



Journal No: 47359

Full Length Research Paper**Assessment of Urban Domestic Water Supply: A Case of Gimbichu Town, Ethiopia****Deependra Nath**

Associate Professor, Guru Kashi University, Bathinda, India.

Article history

Received: 15-11-2017

Revised: 25-11-2017

Accepted: 04-12-2017

Corresponding Author:**Deependra Nath**

Associate Professor, Guru Kashi University, Bathinda, India.

Abstract

Gimbichu town has been experiencing the problem of adequate safe water supply. The people of this study area have been fetching water from the nearby rivers, streams and traditional wells since its establishment in 1932. It had been an Administration center from long period of time for the Soro Woreda in Hadiya Zone, South Nation Nationalities and Peoples Region. Gimbichu town is one of the newly growing towns in the country with rapid urban expansion, high rate of population growth which resulted from high immigration and natural increase. A number of studies have been carried out on urban water supply in different parts of the world. But only a few Ethiopian experiences are relevant for the present study. As there no study was conducted on domestic urban water supply of Gimbichu town and residents of the town are facing problem in getting potable water and domestic water to carry out the normal household chores so it is worthwhile to conduct this study. In order to successfully conduct the study and to reach to plausible conclusions the author used descriptive survey method. Both primary and secondary data was collected to carry out the study Results revealed that existing domestic urban water supply system in Gimbichu town is not sufficiently developed to meet the water demand of the town. Presently nearly half of total population of Gimbichu town is getting water for household chores through municipal domestic water supply system. The gap is gradually increasing over time. There is an urgent need to overhaul the domestic urban water supply system of Gimbichu town else the growth and development of the town is expected to hamper.

Keywords: Urban, Domestic, Water Supply, Gimbichu, Ethiopia**Introduction**

According to Yewondwossen (2012) urban domestic water supply is one of the most important of all municipal services. It is the most essential necessity of life after oxygen. Anything that disturbs the provision and supply of water, therefore, tends to disturb the very survival of humanity. It is a basic need for human being's welfare. Adequate domestic water supply is a basic prerequisite to sustainable development. However, in most of the developing countries there is limited access associated with urban domestic water supply. Dowa *et al* (2007) have recognized water as a main pillar in economic development and reduction of poverty. Ethiopia is a country with high ground water potential. It has twelve major river basins, including the Blue Nile, and eleven major lakes, which makes the country the "Water Tower" of East Africa. Yet, access to safe drinking water supply service in major parts of the country is among the lowest in Sub-Saharan Africa. While governmental and non-governmental organizations have been implementing water supply projects in recent years, many lack sustainability due to improper management.

Geographical location of Gimbichu Town is 7026'45" N latitude and 37037'30" E longitude. It is located at a distance of 212 km from Addis Ababa. The average elevation of the town is 2060 meters above sea level. The town has meant annual precipitation of 1062 millimeter (Gimbichu Town Municipality, 2013). The landscape of the town area and its surrounding is relatively gently sloped and slightly undulating plain.

Gimbichu town is one of the newly growing towns in the country with rapid urban expansion, high rate of population growth which resulted from high immigration and natural increase. According to CSA, its population in 1989, 1999 and 2007 was 2650, 4100 and 9573 respectively. This rapid growth of the town has brought about a tremendous increase in the demand for urban infrastructure supply, particularly portable water supply. Keeping in the view the great importance of domestic urban water supply and consumption this study has been conducted in Gimbichu town, Hadiya Zone, SNNP Regional State, Ethiopia, with the objectives, i.e. to identify major sources of water supply and consumption at household level, to analyze spatial and temporal variation in levels of water supply and consumption among the households and to describe determinant factors those affect the consumption of water at household level in the study area.

Gimbichu town has been experiencing the problem of adequate safe water supply. The people of this study area have been fetching water from the nearby rivers, streams and traditional wells since its establishment in 1932. It had been an Administration center from long period of time for the Soro Woreda in Hadiya Zone, South Nation Nationalities and Peoples Region. The

situation of the water supply in Gimbichu is very similar to that of other developing countries' towns where water supply situation in the town has been deteriorating. The problems associated with inadequate water supply services in this town contribution to urban environmental degradation and cause damages to public health. Hence, the dwellers explained problem of water supply in Gimbichu town was not only the problem of adequacy and quality but also it has been the problem of distribution and reliability.

A number of studies have been carried out on urban water supply in different parts of the world. But only a few Ethiopian experiences are relevant for the present study, which areas follows: Ambo town (Chala, 2011); Urban water supply, the case of Assosa town (Assefa, 2006); Household supply and factors affecting for consumption, Mekelle town (Bihok, 2006) and Analyses of affordability and determinants of willingness to pay for improved water supply service in urban areas (Alebele, 2002). As there no study was conducted on domestic urban water supply of Gimbichu town and residents of the town are facing problem in getting potable water and domestic water to carry out the normal household chores so it is worthwhile to conduct this study.

The study was conducted with the following objectives:

1. To assess the existing domestic urban water supply service of the town;
2. To measure the water demand and its availability.

Domestic urban water supply is one of the major challenges in the entire world, predominant in third world developing countries, like sub-Saharan Africa, particularly Ethiopia. Studying the extent and coverage and dynamics of urban water supply service in Gimbichu town helps to identify the pressing problems in service delivery.

Materials and methods

Study area

Geographical location of Gimbichu Town is 7026'45" N latitude and 37037'30" E longitude. It is located at a distance of 212 km from Addis Ababa. The average elevation of the town is 2060 meters above sea level. The town has meant annual precipitation of 1062 millimeter (Gimbichu Town Municipality, 2013). The landscape of the town area and its surrounding is relatively gently sloped and slightly undulating plain.

Methodology

In order to successfully conduct the study and to reach to plausible conclusions the author used descriptive survey method. Both primary and secondary data was collected to carry out the study. In order to have firsthand idea of the study area, field observation was done by undertaking field trips and tours. Stratified random cross sectional household survey was conducted by the trained volunteers collect information about the water supply in the town, demand and consumption as well as availability of water of water at household level. Collected data was tabulated and treated with suitable statistical techniques viz. measures of central tendency and parametric tests, mainly t test.

Table 1: Distribution of sample households by clusters

No	Kebele	Clusters	Total population	Total households	Sample size	Per (%)
1	Gimbichu	01	3,214	634	64	3.5
2	Town	02	3186	609	61	3.3
3		03	3173	584	58	3.2
		Total	9,573	1,827	183	10

Hhs-households

Source: CSA, 2007 and 01, 02, 03 clusters of this municipal offices.

Prevailing Status of Domestic Urban water Supply in Gimbichu Town

Urban domestic water supply is mainly the responsibility of GWSSS office of the town. Additionally, support made by Municipality, health offices and SoroWoreda Water and Mines Energy Offices by contributing technical and financial supports. In practice, the Municipality Office has limited participation and coordination with this sector by contributing financially, facilitating the situation and informing any activities that relate to Master plan problem of the town that can disturb their activities as a result currently 840 customers from 1827 total households this shows how much the water supply service inadequate in the area. Similarly, the water and mines energy office has also its contribution to make the sector effective; which might be financial, technical and facilitation. Therefore, the information collected and interviewed responses indicate that limited effort and attention affected the service to solve the problems (GWSSS, 2013).

As per the below figure 1, access to water supply services to the household indicates that half of the respondents do not use piped water from the main source in the town. As item one indicates, out of 183 households 83 (45.3%) of the respondents have no access to the piped supply of water or have no pipeline connection and 79 (43.2%) of the respondents have accessed pipeline connection to their home. This nearly large number of people indicates that the provision of water does not cover the demands of the dwellers. Additionally, which reflect there is problems in the study area. So, the concerned body attention is low to improve or solve the water supply problems in the area as similar suggestion raised by sampled households.

This indicated that the demand for water is greater than the supply of water, which needs attention of the concerned bodies to minimize this problem. On the other hand, as interview conducted with selected offices heads response shows, there was still a gap between the supply and demand. Among the challenges inadequate finance, low participation of concerned bodies, inadequate man power, weak coordination among the offices, and failure to implementing the policies as it was written on the paper, lack of

other institutions like community based organization, rapid population growth and failure to motivate the community. Especially, the community involvement in the provision of water service is the central part for the development of infrastructure.

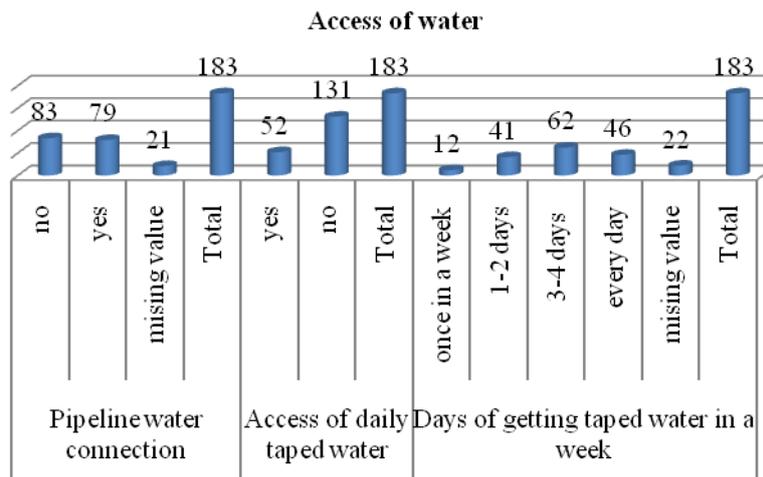


Fig 1: Access to water in Gimbichu town

Average of water consumption and demand per day per HH

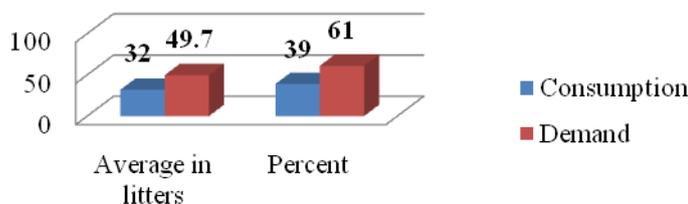


Fig 2: The consumption and demand of water in Gimbichu Town

Therefore, concerning the majority of the respondents’ daily consumption is between 51 to 80 liters water per day. But respondents 135 (73.8%) accessed water not proportional with their daily demands. Water supply problems, 133 (72.7%) of the respondents were agree on the problems among them 74 (40.4%) of the respondents mentioned their problems were financial and 79 (43.2%) of the respondents stated their problems were bureaucratic system. So, existing water supply conditions, 143 (78.1%) of the respondents were not happy at the current water supply service due to 71 (38.8%) of the respondents are unsatisfied as a result its interruption. Hence, 76 (41.5%) of the respondents satisfied their daily demands using alternative sources.

Conclusion

It is clear from the above discussion that the existing domestic urban water supply system in Gimbichu town is not sufficiently developed to meet the water demand of the town. Presently nearly half of total population of Gimbichu town is getting water for household chores through municipal domestic water supply system. The gap is gradually increasing over time. There is an urgent need to overhaul the domestic urban water supply system of Gimbichu town else the growth and development of the town is expected to hamper.

References

African Development Fund (ADF), 2005. Ethiopian rural water supply and sanitation appraisal report. Infrastructure department north, east and south Onin.
 AlebeleBayrau, 2002. Affordability and Willingness to Pay for Improved Water Supply in Urban Areas of Ethiopia.Ethiopia.
 AssefaDelesho, 2006. Urban Water Supply, the Case of Assosa Town. Addis Ababa,
 ChalaDeyessa, 2011. An Assessment of Urban Water Supply and Sanitation the Case of Ambo Town. Addis Ababa, Ethiopia.
 CSA, 2007. Central Statistical Authority of Ethiopia Demographic and Health Survey; Addis Ababa: CSA.
 Africa: Ethiopia case study, SEI, Stockholm Environmental Institute.
 Dowa, A.A., S. Noel, G. Shone, J. Barron, and S. John, 2007. Water and Poverty Linkages in Gimbichu Town Water Supply and Sewerage Service Enterprise, 2013. Water Project Assessment Report, Gimbichu unpublished.
 Gimbichu Town Water Supply and Sewerage Service, 2012. Work plan activities Gimbichu.
 Gimbichu Town Municipality, 2013. For urban household improving infrastructures
 YewondwossenTesfaye, 2012. A Comparative Study on Woreda Managed and Community Managed Rural Water Supply Projects, with Respect to their Planning, Implementation Functionality and Utilization; Amhara National Regional States, Ethiopia.