

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

* Dr. C. Anbalagan ** Dr. Brehanu Borji, ***Dawit Daniel

* Professor of M.Sc., in Accounting & Finance, School of Management & Accounting,
Research Adviser, Editor-in-Chief of the Reputed International Journals, Hawassa University,
Ethiopia, East Africa. dr.chinlakshanbu@gmail.com, Mobile No: +251-0932319331

** Associate Professor of Marketing, School of Management & Accounting, Research Adviser,
Editor in Reputed International Journals, Hawassa University, Ethiopia

*** Associate Registrar, Hawassa University, Ethiopia, East Africa.

Abstract

In 2005 the government announced highly ambitious targets to increase coverage in its Plan for Accelerated Sustained Development and to End Poverty (PADEP) for 2010. The investment needed to achieve the goal is about US\$300 million per year, compared to actual investments of US\$39 million in 2001-2002. In 2010 the government presented the equally ambitious Growth and Transformation Plan (GTP) 2011-2015 that aims at increasing drinking water coverage, based on the government's definition, from 68.5% to 98.5%. While donors have committed substantial funds to the sector, effectively spending the money and to ensure the proper operation and maintenance of infrastructure built with these funds remain a challenge.

Key words: government- ambitious- investment- GTP- substantial- funds- challenge- infrastructure

Introduction

Access to water supply and sanitation in Ethiopia is amongst the lowest in Sub-Saharan Africa and the entire world. While access has increased substantially with funding from external aid, much still remains to be done to achieve the Millennium Development Goal of halving the share of people without access to water

and sanitation by 2015, to improve sustainability and to improve service quality. Some factors inhibiting the achievement of these goals are the limited capacity of water bureaus in the country's nine regions and water desks in the 550 words; insufficient cost recovery for proper operation and maintenance; and different policies and procedures used by various

**Responsibility and Service Provisions of Water Supply and Sanitation
Regulations in Ethiopia**

donors, notwithstanding the Paris declaration on aid effectiveness.

In 2001 the government adopted a water and sanitation strategy that called for more decentralized decision-making; promoting the involvement of all stakeholders, including the private sector; increasing levels of cost recovery; as well as integrating water supply, sanitation and hygiene promotion activities. Implementation of the policy apparently is uneven.

Water Resources and Use

Ethiopia has 12 river basins with an annual runoff volume of 122 billion m³ of water and an estimated 2.6 - 6.5 billion m³ of ground water potential. This corresponds to an average of 1575 m³ of physically available water per person per year, a relatively large volume. However, due to large spatial and temporal variations in rainfall and lack of storage, water is often not available where and when needed. Only about 3% of water resources are used, of which only about 11% (0.3% of the total) is used for domestic water supply.

The capital Addis Abeba's main source of drinking water is the Gafsara dam built during the Italian occupation and rehabilitated in 2009. Wells and another dam complement the supply. The city of Dire Dawa is supplied exclusively from groundwater that is highly polluted. The situation is most dramatic in Harar where "a steady decrease of the level of Lake Alemaya has resulted in the complete

closure of the treatment plant". Due to supply shortfall, water vendors sell untreated water at extremely high prices. The lake dries up because of local climate change, changes in land use in its basin and increased irrigation of khat, a mild drug that is being grown for local consumption and export. A pipeline is expected to bring water over a distance of 75 km from a well field near Dire Dawa to Harar. The great majority of the rural community water supply relies on groundwater through shallow wells, deep wells and springs. People who have no access to improved supply usually obtain water from rivers, unprotected springs and hand-dug wells. Rainwater harvesting is also common. Access to improved water supply and sanitation in 7 Sub-Saharan countries from 1990 until 2008. According to data from the Joint Monitoring Programme for Water Supply and Sanitation of WHO and UNICEF, which are in turn based on data from various national surveys including the 2005 Ethiopia Demographic and Health Survey (DHS), access to an improved water source and improved sanitation was estimated as follows in 2008:

1. 38% for improved water supply (98% for urban areas and 26% for rural areas)
2. 12% for improved sanitation (29% in urban areas, 8% in rural areas)

According to figures used by the Ministry of Finance and Economic Development for planning purposes, however, access was much higher. In 2010, access to drinking water was estimated at 68.5%: 91.5% in

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

urban areas (within 0.5 km) and 65.8% in rural areas (within 1.5 km). The higher figure for rural areas may be because the distance to an improved water source used in this definition is higher than the distance used by the Demographic and Health Survey.

In 1990 access to improved water supply had been estimated at only 17%, and access to improved sanitation had been estimated at only 4%. There thus has been a significant increase in access for water supply and sanitation, which spans both urban and rural areas. More than 138,000 improved community water points were constructed and rehabilitated from 2008 to 2010. In communities that lack access to an improved water source, women bear the brunt of the burden of collecting water. For example, according to an article by Tina Rosenberg for National Geographic, in the mountain-top village Foro in the Konso special woreda of southwestern Ethiopia women make three to five round trips per day to fetch dirty water from the Koiro river. Each roundtrip lasts two to three hours and water is carried in "50-pound jerrycans".

Service Quality

Drinking Water Quality

Drinking water quality in Ethiopia varies. The most comprehensive picture of drinking water quality are the results of a national statistically representative survey of piped water supply, boreholes, protected dug wells and protected springs carried out

by the WHO and UNICEF in 2004-2005. It shows that 72% of samples complied with the values for coliform bacteria in the Ethiopian drinking water standard ES 261:2001 and the WHO guidelines for drinking water. In the case of piped water supply by utilities compliance was highest at 88%. Open wells and unprotected springs were not included in the survey. Besides bacterial contamination, natural contamination with fluoride is an issue in the Rift Valley. The results of the survey confirm the results of routine monitoring undertaken in the laboratories of the Regional Water Bureaus and the Regional Health Bureaus. The latter results are archived at the Ethiopian Health and Nutrition Research Institute. Interaction and exchange of information between regional health bureaus and regional water bureaus is poor.

Other aspects of service quality

In 2010, 20 percent of rural water systems were malfunctioning, down from 25% in 2007. About 35 percent of the estimated 30,000 handpumps in Ethiopia, serving an estimated 2 million people, were non-functioning in the mid-2000s. In piped water systems rationing and service interruptions are frequent. There are no wastewater treatment plants in Ethiopia, so all wastewater collected in sewers is discharged without any treatment to the environment.

Responsibility for Water Supply and Sanitation

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

In order to understand responsibilities in the sector it is necessary to provide a brief overview of local government in Ethiopia. Ethiopia is a federal state consisting of the following subdivisions:

1. nine ethnically based regions or Kililoch with a population between 200,000 and 25 million each;
2. 68 Zones with a population between 100,000 and a few million each;
3. 550 Woredas or districts, with a population between 10,000 and more than 300,000 each;
4. A large number of Kebeles, which constitute the smallest administrative units in Ethiopia.

In addition to the nine regions there are two "chartered cities", (Addis Ababa and Dire Dawa), where the lower-level administrative units mentioned above do not exist. There is wide disparity in development and institutional capacity between regions and also within regions. The Amhara, Oromia, Tigray regions as well as the small Harari region are relatively developed. About 70% of Ethiopians live in these four regions. The Southern Nations, where about 20% of the population lives, is very heterogenous. In the more pastoralist and remote "emerging" regions Somali, Afar, Gambela and Benishangul-Gumuz, where about 10% of the population lives, capacity tends to be lowest.

Policy and Regulation

There is strong national water supply and sanitation policies and key agencies have clear roles and strategies.^[17] National policies are set by the Ministry of Water and Energy (MWE), formerly the Ministry of Water Resources (MWR) for water supply and by the Ministry of Health for sanitation. In 2006 the government adopted a Universal Access Plan (UAP) to achieve 98% access for rural water supply and 100% access for urban water supply and sanitation by 2012. Its cost was estimated at US\$2.5bn. During the first phase until 2012 the focus is on affordable and appropriate technologies, with the following service standards:

Setting	Percapita consumption	Service radius
Rural	15 liter/capita/day	1.5km
Urban	20 liter/capita/day	0.5km

In October 2006 a Memorandum of Understanding has been signed by the Ministry of Water Resources, the Ministry of Health and the Ministry of the Environment, to clearly define the roles and responsibilities of each Ministry in the implementation of the Universal Access Plan. Regional Water Bureaus and Woreda Water Desks are in charge of investment planning, monitoring and technical assistance to service providers. Their capacity to fulfill these tasks is sometimes limited.

Water Supply

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

Formally the MWE's mandate covers only water resources management and it has no legal mandate concerning drinking water supply. Nevertheless, de facto it is the entity in charge of setting policies for water supply and to channel donor funds in the sector to local government entities. As of 2009, what was then the Ministry of Water Resources had 737 employees in eight departments and 10 "services". One of the eight departments is the Water Supply and Sewerage Department. As of 2011 Alamayehu Tegenu is the Minister of Water and Energy. In 2001 the government adopted a National Water Strategy prepared by the MWR. The overall strategy includes a water resources strategy, a hydropower development strategy, a water supply and sanitation strategy, and an irrigation strategy.

Concerning water supply and sanitation, the strategy aims at:

1. More decentralized decision-making
2. Promoting the involvement of all stakeholders, including the private sector
3. Increasing levels of cost recovery
4. Integrating water supply, sanitation and hygiene promotion activities.

The strategy document does not include a diagnostic of the current situation. The water and sanitation part of the strategy alone includes 44 recommendations concerning technical, institutional, capacity building, social, economic and environmental issues. There is no

priorization between the recommendations and the strategy does not establish mechanisms to monitor the implementation of the strategy.

Sanitation

The Ministry of Health is in charge of policies related to sanitation and hygiene promotion. It has adopted a Sanitation and Hygiene Promotion Strategy. De facto sewers in urban areas are under the responsibility of the MWR, while the promotion of on-site sanitation is the responsibility of the Ministry of Health. The Sanitation and Hygiene Promotion Strategy has re-focused government resources on the promotion of pro-poor, low-cost practices.

Service Provision

In the capital the Addis Ababa Water and Sewer Authority provides water and sewer services. In other cities and small towns Town Water Boards are responsible for service provision. They are expected to contract out service provision to private operators. In rural areas community water and sanitation committees operate water systems and promote sanitation. Not all the local committees are registered, which is a prerequisite to open a bank account to hold funds collected from users. Woreda Water Desks (local government entities) are supposed to support local committees. However, according to a research report funded by DFID, the community management service delivery approach that dominates in rural areas in Ethiopia, "has

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

bypassed local government authorities and reduced their ownership; however these actors are still needed if rural services are to be sustainable and scalable.

Other

Regional water resources development bureaus play an important role in planning

investments at the regional level and in capacity building. The Ethiopian Social Rehabilitation and Development Fund (ERSDF) – a Social Fund established in 1996 – is also an important actor, especially in rural areas. It has financed almost 2,000 rural water projects serving about 2.5 million people. However, the government has decided to phase out the ERSDF and to re-deploy its staff to other institutions.

Ethiopia: Water and Sanitation	
Data	
Water coverage (broad definition)	38% (2008) or 68.5% (2010), depending on source and definition
Sanitation coverage (broad definition)	12% (2008) or 56% (2010), depending on source and definition
Continuity of supply (%)	Mostly intermittent
Average urban water use (l/c/d)	30–60 (2006)
Average urban water tariff (US\$/m3)	n/a

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

Share of household metering	Low
Annual investment in WSS	US\$1/capita
Share of self-financing by utilities	Nil
Share of tax-financing	Low
Share of external financing	High
Institutions	
Decentralization	Substantial, since 1995
National water and sanitation company	None
Water and sanitation regulator	None
Responsibility for policy setting	Ministry of Water and Energy (water supply) Ministry of Health (sanitation)
Sector law	n/a

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

Number of urban service providers n/a

Number of rural service providers n/a

Recent Developments

Until 1995 the national government had been responsible for centrally planning and implementing water and sanitation projects. Under the 1995 constitution Ethiopia became a federal state, which implied the

decentralization of many functions to lower levels of government. This process has now been under way for more than a decade, but decentralization has been hampered by the limited capacity of local government to carry out its new responsibilities.

Also in 1995, a Ministry of Water Resources was created, taking over many of the responsibilities of the water resources department of the former Ministry of Public Works. In 1999 the government adopted a National Water Resources Management Policy, which was followed by the establishment of a Water Resources Development Fund (2002) and a Water Sector Development Program. The latter includes a water supply and sewerage development program (nota bene the focus

on sewerage and thus the absence of on-site sanitation from the program).

The government's Plan for Accelerated Sustained Development and to End Poverty (PADEP), covering the period 2005-2010, aimed at increasing access to an improved water source to 84% and access to improved sanitation to 80% by 2010. These ambitious targets go well beyond the water and sanitation targets of the Millennium Development Goals, which aim at halving the share of people without access by 2015. According to one set of government figures, which is used by the Ministry of Finance and Economic Development for planning purposes, access to drinking water reached 68.5% in 2010. According to another set of government figures, based on national survey data and used by the WHO and UNICEF to monitor the Millennium Development Goals, in 2008 access to an improved water source was only 38% and to improved sanitation 12%. In 2010 the government presented the equally ambitious Growth and Transformation Plan (GTP) 2011-2015 that aims at increasing drinking water coverage, based on the

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

government's definition, from 68.5% to 98.5%.

Tariffs and Cost Recovery

On average cost recovery is too low to recover operating costs, not to speak of providing adequate maintenance of facilities. Recurrent expenditures – estimated at US\$29 million in 2001–02 – were financed primarily through user charges (64%), as well as by subsidies from the regional governments (31%) and the federal government (5%). Despite this overall bleak picture, a few service providers recover all operating costs and generate a modest cash surplus.

The National Water Resources Management Policy aims at full cost recovery for urban systems and recovery of operation and maintenance costs for rural systems. It is not clear if progress has been made to achieve this ambitious objective since the policy was adopted.

Investment and Financing

Actual investment

There are no recent reliable estimates of actual investment levels in the sector, and available estimates vary greatly. A detailed estimate of investment and financial flows in the Ethiopian water sector was carried out by the World Bank's Water and Sanitation Program (WSP) for the financial year 2001-02. It estimated total sector investments at US\$39 million or less than

half a dollar per capita, being one of the lowest recorded sector investment levels in the world. Water and sanitation have declined as a share of total poor-focused expenditure from 7.4% in 2005/06 to 3.4% in 2009/10. In addition, according to research funded by DFID, "actual expenditure may fall well short of these levels. It seems that a very significant proportion of resources are not utilized and are subject to bottlenecks."

Projected investment

The government estimates that annual investments in the 2006-2015 period will reach about US\$100 million per year, or about two and a half times their level in 2001-2002. This projection is based on funding commitments made by donors and the government. It thus does not take into account bottlenecks in implementation due to limited capacities or other potential pitfalls. The government estimates that the actual investment needs are about three times as much or US\$297 million per year for the period 2006-2015.

Financing

Sources

According to the WSP estimate quoted, in 2001-2002 only 9% of sector investments were funded by the federal budget, 55% through the regional budget, 33% off-budget by NGOs, 2% by the ERSDF and 1% by other sources. This estimate does not include community in-kind contributions,

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

which are high for rural water supply and sanitation. A high but unknown share of the federal budget and probably also of the Woreda budget devoted to the sector is funded by donors. Concerning projected investments for 2006–2015, it is estimated that 12% (US\$12 million) will be funded by the government with its own resources, 15% (US\$16 million) by communities and 73% (US\$75 million) by donors. It is not clear if this estimate includes off-budget support by NGOs. Because of the different categories used, a comparison between the historical and projected sources of financing is not possible.

Processes

According to a research report funded by DFID, the levels of funding to services delivered by regional and local government are difficult to predict. A large share of donor funding is channeled outside the government budget, although as of 2009 there was a trend for donors and government to "ensure the alignment of financing mechanisms". Where financing is provided through the budget, conditions and reporting procedures are "excessively onerous". Budget transparency and accountability are limited, although efforts are being made to create an open budget system at all levels of government. According to the report the government, particularly at lower tiers, "does not recognise citizens' rights to information about budget allocations". The Universal Access Plan uses national-level unit costs to allocated government funds to local governments. The unit cost approach fails

to take regional differences into account. There is no funding for operation and maintenance or the costs of local governments to support communities in operation and maintenance. This increases the risk that newly built systems will be failing. For the country's 550 Woredas an important source of financing is block grants from the central government which they can use autonomously within broad criteria set by the Water Resources Development Fund (WRDF). The WRDF itself provides loans and is administered by a Board that is responsible to the MWE and is funded through budgetary allocations and donor funds.

External Cooperation

Donors finance numerous projects in water supply and sanitation in Ethiopia – some through the Federal Government and some directly to regions, towns and communities. The donors have established a technical working group (TWG) on water as part of a core donor group called the Development Assistance Group. A Multi-Stakeholder Forum is also supported through the European Union Water Initiative. Despite improved coordination, donors still use different implementation arrangements. As a result, according to the World Bank, transaction costs are high. Important donors in the sector are the African Development Bank, CIDA, China, the British DFID, the EU, FINIDA, AFD from France, Germany (through GTZ and KfW), JICA, the Netherlands, UNDP, UNICEF and the World Bank. There are also about 500 local and foreign NGOs, many of which are

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

active in water supply and sanitation. The African Development Bank provided a US\$64 million grant for rural water supply and sanitation approved in 2005.

China

In November 2011 it was announced that China would provide a a US\$ 100 million loan for water supply in Addis Ababa.

Water Aid

The British NGO Water Aid is engaged in Ethiopia since 1983. It works closely with established local NGOs. In Oromia Region, water projects tend to be spring-fed gravity schemes, some of which are very large, providing water for tens of thousands of people. In Southern Nations, Nationalities, and People's Region schemes have included deep boreholes as water is sometimes only found below 200 meters. For example, in the village of Orbesho residents - mainly women - built themselves an access road to allow drilling equipment to be brought in, dug trenches for pipes and collected stones for structures. In Amhara and Tigray the main technologies have been hand-dug wells and spring development. In Benishangul-Gumuz rope pumps are also used. In sanitation, WaterAid supports the construction and use of latrines. Hygiene education has increasingly focused on the close links between proper handwashing at critical times, like before eating and after going to the toilet, and improved health. In all cases Water Aid works closely with communities from the start. Particular attention is now being paid to engaging

women. Since 1998 Water Aid has also been engaged in the slum areas of Addis Ababa. Projects include establishing communal water points linked to the city's piped systems, as well as shower and latrine blocks.

World Bank

In May 2012 the World Bank provided approved a USD 150 million soft loan for an urban water and sanitation project as additional financing to a USD 100 million soft loans approved in 2007. The project covers Addis Ababa, Gondar, Hawassa, Jimma, Mekelle and Diredawa. On the sanitation side, it will promote household latrines, hygiene and sanitation practices and constructing communal sanitation facilities. Water production is expected to increase from 50 to 75 liter per capita per day in Addis Ababa and from 30 to 50 liter in the five secondary cities. The water distribution network will be extended to serve 400,000 more people (40,000 connections) in Addis Ababa and 500,000 more people (50,000 connections) in the five secondary cities. The project will also promote awareness of water conservation among customers. The project will also reduce water losses: In Addis Ababa out of the 50 liters per capita per day produced, only 35 reached consumers due to water losses. In the remaining cities only 20 of the 30 liters produced reached consumers.

Conclusion

In March 2010, the World Bank approved additional financing of USD 80 million for

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

a USD 100 million rural water supply and sanitation project approved in 2004. According to the World Bank, until 2010 the original project had financed the construction of 1288 hand dug wells, 835 protected springs, 576 shallow wells, 99 deep wells, 75 rural piped systems and 35 rainwater harvesting, as well as conducting hygiene and sanitation promotion. In rural areas alone, according to the World Bank the project facilitated access to clean water and improved sanitation facilities to about 1.4 million people. In urban areas, the project provided "immediate service improvement" in 87 towns which benefited about 143,000 people.

References

1. Sanitation: Ethiopia, accessed on 18 September 2010
2. Ministry of Finance and Economic Development: Growth, Draft, September 2010, p. 18
3. World Bank: Ethiopia, retrieved on July 17, 2011
4. The International Benchmarking Network for Water and Sanitation Utilities (IBNET):Utility Search The range is for the five utilities serving Addis Abeba, Dire Dawa, Harar, Mekelle and Adama; accessed on September 19, 2010
5. International Water Management Institute:Water Resources and Irrigation Development in Ethiopia, Working Paper 123, by Seleshi Bekele Awulachew, Aster Denekew Yilma, Makonnen Loulseged, Willibald Loiskandl, Mekonnen Ayana and Tena Alamirew, 2007
6. World Resources Institute:Water Resources and Freshwater Ecosystems Country Profile - Ethiopia, accessed on September 10, 2010, withdrawal data are for 1987
7. Jigjiga TV News. Gafarsa Water Dam Project Completed, 16 August 2009
8. UN Habitat. Water for African Cities. Addis Ababa City Programme, retrieved on 25 September 2010
9. UN Habitat. Water for African Cities. Dire Dawa City Programme, retrieved on 25 September 2010
10. UN Habitat. Water for African Cities.Harar City Programme, retrieved on 25 September 2010
11. UNEP Atlas of our changing environment. Lake Alemaya, Ethiopia, 12 June 2008, retrieved on 26 September 2010
12. African Development Bank. Harar Water Supply & Sanitation Project, approved on September 4, 2002, retrieved on September 27, 2010
13. Geographic: The, by Tina Rosenberg, April 2010, retrieved on September 27, 2010
14. WHO/UNICEF (2010). "Rapid assessment of drinking-water quality in the Federal Democratic Republic of Ethiopia". Retrieved 20 August 2011.
15. Rural Water Supply Network (April 21, 2009). "Handpump Data, Selected Countries in Sub-Saharan

Responsibility and Service Provisions of Water Supply and Sanitation Regulations in Ethiopia

**International Faculty and Students Multi-Research Consortium's
African International Journal of Research in Management
Vol-01, Issue No-02, Jul-Dec-2013
ISSN: Print- 2308-3034
Online-2308-1341**

- Africa".
<http://www.rwsn.ch/documentation/skatdocumentation.2009-03-09.7304634330/file>. Retrieved 19 July 2012.. Data are from the Demographic and Health Survey 2000 and the number of handpumps has been estimated by B.Mulneh.
16. World Bank:Water supply and sanitation project, Project Appraisal Document, 2004, p. 24-25, accessed on September 27, 2010
 17. USAID:Ethiopia Water and Sanitation Profile, ca. 2007, accessed on September 18, 2010
 18. Ministry of Water and Energy. "Universal Access Plan".. Retrieved 21 August 2011.
 19. AMCW/AfDB/EUWI/WSP/UNDP : Getting Africa on Track to meet the MDGs on Water and Sanitation - A Status Overview of Sixteen African Countries, 2006, p. 21
 20. African Development Bank:Rural Water Supply and Sanitation Project, Appraisal Report, December 2005 (broken link)
 21. Getnet Alemu and David Thomas (May 2009). "Financing in the water, sanitation and hygiene (WaSH) sector in Ethiopia: May 2009 Evidence from Benishangul-Gumuz regional state". Research-inspired Policy and Practice Learning in Ethiopia and the Nile region (RiPPLE) / DFID. p. vi-vii. Retrieved 21 August 2011.
 22. World Bank 2007 Urban water supply and sanitation project accessed on September 27, 2010
 23. Water and Sanitation Program: Ethiopia Water Supply Sector Resource Flows Assessment 2004, accessed on September 18, 2010, p. 4
 24. Development Assistance Group Ethiopia: Thematic Area Water, accessed on September 19, 2010
 25. Reuters (17 November 2011). "China to lend Ethiopia \$100 mln - Xinhua". Retrieved 19 July 2012.
 26. Water Aid. Where we work: Ethiopia, retrieved on September 27, 2010
 27. World Bank. Project Appraisal Document: Urban Water Supply and Sanitation Project, 2007
 28. World Bank (31 May 2012). "World Bank Helps to Provide Improved Water and Sanitation Services to over 4 million Ethiopians". Retrieved 19 July 2012.
 29. World Bank. Water Supply and Sanitation Project-Additional Financing, Project Information Document, retrieved on September 27, 2010
 30. World Bank. Project Appraisal Document: Ethiopia Water Supply and Sanitation Project, 2004

**Responsibility and Service Provisions of Water Supply and Sanitation
Regulations in Ethiopia**