many other health problems including chronic intestinal parasites that attribute to high prevalence of malnutrition, anemia, diarrhea, cholera, malaria, schistosomiasis, trachoma, intestinal helminthes retarded growth.

2.2.5.2. Socio-economic impacts

Poor access to water supply and sanitation limits opportunities to escape poverty and exacerbates the problems of vulnerable and marginalized groups especially those affected by HIV/AIDS and other diseases (Alaci and Alehegn, 2009).

According to Ethiopian Ministry of Health (2005), the well known negative synergy of diarrheal disease, malnutrition and opportunistic infections are known to have short-term health impacts and long term debilitating effects. In the long term, child development is impaired resulting in growth retardation and diminished learning abilities. It is estimated that 4 in 10 children will not realize their educational potential which ultimately inhibits socio-economic development. In addition there is a potential productive time lost to illness caring for the sick and attending clinics. There are also the financial costs of treatment for medicines and clinic attendance.

2.2.5.3. Environmental impacts

Besides being pollutants of surface waters (necessitating higher treatment costs), faeces and urine are a potential (under-exploited) source of compost and fertilizer which could help address decreasing soil fertility and reduce the high cost (both financial and environmental) of chemical fertilizers. They can also be used to produce biogas (a renewable energy source) which as well as safely containing excreta could contribute to reducing deforestation which is a key environmental issue. Biogas digesters can also be 'fed' with organic solid waste in urban areas as an efficient treatment and use of 'waste' (MoH, 2005).

2.2.5.4. Poor educational performance

According to the Federal Democratic Republic of Ethiopia National Hygiene and Sanitation Strategy of (MoH,2005), Ministry of Health 2005 as well as the diminished learning abilities mentioned above, it is widely believed that a significant number of school days are lost due to diarrhea. This mainly affects girls who end up staying at home to care for siblings. Worm infestations, anemia and vitamin A loss have been shown to decrease learning abilities among 4

in 10 girls. Lack of separate, private, secure, hygienic latrines, particularly in adolescence (during menstruation) is associated with a high dropout rate of girls.

2.2.6. Benefits of access to clean dirking water and sanitation

According to UNICEF (1999), there are a number of potential benefits to improved access to water supply, in addition to the reduction of disease. That is reasons why many communities give for placing a high priority on improved water supply usually relate to benefits beyond health. These benefits are of particular importance to women. A closer, cleaner source of water can produce immediate and far-reaching improvements on women's lives.

2.2.6.1. Convenience

Most people, when identifying improved access to water as a priority, are thinking of convenience. Everybody wants water as close as possible to their home, simply because it is more convenient. As such, convenience is as important a consideration as health benefits. In some societies and situations, convenience is also related to the security of women: water closer to home can minimize the chances of abduction or assault.

2.2.6.2. Time saved

Women and girls can spend many hours a day collecting water from distant sources and thus the time saved by having a safe water source closer to the household can be very significant. The time saved is used for much needed leisure or, possibly (but not necessarily) activities relating to improved child care, or economic production. Less time spent fetching water is one less possible excuse for not allowing girls to attend school or in some extreme cases, even to marry.

40 billion hours lost each year in Africa. Estimates indicate that three hours per household per day are being lost to water hauling by those rural households in Africa which do not have access to a minimum level of service such as a hand dug well or a hand pump-equipped borehole. Some 258 million people lack access to improved water in rural areas of Africa today; these people comprise about 37 million households. At three hours per day, 365 days a year: 40,515 million (40 billion) hours are lost annually to this necessary but unproductive chore, largely undertaken by women and girls. This time could otherwise be used for activities such as child care, education and agricultural production (UNICEF, 1999).

2.2.6.3. Energy saved

Studies have shown that women who walk long distances to collect water can burn as much as 600 calories of energy or more per day, which may be one third of their nutritional intake. Closer sources of water can thus improve the nutritional status of women and children (and hence health and wellbeing) (UNICEF, 1999).

2.2.6.4. Prevention of injuries

When girls are forced to carry heavy loads of water over large distances, there is a danger of lasting spinal column and pelvis injury and deformations. Closer water sources minimize this (UNICEF, 1999).

2.2.7. Challenges in urban water supply and sanitation

In the provision of adequate clean water and sanitation facilities to urban dwellers, the world faced many challenges, which are related to capacity of the nations, (i.e. technological knowhow and institutional), inadequate finance, rapid urbanization and declining of global water resource.

2.2.7.1. Lack of capacity

According to Wallace et al (2008), capacity is a flexible concept and encompasses the public sector, academia; community based organizations and the private sectors, and ranges from the individual to institutions to society as a whole. Capacity can be described in terms of the human, technological, infrastructural, institutional and managerial resources required at all levels from the individual through to national governance. Not only does capacity have to be built within each of these levels, but it has to be institutionalized and local communities need to be empowered to use it effectively. Additionally, capacity building incorporates the followings.

1. The capacity to engage, educate and train; including community awareness building, adult training and formal education; so as to provide sufficient numbers of competent human resources to develop and apply enabling systems within the local environment.

2. The capacity to measure and understand aquatic systems through monitoring, applied research, technology development and forecasting, so that reliable data are used for analysis and decision making.

3. The capacity to develop policies and programs and to legislate, regulate and achieve compliance through effective governmental, non governmental and private sector institutions and through efficient enforcement and community acceptance, particularly for rural areas.
4. The capacity to identify and provide appropriate and affordable water technologies, infrastructure services and products through sustained research, investment and management.

1. Technological capacity

Innovative technologies are essential to overcome barriers to water and sanitation service provision**.** Technological capacity includes the development and application of new technologies, the technical skills needed to effectively construct, operate and manage a technical solution; the translation of information regarding technologies to promote informed decision-making when implementing a technical solution; the availability and accessibility of spare parts (Sijbesma, 1989). However, technology providers need a better understanding of local conditions and policies.

2. Institutional capacity

There is a need for institutions that bring together many disciplines, such as the natural sciences, public health, engineering and the social sciences. Integration and interaction between institutions and different sectors of the population, at decision-making, executive and participative levels is required to plan and execute actions in a coordinated way. This integration is the basis for multi spectral approaches to ensure that planned goals are achieved and actions converge to solve environmental, water and health problems (Wallace et al, 2008).

2.2.7.2. Inadequate financing

Historically, water and sanitation has suffered from severe under financing. This results from inadequate internal financial capacity in the poor countries to achieve water and sanitation goals; poor political decisions for allocation of development aid; an overall reduction over time in development aid; and the limited cost recovery potential in poverty stricken regions (Wallace et al, 2008).

For example, according to the 2005 Water Supply and Sanitation Millennium Development Goal-Needs Assessment Report by the government of Ethiopia estimates the investment requirements for water at US$297 million per year for the next ten years (2006-2015). Per capita investment for water in urban and rural areas is US$105 and US$41 respectively while investment for sanitation in urban and rural areas is US$271 and US$9 respectively. Total government allocation and commitment for WSS over the next seven years has been projected at US$12 million (US$5.4 million for rural, and US$6.6 million for urban). Given the cost recovery policy for capital, operations and maintenances costs, community investment is projected at US$16 million over the next ten years. Projected ODA is US$75 million per year for the next ten years, based on commitments from a variety of donors. Still, this leaves a financing gap of US$197 million per year.

In addition, poor targeting of aid and a multiplicity of actors and structures compound the financial shortfall. Prioritization of spending plays a key role, with many developing countries investing only a small fraction of money into water compared with military spending. For instance, military spending in Ethiopia is 10 times greater than that spent on water and sanitation and in Pakistan the discrepancy is even greater 47 times (UNDP, 2006). Wallace et al (2008) also stated that, to ensure that resources for safe water and sanitation are used effectively at the local level, the local capacities to design, finance and manage improved service delivery must be greatly enhanced. To this end, the Camdessus Panel and others have urged that corruption, managerial capacity, sustainable cost recovery and legal and contractual aspects of safe water and sanitation management within developing countries be addressed.

2.2.7.3. Population growth and urbanization

Population growth and rapid urbanization will create a severe scarcity of water as well as tremendous impact on the natural environment. According to UNPP (2006), in less developed countries, urban population will grow from 1.9 billion in 2000 to 3.9 billion in 2030, averaging 2.3% per year.

Besides having less or not invested in urban infrastructure, Africa is urbanizing faster than any other region. Between 1990 and 2025, the total urban population is expected to grow from 300 to 700 million; and by 2020, it is expected that over 50% of the population in African countries will

reside in urban areas. According to Cleophace (2007), in order to meet the established millennium development goal of 'halving the unsaved population by 2015'; urban Africa will require 80% increase in the numbers of people served. This objective would require, on average, about 6,000 to 8,000 new connections every day. Political commitment to these goals, backed by resources and action is essential if utilities are to prevent a widening of the gap between 'saved' and 'unsaved' households.

According to the 1994 Ethiopia population census report showed, the total urban population was 7,323,122 (13.7% of the total population), after ten years (i.e. 2004) the total urban population increased to 17,588,735 (32.89%) and by the year 2015 urban population is going to increase by 22,925,177 (32.26%) Ethiopia Central Statistical Authority (1994, 2004 and 2015 projection). In order to meet the future water demand, cities will need to tap their water supply either from a deep ground or surface sources situating a far distance away from the urban area (Khatri and Vairavamoorthy, 2007).

2.2.8. Increasing global water scarcity

UN-HABITAT (2006) stated that, not only is the numbers of those requiring better water supplies very large, water itself is becoming scarcer. The number of people living in water29 stressed and water scarce over the world is estimated to increase approximately six fold from 1995 to 2025 to reach 2.8 billion.

2.2.8.1. Water supply and sanitation policy in Ethiopia

The water supply and sanitation policy began in Ethiopia in the mid of 1980s.At that time the general policy of the government was to provide water and sanitation through its own public water sector institution with the supply side approach**.** In this regard in order to strength the government owned institutions, the military government (since 1975) nationalized the private sector driller and their equipment first absorbed by Ethiopian Water Works Construction Agency (EWWCA), which was later used to set up the autonomous Water Well Drilling Agency (WWDA). The whole water sector was generally envisaged as a supplier of "free" services which failed to consider the scarce nature of water resource in the country. Tariff and cost recovery also could not get full attention due to the socialist economic policy implemented in the country (MoWR, 2002). In the same way the sanitation part of the Water Resource Management

policy sets the general framework along which sanitation is provided with the objective of enhancing the well-being and productivity of the people through the provision of adequate and reliable sanitation services. The new sanitation strategy focuses in public sector subsidies on promotion and public facilities rather than subsidizing at the household level. This is an example of a cost conscious and well conceived use of limited public resources in the areas where they are likely to do best.

The policy recognizes the inseparable nature of water supply and sanitation and requests the promotion of both an integrated and sustainable framework. Therefore, according to this policy, all water supply institutional setups have legal right to implement the integrated water supply and sanitation policy. In addition to these since the establishment of a Ministry for a water sector in 1995/96, a strategic and participatory approach has been introduced by bringing into place key sector reform initiatives. The National Water Resources Management Policy also requires urban centers to cover their investment , operation and maintenance costs, while rural WSS is required to cover operation and maintenance costs, with some cost sharing (up to 10 percent) for initial investment cost. The National Sanitation Strategy calls for a shift towards funding 'sanitation promotion and leveraging resources', and away from subsidy for hardware, and gives priority to low-cost, pro-poor solutions. Importantly, the financial requirements to achieve WSS targets are premised on the capacity to implement the approaches outlined in policy (MoWR, 2003).

2.2.8.2. Water sector policy and goals

The overall goals of the Federal Water Resources Management Policy (1999) and the Water Sector Strategy (2001) are to promote national efforts towards efficient, equitable and optimum utilization of the available water resources of Ethiopia in order to achieve significant socioeconomic development on a sustainable basis. Some of the major principles of the policy are devolving ownership to lower tiers and enhancing management autonomy to the lowest possible level, promoting involvement of all stakeholders, including the private sector; moving towards full cost recovery for urban water supply systems and recovery of operational and maintenance costs for rural schemes; and, enhancing urban water supply through autonomous bodies.

A five-year Water Sector Development Program (WSDP) is in place. The Universal Access Program (UAP) for Water Supply and Sanitation Services (2006-2012) was developed by the

Ministry of Water Resources in consultation with the regions. It is expected to achieve 100 percent sanitation and 98 percent drinking water supply in the rural area at the end of the plan year (2012). At the end of the planned year the total of 50.9 million new people are expected to get drinking water and 66.9 million new people to get sanitation facility. In terms of the urban areas the coverage is expected to increase from 80 percent water supply and 51 percent sanitation to 100 percent at the end of the planned year for both water supply and sanitation. The government has planned to provide the stated water supply through 1181 deep wall, 224 shallow well, 1143 streams and 1468 harassing rivers (UAP, 2005).

2.2.9. What variables affect the better service delivery?

The minimization of disadvantages of decentralized service delivery depends on a number of variables. Akpan H. Ekpo (2008) has identified following as key variables affecting the better service delivery of lower levels of government:

1. **Appropriate Constitutional and Legal Framework** - Powers and functions of lower levels of government must be clearly defined through an appropriate constitutional and legal framework. Through this process central government must be willing to give up control and recognise the importance of sub-national government in service delivery (Ekpo, 2008).

2. **Sufficient and Competence Human Resources** - A one of the major decisive variable of efficiency and effectiveness of services provided by sub-national governments is the human resource or staff which it has. In this way, sufficiency and competency of that staff is very important. Where shortages of qualified and experienced persons exist, the training, retraining and opportunities for higher education must be given in order to develop professional and technical expertise that would be help to enhance the efficiency and effectiveness of the service delivery at the sub-national levels (Ekpo, 2008).

3. **Adequate Financial Resources** - Lower levels of government must have legal authority to raising needy revenue to support its expenditure requirements. Thus, the fiscal relationship between the center and lower - levels of government must be clearly worked out on the basis of equality, fairness and justice (Ekpo, 2008).

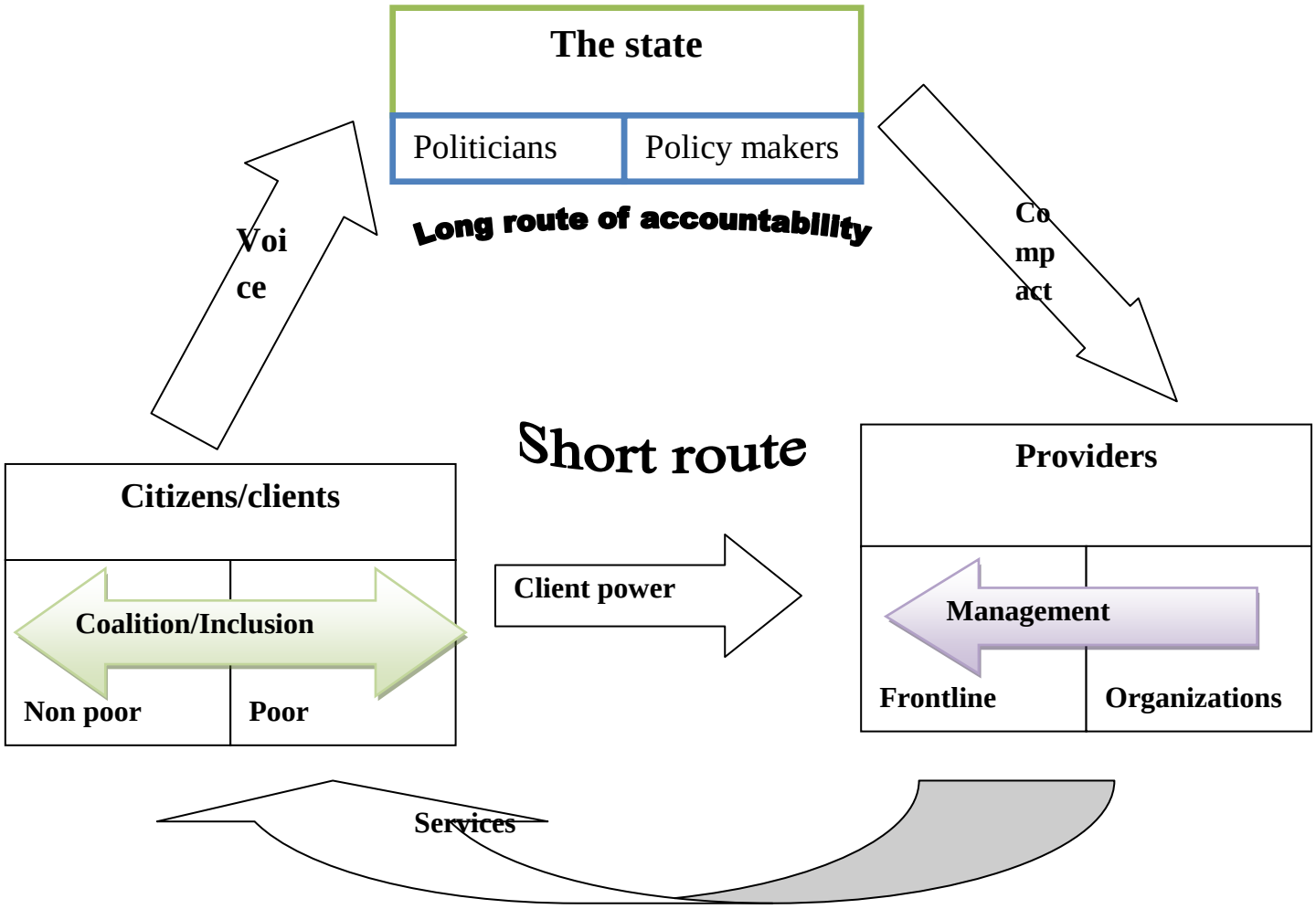
4. **Accountability and Transparency** - Decentralization must be accompanied by accountability and transparency, so that is no abuse of power. This will help to fight against the corruption. Corruption implies a breakdown of cooperative behavior in which few collude to detriment of all. Thus, devolving functions to smaller units that are closer to the population should in theory increase consensus and legitimacy concerning the choice of public services. This, in turn, can be expected to foster cooperation, vigilance, as well as acceptance of and adherence to rules of public sector integrity (Rule-obedience). This could be effective where the financing of the public services decentralized through the assignment of tax instruments or the collection of user fees (Ekpo, 2008).

5. **Ensure the Easy Access to Community for Information and Services** - A one of the important problems faced by the developing countries‟ public sector, is that policy-makers as well as ordinary people have limited access to information and services. Implementation of strategies like Citizen Charter, e-Government will be helpful to overcome these problems and ensure the easy access for public to information and services, and end result of that is the enhancement of efficiency and effectiveness of services (Ekpo, 2008).

6. **Mutual Understand between Central and Lower level of Governments** - It is important that both central and lower level of governments engage in dialogue to reduce tension and conflict. In additionally, dialogue is necessary to face the new challenges and ensure coordination and to guarantee macro-economic satiability of the country (Ekpo, 2008).

2.3. Conceptual Framework

Figure 1: conceptual Framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

The research design used in this study was descriptive research method. The study is based on both qualitative and quantitative research methods. Qualitative and quantitative data were gathered by using primary and secondary sources. Primary data was gathered from the residents of the city, Burayu city administration officials and city water supply and sewerage service enterprise workers who are responsible for delivering water supply and sanitation services to service seekers.

3.2. Description of the Study Area

Prior to development of early settlements, Burayu was covered with dense forest. As a town Burayu was founded in 1946 E.C by land lord named Girazmatch Robi Kelecha. The town gets its name in Afan Oromo word "Burayu" from the known indigenous tree called "Burayu" in Amharic "Tikur Inchet" found in dense forest of the area (Burayu City Profile 2017)

Burayu is one of a local municipal government which experienced fastest urbanization in post 1991 and is located in the western fringe of Addis Ababa, along the Addis Ababa-Ambo road at about 15 km from the center of Addis Ababa city administration office (Piazza). Administratively, Burayu city is found in Oromia Special Zone Surrounding Finfine in Oromia National Regional State. It gets municipality reform in 2005 (Burayu City Profile 2017)

According to the rank given by Oromia National Regional State to all urban centers of the region; the city is the first grade city in the region starting from 2006 and has got its master plan in December, 2007. The Town has a total land mass of about 90.57 square kilometres and shared more than 15 kms of boundaries with Addis Ababa city administration. Astronomically, the town extends roughly from 9° 02′ to 9° 02′30″ N latitudes and 38° 03′30″ to 38° 41′30″ E longitudes. It is bounded by: Addis Ababa city administration in the East, Sebeta-Hawas district in the South and Sululta district in the North and Walmera district in the Western (Burayu City profile, 2017).

Currently the town is one of the "Leading Cities" and a fast growing in Oromia National Regional State and divided administratively into six kebeles namely, Laku kata, Burayu kata, Gefersa Burayu, Gefersa Guje, Melka Gefersa, and Gefersa Nono.

Based on the 2007 census, projected population of the town and estimation by town administration depend on population rapidly growing and rural urban migration, the population size of the town is estimated 280,000 in the year 2017 and population growth rate shows 15.5% annually (Burayu City profile, 2017).

The selection of Burayu city as a study area from the other major town of the country is due to the researcher's personal experience of severe drinking water scarcity and the prevailing serious problem of the town. In addition, this rapid industrialization, urbanization and population growth area of the town which leads to complexity to provide better service. Consequently, the need for providing better services for the urbanized community by the local government officials is crucial. Those situations need to be addressed, before the problem increases and the condition becomes go downhill.

3.3. Data Source and Gathering Tools

To achieve the objectives of the study, both primary and secondary data sources were used. In order to get relevant information concerning the existing local government service delivery issues in the study area the researcher used questionnaires, interviews, and personal observation as a primary source of data. The secondary data were collected from different published and unpublished documents such as journals, books, magazines, articles, websites, research findings, annual plan and reports, policy documents, different work manuals and other relevant documents to the research.

3.3.1. Questionnaires

Questionnaires were used to collect primary data related to the socioeconomic characteristics of the respondents, water supply and sanitation status (access and quality), accountability and responsibility of service delivery system, general perception of customers towards the service, level of consumer satisfaction for the service provided, technical and institutional issues were collected through semi- structured questionnaires.

3.3.2. Interview

Key informant interview was conducted with the persons of different responsibilities, knowledge and experience about the city's water coverage, the balance between demand and supply of water in the city, major challenges facing in the provision of the service. The key informants were purposively selected from different offices assuming that they have deep and relevant information regarding the topic of investigation.

3.3.3. Personal observation

Since the issue at hand is highly linked with the day to day life of the people, observation enabled the researcher to observe and discuss with the respondents on the issue. Besides, participatory observation also has the advantage of becoming part of the respondents and observes how and where the community fetch water and exercise sanitation.

3.4. Target Population

The target population of the study were the residents of Burayu city which lives in six kebeles. According to the 2007 census, projected population of the town and estimation by town administration depend on population rapidly growing and rural urban migration, the population size of the town is estimated 280,000 in the year 2017 and population growth rate shows 15.5% annually (Burayu City profile, 2017). On the other hand the city water supply and sewerage service enterprise estimated as the total population of the city to be 397, 360. The study units of the study were households. There are totally, 50, 000 households.

Table 2: Size of populations based on their kebele

Kebele	**Population By kebele**						Total size of population
	Gefesa Burau	Gefersa Guie	Melka Gefer[illegible]	Leku Kketa	Burayu Keta	Gefersa Nono	
Population number	87, 000	55, 000	36, 000	31, 000	37, 000	34, 000	280, 000
Household	15,536	9,821	6,429	5,536	6,607	6,071	50,000

Source: Burayu City Administration, (2018)

A survey can only be truly valuable when it is reliable and representative for the population. To determine the sample size, 5% margin of error was used. According to Gert (2013), using 5% margin of error, 383 samples are enough for the population of 100, 000. Based on this, from the 50, 000 population, 350 respondents were determined as a sample size of the study.

Table 3-Sampling method and sample households' selection from each kebele

No	List of Kebele	Total households per kebele	Sample households from each kebele	Method of selection
1	Gefersa Burayu	15,536	109	Systematic random sampling
2	Gefersa Guje	9,821	69	Systematic random sampling
3	Melka Gefersa	6,429	45	Systematic random sampling
4	Leku keta	5,536	39	Systematic random sampling
5	Keta Burayu	6,607	46	Systematic random sampling
6	Gefersa Nono	6,071	42	Systematic sampling
Total		50,000	350	

Source: Burayu city administration municipality office (2018)

Table 4-Sampling method for key informant Interviewees

No	Offices	Position	No. of selected key informants	Method of Section
1	Burayu City Water Supply and Sewerage Service Enterprise	planning head	1	Purposive
2	Burayu City Water Supply and Sewerage Service Enterprise	Head officer	1	Purposive
3	Burayu City Water Supply and Sewerage Service Enterprise	technical officer	1	Purposive
4	Burayu City Water Supply and Sewerage Service Enterprise	customer service management head	1	Purposive
Total			**4**	

Source: Burayu city administration municipality office (2018)

3.4. Sampling Methods

To select a fairly representative sample of households, the sample size was distributed proportionally to each of the six kebeles based on the number of households they have. After assigning a number to each house, each sample was selected by systematic random sampling. In case of absenteeism the next household was included in the study. In the case of interviewees, four key informants with a position of planning head, officer, technical officer, and customer service management head were selected purposively from the city water supply and sewerage service enterprise. As presented in the table below, 350 households were selected as a participant of the study by using systematic random sampling methods. Every interval of the next respondent are also calculated proportionally. Therefore, every 143th (for Gefersa Burayu, Melka Gefersa and Burayu Keta), 142nd (for Gefersa Guji, Leku Ketta) and 144th (for Gefersa Nono) household from the starting sample were participated in the study.

Table 5: sampling proportion of households by kebele

Kebele	**Samples By kebele**						Total number of samples
	Gefersa Burayu	Gefersa Guje	Melka Gefersa	Leku Keta	Burayu Keta	Gefersa Nono	
Sample	109	69	45	39	46	42	**350**
Interval	143	142	143	142	143	144	

3.5. Data Analysis Techniques

As stated above, the study analyzed both qualitative and quantitative data to give clear understanding about the problem. Therefore, the qualitative data collected using open ended questionnaires, interview, and personal observation were also analyze through description, narrating and interpreting the situation contextually so that the city's drinking water supply and sanitation service delivery situation were properly shown. Photographs were also used to describe the exusting situation of water and sanitation supply. Regarding the quantitative data, data were analyzed and presented using tables, frequency and percentages to give clear understanding of the issue quantitatively.

3.6. Ethical Consideration

The researcher was doing his best to address ethical consideration of confidentiality, privacy, and informed consent. The ethical approval and clearance was obtained from Addis Ababa University, Institutional Ethics Review Committee. Then at all levels, officials were contacted and permission was secured. All the study participants were informed about the purpose of the study and verbal consent of all study subjects were obtained before data collection. Participants also informed that they have full right to discontinue or refuse to participate in the study. To ensure confidentiality, the name of interviewee was not written on the questionnaire. A guaranty was also given to the selected local governmental service provider and service seekers that their names will not be revealed in the questionnaire and research report. Besides, the interview was made in a place where it was conducive to the study participants, in their compound. Each respondent was assured that the information provided by them was confidential and used only for the purpose of research. Moreover, there was no risk or harm that was anticipated from participation of the study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

This section uses data collected from questionnaire, interviews, documets etc, Regarding questionnaires, 350 were distributed and the response rate was 96% or 340 questionnaires were returned.

4.1. Profiles of Participants

As shown in table 6, majority of the respondents (218, 64%) are represented by male and the rest 36% are female.

Table 6: profile of study participants (n= 340)

		Frequency	Percent
Gender	Male	218	64
	Female	122	36
Age	Below 25	64	19
	25-34	93	27
	35-44	113	33
	45-54	51	15
	55 and above	19	6
What is your marital status?	Single	117	34
	Married	196	58
	Divorced	19	6
	Widowed	8	2
What is your educational Qualification?	Illiterate	45	13
	Elementary school completed	91	27
	Secondary school completed	91	27
	Technical school	33	10
	Diploma	26	8
	Degree	39	11
	Masters	12	3
	PhD and above	3	1

Source: survey data, 2018

Regarding their age, one third of the respondents were in the age range of 35-44 followed by respondents who are in the age range of 25-34 (27%), below 25 (19%) and 45-54 (15%) respectively. Around 58 percent of the respondents are married and 34% are single regarding their marital status of the sampled household. The proportion of respondents who completed elementary and secondary education covered 27% of the respondents each. The share of respondents who are illiterate, degree holders and technical school completed were 13, 11 and 10 percent respectively. Above 4% have masters' degree or above (table 7).

Table 7: family and related conditions (n= 340)

		Frequency	Percent
Monthly family income	Below 300 birr	54	16
	301-1500	76	22
	1501-3000	100	29
	3001-4000	31	9
	Above 4000	30	9
Housing condition	Own	136	40
	Rental	204	60
How many years do you have lived in Burayu city?	0-5 years	78	23
	6-10 years	91	27
	11-15 years	70	21
	16-20 years	46	14
	21 and above years	55	16
Working condition	Government employee	62	19
	NGO	52	15
	Private work	176	52
	No work	35	10
	Other	15	4
Purpose of the house	Residence	290	85
	Business	28	8
	Both business and residence	22	7

Source: survey data, 2018

With respect to monthly family income, less than one third of the respondents said that their family income is between 1501 and 3000 birr. Respondents whose family income are between 301 and 1500 cover 22% of the total participants followed by respondents who gain less than 300 (16%), 3001- 4000 (9%) and above 4000 birr (9%). Half of the respondents reported that they have lived for 10 and below years in Burayu city. Around 35% of the participants reported that they have lived for 11- 20 years. Only 16% have been living in Burayu city for 21 and above years. The house condition of the respondent households only 136 (40%) have their own house, the majority 204(60%) are rental. This implied that majority of the respondents are new comers for the city. That means the residents of the city has doubled in the last 10 years. This phenomenon aggrandizes the population of the city in a fast track.

Regarding the working condition of respondents, half of them (52%) are working their private work followed by government employee (19%), NGO (15%). Ten percent of them have no work and the rest 4% have other work type rather than mentioned above. Majority of the households (85%) uses the house for residential purpose, 8 percent for business purpose and the rest 7% uses for both residential and business purposes.

4.2. Status of water supply and sanitation in Burayu city

Safe drinking water is the birthright of all humankind (as much a birthright as clean air) (Rao, 2002), and hence access to clean water can be considered as one of the basic needs and rights of a human being. The status of water supply and sanitation were assessed in terms of its access, amount and quality.

4.2.1. Supply

According to the information obtained from city water supply and sewerage service enterprise. The current water supply coverage of the city reached 60%. The main source of water in the city is underground water. Underground water from five holes is tugged and put to a treatment plant and distributed to urban residents through a piped system. The information gathered through questionnaire revealed that only fifty percent of the participants are getting water through private tap connection regardless of its frequency. According to World Health Organization (WHO, 2006), only 16% of people in sub Saharan Africa had access to drinking water through a

household connection (an indoor tap or a tap in the yard). Compared to the sub Saharan Africa access of water, the access of Burayu city is higher.

The WHO/UNICEF JMP report of 2015 indicated that the improved water coverage in Ethiopia was found to be 93 and 49% in urban and rural areas, respectively. The country coverage of improved water source usage reached 57%. On the other hand, 30% of the total Ethiopian citizens rely on unimproved drinking water sources.

The average daily supply of water per household is 8 hours. The data obtained from interview shows that only two kebeles have a frequent daily water access. One third (33%) used water from public tap and the remaining got water from river (13%), holes (4%) and rain (0.5%).

According to the data obtained from the secondary sources, the total amount of water production per day is 687, 600 meter cube. From this, 123, 768 (18%) is wasted as leakage. Therefore, the total amount of water distributed to the customers is about 563, 832 (82% of the total production). The total household numbers of potable water customers of Burayu city are 32, 000 family. This may be because there are more than one family in one compound and most of the time one tap is provided for one compound. So, it is expected that more than 32,000 families have access to water from private tapes.

Table 8: Water production and distribution in Burayu city (n= 340)

	Meter cube	Percent
Total production per day	687, 600	100
Leakage	123, 768	18
Total distribution per day	563, 832	82
Number of household who have private tap	32, 000	

Source: Burayu City Water Supply and Sewarage Services Enterprise (2018)

Out of the total sampled households, 33% obtained water for less than 5 hours a day, 28% get water for 5-20 hours a day and only 7% have an access of water for 21-24 hours. Twenty percent of the respondents reported that they are getting once in two days and the rest 12% are getting

water in two weeks and above. In the two kebeles, the water may not be available for two weeks and even more than a month.

Majority of the respondents (84%) reported that there is high interruption of water supply in their village. Around 70% of the respondents labelled the difficulty to get water as “difficult” and very “difficult”, followed by medium (20%) and easy (10%).

With regard to water accessibility, distance and time travelled to fetch water are considered. To evaluate it, the respondents were asked about the time and distance they have travelled. Generally, 79% of the respondents have to travel less than 200 meter from their home to get water. The survey result revealed that only 21% of the respondents travelled more than 200 m to collect water from public tap. Some of them (19%) reported distances up to 10 m, 33% from 10 to 50 m, and 8% from 50 to 100 m while the remaining (19%) reported distances from 100 to 200 m from their residence. Similarly, about half of the respondents (48%) spent more than 30 min to collect drinking water, 13% of them < 5 min, the rest 39% spent from 5 to 30 min (Table 9). An estimate reveals that about 52% of Ethiopian population travelled half an hour or more to collect water every day (CSA, 2006). The percentage of respondents who travelled half and more to get water is less compared to thaverage.

To most communities of Africa, long distance travel to fetch water is common. Regarding the per capita water requirement, majority (67%) of the respondents reported that they use less than 20 L of water per capita per day which is less than the recommended standard. African Water Development Report (2006) estimated that to ensure the basic water needs of humans, 20 to 50 L of water free from harmful contaminants are needed every day.

According to Ministry of Water, Irrigation and Energy (MoWIE) (2011), basic access of water for urban dweller is 20 L per capita per day within 0.5 km service radius in universal access plan. On the other hand, as per WHO (2008), the basic access of water is 20 L per capita per day within 100 m to 1 km and the average time spent to collect water is 5 to 30 min. It implies that water accessibility standards are not well exercised in the town. Bartram and Howard (2003) underlined that adequate and reliable water supply is critical for coping with every day urban life. Poor access to potable water has negative impact on development.

Table 9: water supply (n= 340)

		Frequency	Percent
How long do you go to get water from your home? (in meter)	Up to 10	65	19
	10-50	112	33
	51-100	27	8
	101-200	65	19
	Above 200	71	21
How much time do you need to get water? (in minute)	Less than 5	44	13
	5-30	133	39
	Above 30	163	48
Is there other source of water?	Yes	139	41
	No	192	59
What are the sources?	Personal pipeline	170	50
	Bono (public tap)	110	33
	River	44	13
	Rain	2	0.5
	Holes	14	4
Is there a water supply interruption in your village?	Yes	284	84
	No	56	16
The level of challenge to get water	Very difficult	173	51
	Difficult	67	20
	Medium	67	20
	Easy	17	5
	Very easy	16	5
For how much time do you get water in a day?	Less than 5 hours	111	33
	5-10 hours	49	14
	11-20 hours	47	14
	21-24 hours	25	7
	Once in two days	68	20
	Once a week and two weeks	40	12

Source: survey data May, (2018)

Picture 2-Gefersa dam and main pipeline to Addis Ababa

Sourse- Field Observation, (2018)

As shown in figure 2, the Gefersa dam the main pipe line take water from Gefersa dam to Addis Ababa. But the city do not benefited from the dam.

The pictures presented under figure 2 shows that residents are fetching and traveling water from rivers and pools asides of the city. The water is not safe and clean. The towns' residences use donkey carts and yellow plastic jars 'Jerikans' to fetch water from long distances and some organizations and hotels also use lorries to meet their water demand from public taps.

Figure 3: Residents fetching water from river and un safe area

Source: Field Observation, (2018)

As depicted in figure 4, respondents are fetching water from public water tap (bono). Furthermore, the pictures show that a large number of yellow jerks are waiting their turn.

Figure 4: Residents fetching water from public tap (Bono)

Source: Field Observation, (2018)

Table 10: status of sanitation (n= 340)

		Frequency	Percent
Toilet in compound	Yes	310	91
	No	30	9
Common toilet	Yes	34	10
	No	306	90
Bathroom in the compound	Yes	137	40
	No	203	60

Regarding the sanitation service of the study area, majority (91%) of the respondents have a private toilet in their compound. Respondents who have a common toilet covered 10% of the respondents. Only 40% of them have a bathroom in their compound.

As shown in figure5, liquid wastes are discharged in open space. In the some way, waste water from washing ditch, bathing, sometimes wastes from latrines are discharged into pools and in open space. Similarly, almost all drainage system of Ambo town is open channel except some of them are closed channel along the main road. All of the draining systems are found along the roads. Most of the drainage systems were blocked by soil and sedimentation caused by garbage's. The majority of drainage systems is very old and is not timely maintained for proper functioning. As a result, rain water could not be accommodated by drainage.

Figure 5: Figure showing ways of solid waste disposal

Source: own field observation, (2018)

Figure 6: Liquid waste in the city

Source: Field Observation, (2018)

4.2.2. Water quality

As shown in the above table, 74% of the respondents reported that they do not think that the quality of water and sanitation supplied by the city government is good, only 26% replied as good. Regarding the quality of water, 58% of them said that the water supplied by the city government is clean, and 42% of them reported that it lacks clarity. Moreover, only 34% are satisfied with the quality of the current water supply while the rest (66%) are dissatisfied.

Table 11: quality of water and sanitation service provided by the city

		Frequency	Percent
Do you think that the quality of water and sanitation supplied by the city government is good?	Yes	90	26
	No	250	74
What seems the quality of water provided by the city?	Clean	198	58
	Not clean	142	42
Are you satisfied with the quality of the current water supply?	Yes	115	34
	No	225	66

Source: survey data, (2018)

In respect to the information provision about water distribution, cost, and quality by the water supply office, 78% of the respondents rated as poor and only 7% labeled it high. More than half (58%) of them reported that there is an information provision system but it is not adequately functional. Similarly 74% of them reported that the authority's commitment to fulfil the need of the customers is poor. Availability of Complaint resolution mechanism and its functionality is also poor (78%).

Nepotism (38%), Seeking gift and money for the services (32%) and inappropriate influence on customers (30%) were the major problems faced by customers when they come to the offices seeking services.

Table 12: accountability and responsibility

		Frequency	Percent
Information provision about water distribution, cost, and quality by the water supply office	Very poor	116	34
	Poor	149	44
	Moderate	51	15
	High	2	0.5
	Very high	22	6.5
The authority's commitment to fulfil the need of the customers	Very poor	115	34
	Poor	137	40
	Moderate	56	16.5
	High	12	3.5
	Very high	20	6
Availability of Complaint resolution mechanism and its functionality	Very poor	121	36
	Poor	143	42
	Moderate	48	14
	High	8	2
	Very high	20	6
Information provision system	Not at all	117	34
	Available but not enough	196	58
	Very good	28	8
Problems seen in the office	Nepotism	130	38
	Inappropriate influence on customers	102	30
	Seeking gift and money	107	32

Source: survey data May, (2018)

Regarding the service quality rendered by the water supply office, more than half (53%) of the respondents are not happy by the service. Only 19% of them are satisfied by the service. The rest 28% replied as they are moderate about their satisfaction. In respect to the availability of the employees at their bureau, 40% of the respondents reported that they are available half of the time, sometimes (38%), and always available (18%). More than one third (35%) of the respondents said that they have to stay for more than 1 day there to get services. Less than one hour (20%), 1-3 hours (18%), 1 day (13. %), and half a day (13.5%) are reported as the required awaiting time to get the service in the enterprise. In respect to the hospitality, 45% reported that

the hospitality status of the bureau is moderate followed by respondents who rated the hospitality as good (32%) and poor (23%).

Table 13: Service Quality

		Frequency	Percent
Satisfaction towards the service	I am very happy	24	7
	I am happy	41	12
	Moderate	94	28
	I am not happy	105	31
	I am not happy at all	75	22
Employees availability on their work	They are always available	62	18
	They are available half of their time	137	40
	Sometimes	129	38
	Never	12	4
Awaiting time	Less than 1 hour	68	20
	1-3 hours	61	18
	Half a day	46	13.5
	1 day	46	13.5
	More than 1 day	119	35
Hospitality	Very good	38	11
	Good	73	21
	Moderate	153	45
	Poor	46	14
	Very poor	30	9

Source: survey data, (2018)

4.3. Respondents perception about the water supply and sanitary service

Respondents were asked to evaluate the general water supply and sanitation service of Burayu city. Only 22% responded as good and very good. Half (52%) of them rated it as poor and very poor and the rest 16% said that it is moderate. Most countries give first priority to satisfaction of basic human needs for water. The service deficiencies primarily affect the poorest segments of the population in developing countries. This survey result showed that out of the total respondents, about 72% are dissatisfied with the current service due to frequent interruption and

unfair distribution of water whereas the rest reported that they are satisfied with the services. The interruption is attributed to malfunction of submersible pumps and power supply interruption.

While expanding improved water source schemes is generally essential, it is equally important to ensure that the schemes have increased users' satisfaction with water quality and availability for everyday use (UNICEF, 2010). The majority of the sample households replied that the water distribution is unfair and variable. As reported by respondents, some area may be served water frequently while other areas stay without water service at all. Consequently, the town water supply service enterprise should devise a mechanism so as to minimize the inequitable distribution of water among the residents of the town.

Table 14: Respondents perception towards water supply and sanitation service

		Frequency	Percent
How do you evaluate the general water supply and sanitary service of Burayu city?	Very good	20	6
	Good	56	16
	Moderate	55	16
	Poor	126	37
	Very poor	83	25
Are you satisfied with the city water supply and sanitation service?	Yes	95	28
	No	245	72
Are you satisfied with the cost of water supply and sanitation service of the city?	Yes	82	24
	No	258	76

Source: survey data, (2018)

Eighty three percent of the respondents reported that, there were family members who were infected by water and sanitation related problems in the last one year. Moreover, 81% of them said that there were health problems related to water. Some of the respondents also reported that due to water shortage they incur additional costs and face health problems like diarrhea as they are forced to use alternative sources of water of poor quality. Hunter et al. (2010) reported that a poor water supply impacts human health by causing diarrheal and non-diarrheal disease, limiting productivity and the maintenance of personal hygiene.

Table 15: Consequences of shortage and low quality of water

		Frequency	Percent
In the last one year, was there any family member who were infected by water and sanitation related problems?	Yes	58	17
	No	282	83
In the last one year, did any of your family members faced a water related disease?	Yes	66	19
	No	274	81

Source: survey data, (2018)

4.4. Results of Interview Data

Four key informants with a position of planning head, officer, technical officer, and customer service management head were interviewed from the city water supply and sewerage service enterprise.

The information obtained from interview shows that because of the increasing number of population from day to day, the effort of the enterprise to provide water that can satisfy the need of the population becomes difficult. The gap between the demand and the supply of the water is high. Water supply systems in urban areas are often unable to meet existing demands and are not available to everyone, rather some consumers take disproportionate amounts of water and the poor is the first victim of the problem (Bereket, 2006). As reported by the key informant, there is chronic water shortage in the city and as a result they complement their water need from ground and river water. The piped water coverage increment is very small as compared to the population growth. Some of the challenges mentioned by the bureau includes; financial constraint, the increasing number of the population, shortage of electricity, the nature of the topography and the inadequate supply of water. It was also mentioned that long age of the system, lack of institutional capacity, favoritism and nepotism are the internal challenges for the low coverage of the water supply.

In order to solve the problem, searching financial support, communicating with Addis Ababa city to seek support, improving the capacity of the city are the identified mechanisms. As remedial mechanisms, the city administration has planned to boost the water supply of the city by considering different alternatives. The first one is digging additional holes to increase the amount

of underground water supplying to the community. Accordingly, two holes, financed by the woreda, are on the process. Additionaly, the city administration is negotiating with Addis Ababa city administration so as to support the effort to increase the water supply of the city. In order to solve the problem related to electricity, the city administration is planning to search financial support that will be employed to buy power generators.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

This study has attempted to investigate the delivery of water and sanitation in Burayu city. Particularly, it intended in assessing the status, coverage, accessibility, factors affecting water supply and sanitation service provision and impacts of water supply and sanitation in accessibility on the urban dwellers. The water demand of the town is increasing due to urbanization and population growth. The survey revealed that the town water supply cannot fulfill consumer demand for water. The average per capita consumption was found to be less than 20 L/person/day which is less than the recommended standard. In line with this, according to the survey results, the most frequent complaints by water customers are regular interruption of water supply and unfair water distribution.

Regarding to water accessibility, the Oromia National State proclamation number 78/2004 article (5) sub article (1) stated that, the enterprise provides potable and adequate water supply to the urban dwellers in and around the town and ensures that the water supplied is to the standard of the WHO. However, the study result indicated that, the average water consumption of the sample households is 9.5 liters per person per day, which is about less than half of the 20 l/p/d what is recommended by the WHO.

It is also concluded that financial constraint, the increasing number of the population, shortage of electricity, the nature of the topography and the inadequate supply of water. It was also mentioned that long age of the system, lack of institutional capacity, favoritism and nepotism are the internal challenges for the low coverage of the water supply.

In order to solve the problem, searching financial support, communicating with Addis Ababa city to seek support, improving the capacity of the city are the identified mechanisms.

On the other hand, the sanitation of Burayu city has been deteriorating from time to time, which is caused by inadequacy of latrine facilities and its management, in adequate water supply, high water interruption, lack of sewerage system, inadequate cleaning and poor abattoir services.

Sanitation of Burayu city is very poor as there is no sewerage system, inadequate communal latrines in slum areas. Liquid wastes were simply dumped directly into rivers, ditch and in open spaces and this act pollutes the rivers and environment, which causes high negative health and socioeconomic impacts on the community.

Regarding the service delivery, nepotism, faulty governance lack of accountability, transparency, integrity, corruption and incredible reporting mechanism were found to be the manifestation of the ill administration of the water supply and sanitation sector. In line with this, the study result also indicated 76% of the study households were not satisfied with the existing water supply and sanitation services. Majority of the respondants (70%) reported that nepotism, seeking gifts and money for service were the major problem of customers.

Recommendations

Based on the findings of the study, the following recommendations are forwarded.

1. The study result indicated that, the current status of water supply and sanitation accessibility in Burayu city is very low in any standards. Hence, of all others BCWSSSE should increase water production and expand the distribution line to bring the system near to the residences.
2. The enterprise has to manage the wastages of scarce water due to old system by replacing with new and cost effective technology. On the other hand, article (20) sub article (3) of this proclamation stated that, the regional government grants the necessary supports for the establishment and expansion of water services by accessing the capacity of the enterprise. Therefore, the regional government should provide the necessary supports (financial, materials and technical) to the enterprise to serve the people and alleviate the present and long term water crises in the town.
3. Sanitation of Burayu city is very poor as there is no sewerage system, inadequate communal latrines in slum areas. Liquid wastes were simply dumped directly into rivers, ditch and in open spaces and this act pollutes the rivers and environment, which causes high negative health and socioeconomic impacts on the community. Therefore, the city administration should establish a sewerage and solid waste management system.

4. The study also revealed that the transparency and accountability of the BCWSSSE is very poor. Nepotism and mal administration were also the prominent challenges that hinder the service delivery. Setting systems and structures that can reduce incidences of nepotism and ensure efficient delivery of services, use modern information communication technologies, awareness creation, support the participation of stakeholders, creation of strong cooperation between governmental and non-governmental actors, developing institutional anti corruption strategy are highly recommended to fight against water supply and sanitation sector corruption to fulfill the demand and sapply of service seker.
5. Water and Sanitation infrastructure expansion activities that match with the town development must be carried out to meet the water requirements of the town. Every concerned stakeholders government and non government institutions, Burayu city Water supply and sewerage service enterprise, Electric and Power Authority should discharge their respective responsibility properly.
6. The City administration should devise a mechanism so as to minimize the inequitable distribution of water among the residents of the town.
7. Even though one of the water supply sources of Addis Ababa city is Gefersa dam, which is found in the surrounding of Burayu city, the city is not benefiting from the dam at all. Therefore, the city of Addis Ababa should participate in providing of water for Burayu city in form of compensation as a response to its benefit from the city. Additional study should be conducted to find out other possible causes for water shortage so as to act accordingly.

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Appendix

Appendix 1-English Questionnaire

Questionnaires to be filled by sample Households

This questionnaire is prepared as an instrument to conduct an academic research for the fulfillment of Masters of Art Degree (MA) by Girma Leta in Addis Ababa University College of development studies center for regional and local development studies. The general objective of the study is to assess drinking water supply and sanitation service delivery in Burayu City. Therefore the information you will provide is very important for the research hence you are kindly requested to forward your views and experiences as carefully as possible each of your answer has great contribution for the completeness of the research paper. Furthermore, the information you give will be used for only the academic research. The information that you give me will be kept confidential.

Thanks in advance for your cooperation.

Girma Leta

General Directions

1. Please answer the questions by circle your best choice from the provided alternatives
2. Give your comments on the space provided for open ended questions
3. There is no need to write your name and address

I-Personal profile of the respondent

1. Questionnaire ID _____
2. Sex A- Male B- Female
3. Which of the following age category describes you?

   A-Under B-25 C- 25-34 D- 35-44 E- 45-54 F- 55 & above

4. Marital status A-Single B- Married C- Divorced
5. How many years do you have lived in Burayu city?

   A- 0-5 B- 6-10 C- 11-15 D- 16-20 E- 21 & above

6. What is your educational Qualification?

A-Grade 0-8 B- High school C- Technical school D- graduate College diploma E- Degree F- Master's Degree G- PHD

7. Family size_____

8. What is your monthly income?

A-Less than 300 Birr B- 301 – 600 Birr C- 601 – 1000 Birr D- 1001 – 1500 Birr E-1501 – 2000 Birr F- 2001 – 3000 Birr G- 3001 – 4000 Birr H-4001 and Above

9. House ownership_____

10. Status of the house

A-Residence only B- Hotel/restaurant/café/grocery C- Both residence and business

11. Occupational Status

A- Public Employee B- Private Employee C- Self-employed D-Unemployed

E-Others

II- water supply and sanitation status

A. Access

1. What is your average daily water consumption? _____
2. Do you have private toilet at your home? A- Yes B- No
3. Is there any public toilet in your village? A- Yes B- No
4. Do you have bath room in your home? A- Yes B- No
5. How and do you dispose liquid waste? _____
6. Where do you dispose liquid waste?
7. What round trip distance and time you spend to fetch water? _____
8. How much of time you spend to fetch water? _____
9. Is there any other water source in your village except the one provided by the municipality?

   A-Yes B- No
10. Is there any water supply interruption in your village? A- Yes B- No
11. What is your source of water?_____

    A- Private tap B- Yard tap C- Public tap D- River E- Rain F- Spring G- Boreholes

12. For how many hours do you get water supply service delivery per day in Burayu City?

A- Less than 5 hours B- 5-10 hours C- 11- 15 hours D- 16-20 hours E- 21-24 hours

13. Degree of difficulty to get water from the source

A- Very difficult B- Difficult C- Moderate D- Easy E- Very easy

14. How do you evaluate the competence of service providers?

A-Very high B- High C- Moderate D- low E- very low

B. Quality

1. Do you think that, the source of water and sanitation facilities you are currently using good quality? A- Yes B- No
2. How do you evaluate the purity of the water provided to you by the city municipality?

   A- Pure B- not pure
3. Are you satisfied with the current standards/quality of service delivery?

   A- Yes B- No

   If no, why not? _____

III- Questions about accountability and responsibility

1. How do you evaluate the way of information distribution about the problems, cost and quality of drinking water supply and sanitation services?

   A-Very poor B- poor C- Fair D- High E- very high
2. Responsiveness of the water supply agencies to customers' demand

   A-Very high B- High C- Moderate D- low E- very low
3. Availability and functionality of complaint handling and voicing mechanisms

   A-Very high B- High C- Moderate D- Low E- very low
4. The availability of information to clients

   A- There is not at all B- Available but not adequate C- Available and adequate
5. What are the other disparities affected while accessing these services?

A-Favouritism and Nepotism

B-Influence

C-Kick backs

D-Improper Gifts and Gestures

E- Others (point out)_____

IV. Service Delivery status

1. How do you feel about the water and sanitation service delivery of the city?

A-Very happy B- Happy C- Neutral D- Unhappy E- very unhappy

2. What is your experience about the availability of service providers in the office hours?

A-They are available in the office all the times during working hours

B-They are in the office 50% of working hours

C- They are in the office only sometimes

D-They are not in the office all the time

3. How long do you wait before getting specific service from staffs of Burayu city administration?

A-Less than 1 hour B- 1-3 hours C- half a day D-one full day E- more than one day

4. The staff courtesy (Politeness, respect and consideration) toward customers is:

A-Very good B- Good C- Neither neither good nor poor D- Very Poor E- poor

V. General perception of customers towards the service

1. How do you the general water supply and sanitation service delivery?

A- Very Good B- Good C- Fair D- Poor E-very poor

2. Do you satisfied with the water supply and sanitation service provided by the city administration?

A- Yes B- No

3. Do you satisfied with the price of water and sanitation service delivery?

A-Yes B- No

VI. Consequences of inadequate water supply and sanitation

1. Is there any water and sanitation related problems on your health and life in the last one year?

   A-Yes B- No

   If yes describe the problems?_____

2. Did you and your family members exposed to water borne diseases in the last one year?

   A- Yes B- No

3. Please mention if there are any problem your family faced because of lack of water and sanitation supply and quality._____
   _____
   _____
   _____

4. In your opinion, what are the major challenges that are related with the challenges which affect the better drinking water supply and sanitation service delivery of the city officials?

   1._____

   2. _____

   3. _____

4. Do you have any suggestions to how the city officials can overcome its challenges?

   1._____

   2._____

   3._____

Thank You

Appendices 2-Interviw Question for officials

1. Semi-structured Interview Questionnaire for officials

Name:_____Position: _____

1. What is your role/function at the municipality Council?

2. Do you think the municipality council has enough and clearly defines powers and functions to undertake the responsibility? Yes / No (please give reasons for your answer)

4. How do you describe competence of staffs (education, experience, ability and knowledge) at the municipality council who are responsible for delivering drinking water supply and sanitation services?

5. Do you think council has sufficient physical resources in the discharge of responsibility? Yes / No (please give reasons for your answer)

- Budget/Money/
- Vehicles
- Communication Facilities (Telephone, Internet and Fax)
- Computers

6. How about private sectors are involving in delivering drinking water supply and sanitation services?

7. In your opinion, what are the major challenges that are related with the challenges which affect the better drinking water supply and sanitation service delivery of council?

_____
_____
_____
_____

8. Do you have any suggestions to how the city officials can overcome its challenges?

_____
_____
_____

Appendix 3-Afaan Oromo Questionnaire

Bargaaffii Qorannoo Abbootii Warraatiif Qophaa'e

Qorannoon kun kan qophaa'e ani Girmaa Lataa barataa yunivarsiitii Finfinnee koollajjii qu'annoowwan Misooma Biyyaatti giddu gala qu'annoo Misooma Kutaalee Biyyaa fi Naannoo. itti guutinsa barnoota digirii 2^{ffaa} (MA) tiif qu'annoo akkaadaamii gaggeessuuf .Qorannichi kan irratti xiyyeeffatu mata duree "Sakatta'insa kenniinsa tajaajila dhiyeessii bishaan dhugaatii fi qulqullinaa magaalaa Burayyuu ti". Kaayyoo gooroon qorannoo kanaa "kenna tajaajila dhiyeessii bishaan dhugaatii fi qulqullinaa magaala Buraayyuu sakatta'uudhaafi ". Kanaafuu,faayidaan deebii dhugaa isin bargaaffii kanarratti kennitan argannoo qorannoon mul'suuf baay'ee olaanaa dha.Ragaan isin qorannoo kanarratti kennitan icciitiin isaa kan eeggamee dha.Deebiin isin gaaffilee dhiyaataniif kennitan bu'aa qorannoo kanaa qofaaf kan oolu ta'a.

Hirmaannaa fi Deeggarsa Qorannoo kanaaf Taasiftaniif Isinan Galateeffadha.

Qajeelfama Deebbiin Ittiin Kennamu

- Gaaffilee filannoodhaan dhiyaatan qubee deebii sirriitti maruun deebisaa
- Kanneen iddoo duwwaan dhiifameef deebii sirrii fi ifa ta'e barreessudhaan deebisaa
- Maqaa fi teessoo barreessuun hin barbaachisu.

Kutaa 1^{ffaa}-Odeeffannoo dhuunfaa hirmaattotaa /deebistootaa/

1. Lakkoofsa addaa bargaaffii _____

2. Saala: A. dhiira B. Dhalaa

3. Umriin si ibsu kami?

A.25 gadi B.25-34 C. 35-44 D. 45-54 E. 55 fi ol

4. Haala fuudhaa: A.kan hin fuune B. kan fuudhe C. kan hiike D.kan jalaa duute

5. Magaala Burayyuu keessa waggaa meeqa jiraattan?

A. 0-5 B. 6-10 C.11-15 D. 16-20 E.21 fi ol

6. Sadarkaa Barumsaa keessan kan ibsu kami?

A. Hin baranne B.Sadarkaa 1^{ffaa} xumure C.Sadarkaa 2^{ffaa} xumure D.Teekiniikaa fi Ogummaa E.Dippiloomaa koollajjii F.Digirii G.Digirii 2^{ffaa} H.Digrii 3^{ffaa} .

7. Baayina maatii _____

8. Galiin ji'atti argattan qarshii meeqa?

A.Qar.300 gadi B. Qar.301 – 600 C. Qar.601 – 1000 D. Qar.1001 – 1500
E.Qar.1501 – 2000 F.Qar.2001 – 3000 G. Qar.3001 – 4000 H. 4001 fi ol

9-Abbaa manummaa (kan dhuunfaa ,kiraa…):_____

10. Haala tajaajila manaa :

A.Itti jiraachuu qofaaf B.Daldalaa (Hoteela,Reestoraantii,Kaafteeriyaa,Giroosarii)

C.Jireenyaa fi daldala

11. Haala hojii:

A.Hojjataa Mootummaa B. Mit- mootummaa C. Hojii dhuunfaa D.Hoji dhabaa

E.kan biroo

Kutaa 2^{ffaa}- Haala dhiyeessa Bishaanii fi Qulqullinaa Ilaalchisee

A.Dhiyeessii/Qaqqabummaa/

1. Giddu galeessaan guyyaatti hangi itti fayyadama bishaan maatii keessanii liitirii meeqa? _____

2. Mana keessan keessa maatiin kan itti fayyadamu mana fincaanii dhuunfaa qabduu?

A.Eeyyen qabna B.Lakkii hin qabnu

3. Mandara keessan keessa manni fincaanii uummataa jiraa?

A.Eeyyen B. Lakkii

4. Mana keessan manni dhiqannaa (shaaworii) dhuunfaa qabduu?

A.Eeyyen B.Lakkii

5. Balfa Dhangala'oo akkamitti gadi naqxu? _____

6. Balfa dhangala'oo eessattii gadi naqxu?_____

7. Bishaan waraabuuf mana keessanirraa fageenyaa ammamii deemuu isin gaafata? _____

8. Bishaan dhugaatii waraabuuf mana keessanirraa sa'aatii ammamii sinitti fudhata?_____

9. Bishaan bulchiinsa magaalatiin galeen alatti maddi bishaanii mandara keessan keessa jiraa?

A.Eeyyen B.Lakkii

10. Mandara keessanitti bishaan ni ciccitaa/ni badaa/?

A. Eeyyen B. Lakkii

11. Bishaan dhugaatii eessaa argattu?

A.Mana ofiitii B. Boonoo waliinii C. Lagaa D. Bokkaa E.Burqaa F. Boolla G. Kan biro

12. Guyyaatti sa'aatii meeqaaf tajaajila dhiyeessii bishaan dhugaatii argattuu?

A.Sa'aatii 5 gadi B. Sa'aatii 5-10 C. Sa'aatii 11- 15

D.Sa'aatii 16-20 E. Sa'aatii 21-24 F. Guyyaa 2 tti yeroo tokko

13. Bishaan argachuuf rakkoon jiru ammami?

A.Baay'ee ulfaataa B. Ulfaataa C. Giddu galeessa D. Salphaa

E.Baay'ee salphaa

14. Beekumsa fi Dandeettii hojjattoota waajjira bishaanii bulchiinsa magaalaa Buraayyuu akkamiin ilaaltu?

A.Baay'ee olaana B.Olaanaa C.Giddu galeessa D.Gad-aanaa E.Baay'ee gad-aanaa

B-Qulqullina Ilaalchisee

1. Yeroo ammaa kana dhiyeessiin tajaajila bishaanii fi qulqullinaa magaalaa Buraayyuu gaarii dha jettanii yaadduu? A. Eeyye B. Lakkii

2. Qulqullinni bishaan dhugaatii magaalli isiniif dhiyeessaa jiru maal fakkaata?

A. Qulqulluu dha B.Qulqulluu miti

3. Qulqullina bishaan dhugaatii amma siniif dhiyaachaa jirutti quuftaniittuu ?

A. Eeyyee B. Lakkii

Kutaa 3ffaa- Gaaffilee Abbummaa fi Itti Gaafatamummaa Ilaallatan

1. Haala aanga'oonni waajjira bishaan magaalaa rakkoolee dhiyeessaa bishaanii,qulqullinaa fi gatii ilaalchisee hawaasaaf Odeeffannoo ittiin kennan akkamitti ilaaltu?

A.Baay'ee gadi aanaa B. Gadi aanaa C. Ga'aa D. Olaanaa
E.Baay'ee olaanaa

2. Gaggeessitootni waajjirichaa fedhii maamilootaa guutudhaaf haalli itti deebii kennan maal fakkaata?

A. Baay'ee gadi aanaa B. Gadi aanaa C. Ga'aa D. Olaanaa
E.Baay'ee olaanaa

3. Sirni komii maammiltootaa ittiin hiikan diriiruu fi karaa guutuu ta'een hojiitti hiikkachuu isaa akkamiin madaaltu?

A.Baay'ee gadi aanaa B. Gadi aanaa C. Ga'aa D. Olaanaa

E. Baay'ee olaanaa

4. Sirna dhiyeessa odeeffannoo waajjirichi maamiloota tajaajila barbaadaniif diriirse akkamiin ilaaltu?

A.Tasumaa hin jiru B. Jira garuu ga'aa miti C. Baay'ee kan jajamuu dha

5. Rakkoolee armaan gaditti ibsaman keessaa tajaajila waajjirichi kennu keessatti kan mul'atan kami?

A.Kiraa sassaabdummaa

B.Maamiltootarratti dhiibbaa hin malle uumuu

C.Tajaajila kennaniif kennaa addaa fi maallaqa gaafachuu

D.Kan biroo yoo jiraate haa ibsamu _____

Kutaa 4ffaa-Haala Kenna Tajaajilaa Ilaalchisee

1. Haala kenna tajaajila dhiyeessii bishaan dhugaatii fi qulqullina magaalattii ammam gammadaa dha?

A.Baay'een itti gamada B. gamade C. giddu galeessa

D.Itti hin gammadne E. Baay'ee itti hin gammadne

2. Halli hojjattootni waajjira bishaan magaalaa yeroo hojii waajjiratti argamuu isaanii maal fakkaata?

A.Yeroo hojii hunda waajjiratti argamu

B.Sa'aatii hojii walakkaa %50 waajjiratti argamu

C.Darbee darbee waajjiratti argamu

D.Yeroo hunda waajjiratti hin argaman

3. Dhimma dhufteef raawwachiifachuudhaaf waajjira bishaanii dhuftee sa'aatii ammamii eegda?

A.Sa'aatii 1 gadi B. Sa'aatii 1-3 C. Guyyaa walakkaa

D. Guyyaa guutuu E. Guyyaa 1 ol

4. Kabajni kennitootni tajaajilaa (hojjattootni waajjiraa) maamilaaf qaban maal fakkaata?

A.Baay'ee gaarii B. Gaarii C. Omaan jedhu

D. Yaraa E. Baay'ee yaraa

Kutaa 5^{ffaa}-Ilaalcha deebistootni tajaajila dhiyeessii bishaanitii fi qulqullinaa irratti qaban

1. Akka walii galaatti haala tajaajila dhiyeessii bishaan dhugaatii fi qulqulinaa magaalaa Buraayyuu akkamittiin ilaaltu?

A. Baay'ee gaarii B. gaarii C. ga'aa D. gad-aanaa

E. baay'ee gad-aanaa

2. Tajaajila dhiyeessii bishaan dhugaatii fi qulqullinaa kennamutti quuftaniittu/gammaddaniittuu/? A.Eeyyen B. Lakkii

Yoo lakkii jette maaliifi?_____

3. Gatii tajaajila bishaan dhugaatii fi qulqullina magaalaa kanaatti Itti quufinsi isinitti dhaga'amaa? A.Eeyyen B. Lakkii

Kutaa 6^{ffaa}- Rakkoolee kenna tajaajila bishaan dhugaatii fi qulqullinaa ga'aa ta'uu dhabuun dhufan Ilaalchisee

1. Waggaa kana keessatti dhabiinsa qulqullina bishaanii fi qulqullinaa faana wal qabatee rakkoon fayyaa fi lubbuu maatii keessan irra ga'e jiraa?

A. Eeyye B. Lakkii

2. Waggaa kana keessa sinii fi miseensa maatii keessanii keessaa dhibee bishaaniin wal qabateen namni saaxilame jiraa?

A. Eeyye B. Lakkii

3. Hanqina dhiyeessii bishaan dhugaatii fi rakkoo qulqullinaan wal qabatee miidhaan isinii fi maatii keessan irra ga'e yoo jiraate ibsaa

_____
_____
_____

4. Akkaataa hubannoo keessaniitti waantootni dhiyeessii bishaan dhugaatii fi qulqullinaa akka hin fooyyofneef gufuu ta'aniiru rakkooleen jettan maal fa'i?

1._____

2._____

3._____

5. Rakkoolee armaan olitti ibsaman kana furuuf qabxilee furmaata ni ta'u jettan tarreessaa

1._____

2._____

3._____

Yeroo keessan aarsaa gootanii waan nuu guuttaniif galatoomaa!!!!

Appendix 4-Af Gaaffii Gaggeessitootaaf

I-Af-Gaaffii caaseffama gartokkee gaggeessitootaaf Qophaa'e

Maqaa _____Aangoo: _____

1. Ga'een isin mana qopheessaa keessatti qabdan maali?

2.Manni qopheessaa itti gaafatamummaa isaa fudhachuuf aangoo fi ga'ee seeraan ibsame qaba jettanii yaadduu? Eeyye/Lakkii (Deebii keessaniif sababa kennaa)

_____

3-Uummatni magaalaa Buraayyuu tajaajila bishaan dhugaatii manni qopheessaa kennuufitti quufeera jettanii yaadduu?Eeyye/Lakkii (Deebii keessaniif sababa kennaa) yoo lakkii ta'e rakkoon jiru maali?

4-Manni qopheessichaa itti gaafatamummaa isaa ba'uuf humna namaa ga'aa qaba jettanii yaadduu?

5. Dandeetii fi ga'umsi (Sadarkaa Barumsa fi muuxannoo) miseensi koree magaalichaa itti gaafatamummaa isaa ba'uuf qabu akkamitti ibsamaa?

6. Koreen magaalichaa itti gaafatamummaa isaa ba'uuf qabeenya dhaabbataa ga'aa qaba jettanii yaadduu? Eeyye/Lakkii (Deebii keessaniif sababa kennaa).

- Maallaqa
- Konkolaataa
- Meeshaalee Quunnamtii (bilbila,Intarneetii fi Faksii)
- Kompiitaroota.

7. Akka magaalichaatti haalli dhaabbileen dhuunfaa dhiyeessa tajaajila bishaan dhugaatii fi qulqullinaa keessatti qooda fudhatan akkami/Maal fakkaata?

8. Akka yaada keessaniitti rakkoolee gurguddoon dhiyeessii tajaajila bishaan dhugaatii fi qulqullinaa fooyya'aa kennuurratti hooggansa magaalichaa danqan maal fa'i jettanii yaaddu?

_____

9. Akkaataa hooggansi magaalichaa rakkoolee isaanii ittiin keessa ba'uu danda'an irratti yaada yoo qabaattan ibsaa/tarreessaa.

_____

_____

Yeroo keessan aarsaa gootanii **waan yaada nuu kennitaniif galatoomaa!!**

Appendix 5: Amharic questionnaire

የጽሑፍ መጠይቅ

ይህ መጠይቅ የተዘጋጀው እኔ ግርማ ለታ በአዲስ አበባ ዩኒቨርሲቲ በሃገር ልማት ጥናቶች ኮሌጅ የክፍለ ሀገራዊና አካባቢያዊ ልማት ማዕከል ለማደርገው የሁለተኛ ዲግሪ ትምህርት ማሟያ ጥናት ይሆን ዘንድ ነው፡፡ በዚህም ምክንያት በአሁኑ ሰዓት የመመረቂያ ፅሁፌን በማዘጋጀት ላይ እገኛለሁ፡፡ የጥናቱ ጥቅል ዓላማ በቡራዩ ከተማ የሚገኘውን የመጠጥ ውሃ አቅርቦት እና የንፅህና አገልግሎት ሁኔታ መፈተሽ ነው፡፡ እርስዎም በዚህ ጥናት እንዲሳተፉ ሲመረጡ የሚሰጡት ትክክለኛውን መረጃ ለጥናቱ ውጤታማነት በጣም አስፈላጊ መሆኑን በመገንዘብ መጠይቁን በጥንቃቄ እንዲሞሉ በአክብሮት እጠይቃለሁ፡፡ ተሳትፎዎ በእርስዎ በጎ ፈቃደኝነት ላይ የተመሰረተ ነው፡፡ በመጨረሻም የሚሰጡት መረጃ ሚስጥራዊነቱ የተጠበቀና ለዚህ ጥናት ዓላማ ብቻ እንደሚውል አረጋግጣለሁ፡፡ የማንኛውም መልስ ሰጪ ማንነት በማንኛውም መልኩ የማይታተምና የማይሰራጭ ይሆናል፡፡ ሁሉም መረጃዎች ለትምህርታዊ ዓላማ ብቻ ይውላሉ፡፡ ጊዜዎን ሰውተው ስለሚያደርጉልኝ ትብብር በቅድሚያ አመሰግናለሁ፡፡

ማሳሰቢያ፡-

- በመጠይቁ ላይ ስም መፃፍ አያስፈልግም፡፡
- ትክክለኛ መልስ የያዘዉን ፍደል በማክበብ ይመልሱ፡፡
- ባዶ ቦታዎችን ትክክለኛ መልስ በመጻፍ ይመልሱ፡፡

ክፍል 1፡ የግል መረጃ

1. የመጠይቅ መለያ ቁጥር _____
2. ፆታ: ሀ. ወንድ ለ. ሴት
3. እድሜ: ሀ. ከ25 በታች ለ. 25-34 ሐ. 35-44 መ. 45- 54 ሠ. 55 እና በላይ
4. የጋብቻ ሁኔታ፡ ሀ. ያገባ ለ. ያለገባ ሐ. የተፋታ መ. የሞተበት
5. በቡራዩ ከተማ ለስንት ዓመታት ኖረዋል?_____

ሀ. ከ0-5 ለ. ከ6-10 ሐ. ከ11-15 መ. ከ16-20 ሠ. 21 ና በላይ

6. የትምህርት ደረጃዎ ምን ይመስላል? ሀ. አልተማርኩም ለ. የመጀመሪያ ደረጃ አጠናቅቄያለሁ ሐ. ሁለተኛ ደረጃ አጠናቅቄያለሁ መ. የቴክኒክና ሙያ ት/ት ሠ. ኮሌጅ ዲፕሎማ ረ. ዲግሪ ሰ. ማስተርስ ዲግሪ ሸ. ፒኤችዲ
7. የቤተሰብዎ ብዛት_____
8. ወርሃዊ ገቢ፡ ሀ.ከ300 ብር በታች ለ.ከ301-600 ብር ሐ.ከ 601-1000 ብር መ.ከ 1001-1500 ብር ሠ.ከ1501-2000ብር ረ.ከ2001-3000 ብር ሰ.ከ3001-4000 ብር ሰ.ከ4001 ና በላይ
9. የቤት ባለቤትነት (ኪራይ፣ የራስ ቤት...) _____
10. የኑሮ ሁኔታ ሀ. መኖሪያ ለ. ንግድ (ሆቴል፣ ሬስቶራንት፣ ካፍቴሪያ፣ ገሮሰሪ) ሐ. ለመኖሪያና ለንግድ
11. የስራ ሁኔታ ሀ. የመንግስት ሰራተኛ ለ. መያድ (ቅጥር) ሐ. የግል ስራ መ. ስራ የለኝም ሠ. ሌላ

ክፍል 2፡ የቡራዩ ከተማ የውሃና የንጽህና አቅርቦት ሁኔታ

ሀ. አቅርቦት/ተደራሽነት

1. የቤተሰብዎ አማካይ የቀን የውሃ ፍጆታ በሊትር ምን ያህል ነው?
_____
2. በቤትዎ ውስጥ ቤተሰቡ የሚጠቀምበት የግል መጸዳጃ ቤት አለ?

ሀ. አለ ለ. የለም

3. በሚኖሩበት መንደር የጋራ መጸዳጃ ቤት አለ? ሀ. አለ ለ. የለም
4. በቤትዎ ውስጥ ቤተሰቡ የሚጠቀምበት የግል ሻወር አለ? ሀ. አለ ለ. የለም
5. ፈሳሽ ቆሻሻን እንዴት ያስወግዳሉ? _____
6. ፈሳሽ ቆሻሻን የት ያስወግዳሉ?_____
7. የመጠጥ ውሃ ለማግኘት ከቤትዎ ምን ያክል ርቀት መጓዝ ይጠበቅብዎታል?
_____
8. የመጠጥ ውሃ ካለበት ቦታ ለመቅዳት ከቤትዎ ምን ያክል ጊዜ ይወስድቦታል?
9. በመንደርዎ ማዘጋጃ ቤቱ ከሚያቀርበው ሌላ ውሃ የሚያገኙበት አማራጭ አለ?

ሀ. አዎ አለ ለ. የለም

10. በመንደርዎ የውሃ አቅርቦት መስተጓጎል አለ?

ሀ. አዎ ለ. የለም

11.የመጠጥ ውሃ ከየት ነው የሚያገኙት?

ሀ. ከግል ቧንቧ ለ. ከቦኖ ሐ. ከወንዝ

መ. ከዝናብ ሠ. ከእሸግ ውሃ ረ. ከጉድጓድ

12. ከቡራዩ ከተማ አስተዳደር በቀን ለስንት ሰዓታት ውሃ ያገኛሉ?

ሀ. ከ 5 ሰዓት ያነሰ ለ. 5-10 ሰዓታት ሐ. 11- 20 ሰዓታት

መ. 21-24 ሰዓታት ሠ. በ2 ቀን አንዴ

13. ውሃ ለማግኘት ያለው አስቸጋሪነት፡

ሀ. በጣም አስቸጋሪ ለ. አስቸጋሪ ሐ. መካከለኛ

መ. ቀላል ሠ. በጣም ቀላል

14.በቡራዩ ከተማ አስተዳደር የውሃና ፍሳሽ ባለስልጣን ውስጥ የሚሰሩ ሰራተኞችን ዕውቀትና ክህሎት እንዴት ያዩታል?

ሀ. በጣም ከፍተኛ ለ. ከፍተኛ ሐ. መካከለኛ

መ. ዝቅተኛ ሠ. በጣም ዝቅተኛ

ለ. ጥራትን በተመለከተ

1. በአሁኑ ሠዓት የቡራዩ ከተማ አስተዳደር የውሃና ንጽህና አቅርቦት ጥራት ጥሩ ነው ብለው ያስባሉ?

ሀ. አዎ ለ. አላስብም

2. በቡራዩ ከተማ አስተዳደር የሚቀርብሎት ውሃ ጥራት ምን ይመስላል?

ሀ. ንጹህ ለ. ንጽህና ይጎድለዋል

3. አሁን ባለው የየመጠጥ ውሃ አቅርቦት ጥራት ረክተዋል?

ሀ. አዎ ለ. አልረካሁም

ክፍል 3፡ ሃላፊነትንና ተጠያቂነትን የሚመለከቱ ጥያቄዎች

1. የወረዳው የውሃና ፍሳሽ ባለስልጣን ስለ ውሃ ስርጭት ችግሮች፣ ዋጋ እና ጥራትን በተመለከተ ለዜጎች መረጃ የሚያቀርብበትን አግባብ እንዴት ያዩታል?

ሀ. በጣም ዝቅተኛ ለ. ዝቅተኛ ሐ. በቂ መ. ከፍተኛ ሠ. በጣም ከፍተኛ

2. የደንበኞችን ፍላጎት ለማሟላት የውሃና ፍሳሽ ባለስልጣኑ ምላሽ አሰጣጥ ምን ይመስላል?

ሀ. በጣም ዝቅተኛ ለ. ዝቅተኛ ሐ. በቂ መ. ከፍተኛ ሠ. በጣም ከፍተኛ

3. የደንበኞችን ቅሬታ አፈታት ስርዓት መዘርጋቱና በበቂ ሁኔታ ስራ ላይ መሆኑን እንዴት ይገመግሙታል?

ሀ. በጣም ዝቅተኛ ለ. ዝቅተኛ ሐ. በቂ መ. ከፍተኛ ሠ. በጣም ከፍተኛ

4. የውሃና ፍሳሽ ባለስልጣኑን ለአገልግሎት ፈላጊ ደንበኞች የዘረጋውን መረጃ አቅርቦት ስርዓት እንዴት ያዩታል?

ሀ. ጭራሽ የለም ለ. አለ ግን በቂ ይደለም

ሐ. በጣም የሚደነቅ ነው

5. ቀጥሎ ከተጠቀሱት ችግሮች ውስጥ የውሃና ፍሳሽ ባለስልጣኑ በሚሰጠው አገልግሎት የትኞቹ ችግሮች ይታያሉ?

ሀ. አድልዎ

ለ. በደንበኞች ላይ ያልተገባ ጫና መፍጠር

ሐ. ለሚሰጡት አገልግሎት ያልተገባ ገንዘብና ስጦታ መጠየቅ

መ. ሌሎች ካሉ ይጥቀሱ _____

ክፍል 4: የአገልግሎት አሰጣጥ ሁኔታን በተመለከተ

1. በቡራዩ ከተማ የውሃና የንፅህና አቅርቦት ምን ያህል ደስተኛ ነዎት?

ሀ. በጣም ደስተኛ ነኝ ለ. ደስተኛ ነኝ ሐ. መካከለኛ መ. ደስተኛ አደለሁም ሠ. በጣም ደስተኛ አደለሁም

2. በቡራዩ ከተማ አስተዳደር የውሃና ፍሳሽ ባለስልጣን ውስጥ ያሉ ሰራተኞች በስራ ገበታቸው ላይ የመገኘት ሁኔታ?

ሀ. ሁሌም በስራ ሰዓት ይገኛሉ

ለ. ግማሽ የሚሆነውን ጊዜ ይገኛሉ

ሐ. አናዳንዴ ብቻ ይገኛሉ

መ. ጭራሽ አይገኙም

3. በቡራዩ ከተማ አስተዳደር የውሃና ፍሳሽ ባለስልጣን ቢሮ አንድን ጉዳይ ለማስፈጸም ምን ያህል ጊዜ ይጠብቃሉ?

ሀ. ከ 1 ሰዓት በታች ለ. ከ1 ሰዓት እስከ 3 ሠዓት ሐ. ግማሽ ቀን

መ. 1 ቀን ሙሉ ሠ. ከ1 ቀን በላይ

4.የመስሪያ ቤቱ ሰራተኞች ለደንበኞች የሚያደርጉት መስተንግዶ ምን ይመስላል

ሀ. በጣም ጥሩ ለ. ጥሩ ሐ. መካከለኛ

መ. መጥፎ ሠ. በጣም መጥፎ

ክፍል 5፡ በውሃ አቅርቦትና የንጽጎና አገልግሎትን በሚመለከት ተሳታፊዎች ያላቸው አመለካከት

1. በአጠቃላይ የቡራዩ ከተማን የውሃና የንፅህና አቅርቦት እንዴት ያዩታል?

በጣም ጥሩ ጥሩ መጠነኛ/በቂ

ዝቅተኛ በጣም ዝቅተኛ

2. በቡራዩ ከተማ የመጠጥ ውሃና ንፅህና አቅርቦት ረክተዋል?

አዎ ረክቻለሁ አልረካሁም

3. በቡራዩ ከተማ የመጠጥ ውሃ አቅርትና ንፅህና አገልግሎት ዋጋ እርካታ ተሰምቶዎታል?

አዎ አይ

ክፍል 6፡ የመጠጥ ውሃና የንጽህና አቅርቦት እጥረት የሚያስከትላቸውን ችግሮች በተመለከተ

1. **በዚህ አንድ አመት ውስጥ በቤተሰብዎ ጤናና ህይወት ላይ ከውሃና ንጽህና ጋር የተያያዙ ችግሮች ተከስተዋል?**

   ሀ. አዎ **ለ. የለም**

2. **በዚህ አንድ አመት ውስጥ በእርስዎ እና/ወይም በቤተሰብዎ አባላት ለውሃ ወለድ በሽታ የተጋለጠ ሰው ነበረ?**

   ሀ. አዎ **ለ. የለም**

3. **የመጠጥ ውሃ እና የንጽጎና ጉድለት በእርስዎና በቤተሰብዎ ላይ ያመጣው ጉዳት ካለ ይጥቀሱ**

   _____

   _____

4. **በእርስዎ ግንዛቤ በቡራዩ ከተማ አስተዳደር የመጠጥ ውሃና ንጽህና አቅርቦትና ጥራት እንዳይሻሻል እንቅፋት ሆነዋል የሚሏቸው ችግሮች ምንድናቸው?**

   1._____

   2. _____

   3. _____

5. **እባክዎ እነዚህን ችግሮች ለመቅረፍ መፍትሄ ይሆናሉ የሚሏቸውን ነጥቦች ይጥቀሱ**

   1._____

   2._____

   3._____

ጊዜዎትን ሰጥተዉ ስለሞሉልን በጣም እናመሰግናለን