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Challenges of sustaining urban water supply for rapidly growing post war city: case study of Hargeisa City

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Over 65% of the estimated one million people in Somaliland capital city of Hargeisa are currently relying on water trucking from unprotected and poorly maintained water sources around Hargeisa for daily water use and the poorest families spend almost 5 times more than others who have access to main water due to the high price of the trucked water. Hence, the Hargeisa urban water supply upgrading project is currently underway to replace the tumbledown and inadequate water infrastructure that was constructed 1970s to supply what was a city of 180,000 inhabitants. The project is principally funded by the European Union with supplementary fund from the Somaliland Development Fund and World Bank/WSP in partnership with the Hargeisa Water Agency and UN- Habitat. Therefore, this paper is examining the challenges that the poor resourced Hargeisa Water Agency (HWA) will face for managing the improved Hargeisa water supply system beyond the current large-scale water supply upgrading project.

Introduction

The Hargeisa Water Agency (HWA) is a parastatal agency mandated to provide adequate and accessible water supply services to the citizens of Hargeisa. The post conflict city of Hargeisa is the biggest urban setting in Somaliland, with a rapidly growing population; it is also the hub of private trade and the seat of the Government of Somaliland. According to the Hargeisa Municipality the estimated number of people living in Hargeisa is approximately one million, with an estimated 5-7% per annum growth rate. As a consequence of this growth rate, the city has expanded exponentially towards all directions, and there are new suburbs emerging. The resultant of increasing in combined of inefficiency of the city's water management has mean that the availability of safe and adequate water supply has become critical. The demand for water has increased enormously, and water scarcity has become acute in Hargeisa. . Compounding this is are concerns regarding the uncertainty about the government's ability to sustain funding levels in the water sector, UNICEF (2012A).

The paper will discuss how the current infrastructure improvement and capacity building projects funded by various donors will increase the water production by up to 122%, and will review the progress of HWAs corporate governance enhancement. The paper will also highlight lessons learned from delivering urban water supply in a rapidly growing post conflict city.

Study Methodologies: The methods of data collection for his paper were mainly field work undertaken in Hargeisa, a literature review that included project documents, and primary data collection using focus group discussions (FGDs), SWOT analysis and key informant interviews were conducted by authors from November 2014 - February 2015.

Background

The hydro-geophysical assessment of Hargeisa boreholes field conducted by UHL & Associates stated that the current water supply system of Hargeisa was installed by the Chinese Government in the early 1970's and expanded in 1986-88. "The system was designed to deliver 8,000 to 10,000 m³/day with the annual production of about 3.1 million m³ (UHL& Associates 2012)." The water is extracted from a network of 13

boreholes at Geed-Deeble water field and pumped through two twin underground 300mm diameter pipelines over a 20km distance and at a 260m elevation to in-ground storage tanks overlooking the city (UNHABITAT-HUWSUP 2014). The water supply infrastructure was badly damaged during the civil war in the late 1980's, and has gone through several rehabilitation works over the years. Despite this the pipelines, as well as critical components of the water production and transmission system, are outdated and at risk of failure due to a lack of maintenance (UHL& Associates 2012).

Demand and access to water in Hargeisa

Despite donor-supported investments through small scale projects in last two decades, HWA remains unable to fully meet an estimated demand of 16,000 - 20,000 m³ per day and only 35% of Hargeisa as population have some sort of piped water supply access, this includes the 10% of the population who rely on water from kiosks supplied by HWA (see Photographs 1 & 2). Additionally, the Corporate Governance Advisory Services inception report (EY/WSP, 2014) stated that at in April 2014, there were 28,676 active and metered water connections with an annual consumption of about 2.5 million m³. Somaliland Development Fund reports show that 65% of the estimated one million people in Hargeisa currently rely on water trucked by privately owned tankers, who fetch the water from unprotected and poorly maintained water sources around Hargeisa including hand dug open shallow wells in seasonal river beds of the neighboring small towns and villages mostly in the East and West of Hargeisa (SDF 2014). Moreover, “the current water production of HWA is 47% below the WHO international standards of demand level at minimum urban consumption level of 35 liters per day per capita/person (UNICEF 2012A)”

Njiru, C (2005), points out that most African water utilities are facing enormous challenges in meeting the water needs of growing urban populations, many of which are poor and living in informal and unplanned settlements. Additionally, because of the high price of trucked water the poorest families in Hargeisa spend almost 5 times more on water than others who have access to mains (SIDA 2014). According to the current tariff chart of HWA, families with piped household connections pay \$1.50 per 1 m³ to HWA and the average low-income family without piped water connections pays \$7.5/ 1m³ to the private vendors.

The paper posits that patterns of current urban water supply in Hargeisa are inequitable, and that the existing water supply is not fairly distributed around city's residents. In Hargeisa there are 9 informal settlements known as Internal Displaced People (IDPs) Settlements with an estimated population of above 70,000. The HWA piped water supply distribution network, does not cover the IDPs settlements (UNICEF 2012B), and furthermore, the existing 400 water kiosks which were aimed at serving the poor are not appropriate to serve them due to the location of the kiosks; more than 50% of the kiosks are located where there are piped water connections in economically well-off areas of the city. The kiosks are also poorly designed and exposed to hygiene hazards. There is no pro-poor water supply delivery policies or regulations that protect the right of poor people to access equitable and affordable safe to drink water.



Photograph 1. A donkey cart vendor at water kiosk

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Photograph 2. A girl fetching water from a kiosk

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Overview of Hargeisa Water Agency (HWA) institutional performance

HWA is mandated to equitably supply safe and reliable water to all Hargeisa citizens. HWA has a workforce of 360 employees headed by a Chief Executive Office appointed by the president of Somaliland (UN-Habitat-HUWSUP 2014).

The EY/WSP Cooperate Governance Advisory Services inception report 2014 that HWA institutional structure consists of 5 main Departments at Head Quarters and two water production departments located in field offices (Geed-deeble & Biyo-khadar), the HQ departments are technical, commercial, planning and development, finance and human resources. HWA is currently facing huge challenges in meeting the water supply needs of rapidly growing Hargeisa and the current revenues are insufficient to cover operating costs let alone to expand service coverage and the capital maintenance costs of the water system, moreover, “the current fuel expenditure of water pump plant constitutes 50% of the HWA annual budget (EY/WSP 2014)”.

The SWOT analysis below and the basic performance indicators, highlight some of the challenges:- refer tables1&2. The SWOT analysis was undertaken in a half-day workshop at HWA; participants were HWA department heads and the author (Farah, K) who is a local consultant from Horn AquaTech (HAT). The participants of key informant interviews were the senior and the middle managers of HWA and selected individuals from the water sector in Somaliland.

Table 1. Basic performance indicators of HWA Feb. 2015		
Description	Unit	Indicator
Water Production	m3/month	280,000 m3/Month
Monthly billing	US dollar	292,470.00
Monthly Revenue Collection	US dollar	280,057.00
Unaccounted Water	%	20% (illegal water use and leakage)
Population served	Thousand	350,000 (35% of the total population of city)
Source: HWA Admin/finance billing data Feb 2015		

The key informants’ interview results demonstrated that most of the departmental heads were not fully and practically involved in the initial stages of current donor funded projects of upgrading Hargeisa water supply, therefore, there will be anticipated challenges of effectively managing the project’s outcome. In the FGDs of this study the head of the planning department highlighted that there is a clear master plan for the improvement of Hargeisa water supply and for this large scale investment, he raised valid concerns in that HWA never had an asset management system, and he stressed that the current values of all assets and their identification is unknown. Poor customer care, inadequate information management systems, poor management procedures, and insufficient skills of medium managerial staff were also observed during the study.

The Water Operators Partnerships-Africa Utility Performance Assessment report done by World Bank/WSP & UN-Habitat in 2009 emphasized that many of the challenges that urban water utilities faces are as a result of poor utility management practices, and the lack of a commercially oriented culture to drive performance improvements.

This paper therefore proposes that the main challenges that will be faced beyond the current Hargeisa urban water supply infrastructure-upgrading project will be the impact that the weak institutional capacity has on the ability to manage sustainable water supply services. Through reviewing documents and FGDs notes of this study, it has been learned that the sustainability of urban water supply goes beyond physical engineering and manipulation of water flows. Therefore, holistic urban water supply management is an important prerequisite for cities to have sustainable, reliable, and fair access to safe drinking water. Given this, HWA will be required to adopt robust plans and strategic actions to improve operational efficiency and reduce the service gap. Follow up discussions with HWA CEO and WSP confirmed that institutional strengthening is the core purpose of the Corporate Governance Advisory Services project and that the highlighted in this section of the paper will be systematically addressed.

Table 2. HWA institutional SWOT analysis 2015	
Strengths	Weakness
Committed to increase coverage	Inadequate terms of performances
Willingness to improve customer services	Inadequate production capacity
Effective financial management	High level of illegal connections and leakage
Monopoly of service delivery	Weak management procedures & systems
Experienced, dedicated staff	Frequent breakdown of infrastructure
Commercial oriented agency	Poor asset management
Opportunities	Threats
Much room for improvement in the utilities performance	High poverty levels among the costumers
Donor willing to finance water supply upgrading	Asked to serve new informal settlements
Ongoing water supply upgrading	High unwillingness of customers to pay for water
5-7% population increase, hence service expansion opportunities	Lack of incentives for managers and staff to make improvements
Large economically well-off customers e.g. Industries	Lack of effective governance
Ongoing Staff capacity building	Uncertainty of the organizational autonomy (legal implications)

The Hargeisa water supply improvement investment

The Somaliland National Development Plan (2012-16) pillar on Infrastructure prioritizes support to the HWA to increase water production, pumping and transmission lines, and for the expansion of the distribution network, the plan was presented to International Organisations for funding (MOP 2011). International aid and investment involved in the Somaliland WASH sector has been primarily a humanitarian operation, however increasingly over the last 8 years focus has shifted towards long-term development projects. The current financial investment for improving Hargeisa water supply is about 53.2 million Euros, committed funds are from the European Union (16.5 million Euro) for the upgrading of water supply infrastructure, from the SDF 1,76 million dollars for the drilling of three new boreholes in and the expansion of the water supply work from Haraf to Ayah settlement, the WSP half a million dollars capacity building support to HWA and the World Banks urban development project for improving Hargeisa urban infrastructure including upgrading drainage and solid waste management facilities (SDF, HWA 2014 & HUWSUP 2014).

The German government-owned development bank (KfW/GIZ) recently announced 15 million Euros of funding for the urban water supply distribution networking of Hargeisa city.

The KfW/GIZ and World Bank funds will support follow on phases of the Hargeisa Urban Water Supply Upgrading Project implemented by UN-Habitat, in partnership with the HWA the Somaliland Ministry of Water Resources. The project, which was launched January 2014, aimed to:

- Replace the pipeline system from the Geed-Deeble well fields to Hargeisa with a new high-capacity single transmission main, thus bringing more water into the municipal system, see Figure 1.
- Construction of new and fuel efficient pumping station at Geed-Deeble to improve the regularity of pumped water to the city reservoirs in the north of Hargeisa.
- Replace old and damaged/ deteriorated boreholes and drill new ones to enhance water production from the Geed-Deeble well fields. (UN-Habitat-HUWSUP 2014).

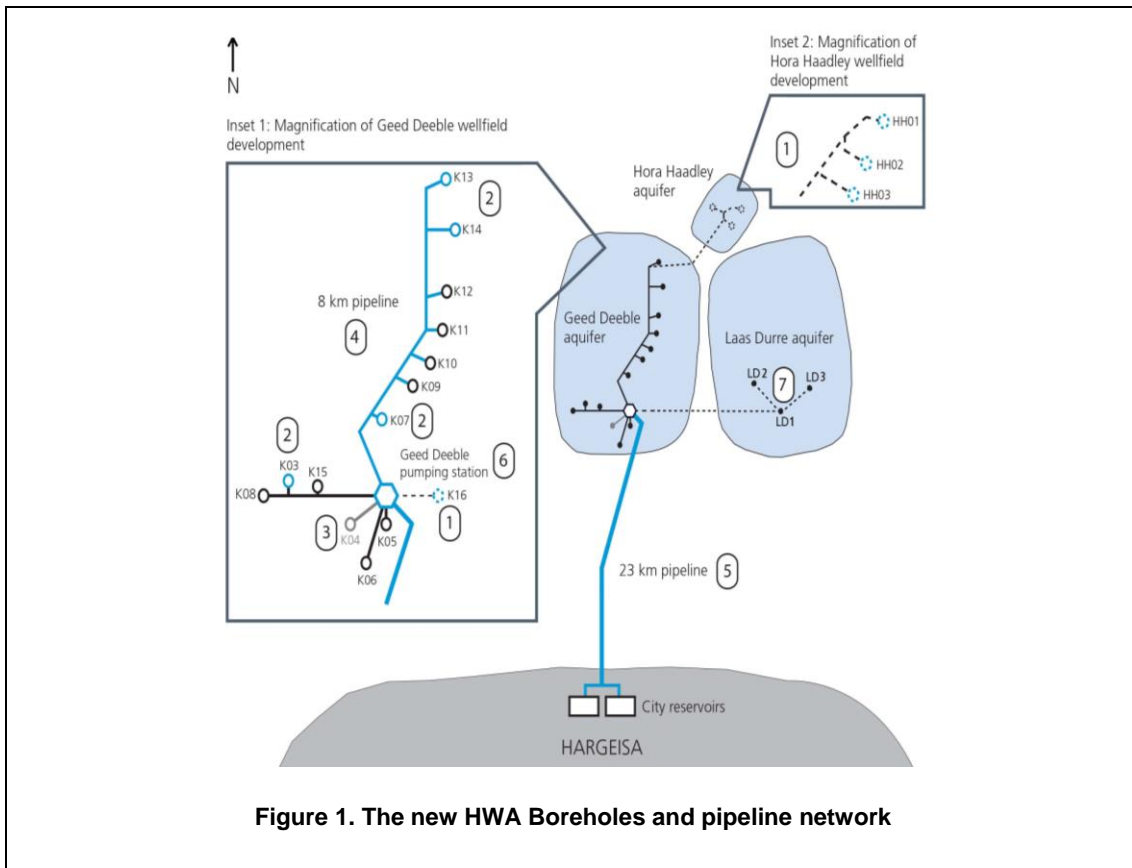


Figure 1. The new HWA Boreholes and pipeline network

Sustaining water supply beyond the projects

There are many inter-related reasons why the achievement of sustainability poses a challenge to the water utilities beyond projects. “The first challenge is the limited capacity (in the sense of knowledge, skills and material resources) of utilities to manage systems. The second challenge is the inadequacy of financial revenues to cover the full operation, maintenance and capital maintenance costs of infrastructure, and the third relates to the historical approach to service delivery of different actors in the WASH sector, including the nature of the institution delivering the services (WATERAID 2011)”. Thus, HWA requires comprehensive institutional strengthening and capacity development for delivering sustainable water. Therefore, HWA is currently being helped in these areas by WSPs fragile and conflict-affected states team.

In March 2014, WSP contracted EY to provide corporate governance advisory support aimed at institutional strengthening and capacity building of HWA. Support has included providing advice on options for corporate governance structures, and technical assistance to support the implementation selected corporate governance structure and policies, developing model human resource procedures, developing model financial and procurement management policies, providing technical assistance to support the implementation of HR and financial management policies and carrying out a study on pro-poor service delivery models. The inception Report 2014 of the Corporate Governance Advisory project highlighted that the project will help HWA to manage the improved water supply by strengthening the ability to both deliver and sustain water supply services in Hargeisa and lessons learned to be passed to other water and sanitation utilities across Somaliland. The first phase of the project was in completion stage at the time of this study. Additionally, the second phase of the project will be a training program to upgrade HWA’s capacity to implement its corporate governance policies and mentor others. This project utilized a mixture of capacity building tools which included training workshops, group discussions, short courses, exposure visits for practical learning to other water utilities in Africa (EY/WSP, 2014).

Lessons learned

- Lack of baseline data about informal settlements and government poor coordination service delivery was one of the main reasons for HWA failing to extend water supply service to informal settlements.
- Top manager's commitment was very critical for successful implementation of projects/improvement plans.
- Most of the on-going water supply infrastructure and HWA institutional capacity building projects are implemented by the international partners due to their management capacity, transparency, accountability and impartiality which ensures conflict of interest is avoided.
- Providing sustainable water supply service delivery in Hargeisa required institutional reform and capacity building to HWA.

Conclusion

Somaliland state fragility and poor service delivery was linked with the impact that the 1980s conflict had on Hargeisa infrastructure, including the water supply system. HWA was unable to meet the water supply demand of Hargeisas' rapidly growing population. A study on Sector Functional Assessments within Education, Health and WASH in Somaliland by UNICEF emphasized that although there is an availability of water resources, a lack or inadequacy of infrastructure facilities exists, this is associated with weak managerial, financial, and human resources which are key necessities to extend reliable and safe services to the population UNICEF (2012A). Additionally, the study of this paper had also noted that an inefficiencies water supply management, institutional deficiencies, and poor water supply infrastructure are the major causes of poor access to water services in Hargeisa.

After years of water scarcity in Hargeisa, international development partners EU, World Bank/WSP, SDF and KfW/GIZ have invested range of projects to upgrade Hargeisa water supply system, through infrastructure development and capacity building of HWA and key stakeholders. The main infrastructure project is HUWSUP, the project will replace the existing deteriorated twin-transmission main that runs from the principal well field at Geed-Deeble to Hargeisa with a high-capacity, single pipeline. Rehabilitating old damaged boreholes and drilling new 6 boreholes, will increase the water supply by a minimum of 3.5 million liters per day, and construction of new pumping and booster facilities will replace old and worn equipment with modern cost effective technology. The upgraded water supply system of HWA will noticeably increase the capacity of water production from 9 million to 20 million liters a day – a 122% increase on the present capacity, and which will meet the current demand of Hargeisa (UN-Habitat-HUWSUP 2014). In addition the on-going HWA institutional reform, production of O&M manuals and the staff capacity building is expected to help HWA improve its operation and management efficiency to deliver reliable, equitable and safe drinking water supply service to all Hargeisa citizens.

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Note

Hargeisa is the Capital city of Somaliland, a self-declared republic since the collapse of Somalia government in 1991 after a decade of armed conflict.

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