CONVERGING INTENTIONS, DIVERGING REALITIES:
Rights vs. Growth-Based Approaches to Safe Sanitation Provision
in Addis Ababa, Ethiopia

by

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ABSTRACT

Although we are now well into the twenty first century, the possibility of achieving equitable, universal access to water and sanitation is still out of reach for most cities. According to a progress report by the WHO/UNICEF Joint Monitoring Program, in 2015, 844 million people lacked even the most basic access to safe drinking water (WHO/UNICEF, 2017). The case for sanitation is even more dire, as about 2.3 billion people have no access to the most basic sanitation service (WHO/UNICEF, 2017). Moreover, an estimated 1.5 million children under the age of five die each year as a result of water and sanitation related diseases.

This harsh reality is consistently reflected in Addis Ababa, Ethiopia, where much like many other cities in the global south, water shutoffs are a norm and access to safe sanitation services is unfortunately minimal. Caught between the influences of the normative recognition of water and sanitation as a right and a national development agenda that sees Addis Ababa as the driver for economic progress, the city’s utility is struggling to provide adequate access to its inhabitants. This thesis uses the Addis Ababa Water and Sewerage Authority’s recent, ambitious plan to transition Addis on to the country’s first sewage grid as a sight for investigating how these influences play out on the ground and understand how residents are being serviced or excluded from accessing safe sanitation services. Drawing on multiple interviews, close readings of policy documents, and physical analysis of the distribution of services, I conclude that both normative and growth-centric approaches fail to reach their goals of achieving equitable, universal access to safe sanitation services for the city’s residents. This is in large part because these approaches are not adequately responding to the realities of Addis Ababa, which is as much a city of informality and poverty as it is the capital of Africa’s fastest growing economy.

Thesis Supervisor: Gabriella Carolini
Title: Assistant Professor of International Development and Urban Planning
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Although we are now well into the twenty first century, the possibility of achieving equitable, universal access to water and sanitation is still out of reach for most cities. According to a progress report by the WHO/UNICEF Joint Monitoring Program, in 2015, 844 million people lacked even the most basic access to safe drinking water (WHO/UNICEF, 2017). The case for sanitation is even more dire, as about 2.3 billion people have no access to the most basic sanitation service (WHO/UNICEF, 2017). Moreover, an estimated 1.5 million children under the age of five die each year as a result of water and sanitation related diseases.

This harsh reality is consistently reflected in Addis Ababa, Ethiopia, where much like many other cities in the global south, water shutoffs are a norm and access to safe sanitation services is unfortunately minimal. Caught between the influences of the normative recognition of water and sanitation as a right and a national development agenda that sees Addis Ababa as the driver for economic progress, the city’s utility is struggling to provide adequate access to its inhabitants. This thesis uses the Addis Ababa Water and Sewerage Authority’s recent, ambitious plan to transition Addis on to the country’s first sewage grid as a sight for investigating how these influences play out on the ground and understand how residents are being serviced or excluded from accessing safe sanitation services.

The question for this thesis was partially inspired by an interview I conducted with a high level official and his colleague from the Addis Ababa Water and Sewerage Authority (AAWSA) in the summer of 2016 as part of an MIT sponsored research project on the UNHABITAT sponsored Water Operator Partnership program. At the time, the two professionals from AAWSA informed me of the Authority’s grand plan to become one of the Africa’s top five service providers by 2020 (AAWSA , 2015). When I raised the subject of expanding access to low income communities and informal households, one of my interviewees mentioned that because AAWSA acknowledges water as a right, the authority provides access to untenured communities and those who cannot afford a connection to the city’s water line through pay-per-service public fountains. He added, as an informal side note, “you should not be worried about informal communities too much though, they will, after all, be gone in two to three years” (Interview 1, 2016). While one employee’s opinions and biases do not necessarily reflect AAWSA’s values, this comment still highlights the importance of how priorities in setting the agenda for service provision determine how service provision is implemented on ground.
1.1 Why Addis Ababa?

Addis Ababa’s ability to provide basic services is put under tremendous pressure by a construction boom that requires many resources on the one hand and a rapidly increasing population demanding adequate access to their basic rights on the other. As the construction of commercial high-rises and large single family homes redefines the city’s skyline, many are being displaced by the city’s urban renewal agenda and its construction boom. Despite receiving varying forms of compensation, it is now common to see households either settling in informal homes or being displaced multiple times over across the city (UNHABITAT, 2017; Yintso, 2008). At the same time, the city’s population is also growing at a 3.8% rate according to the Ethiopian Central Statistics Agency. Although the CSA estimates the city’s population to be about 3.9 million, others like the World Bank estimate it to be around five million (CSA, 2017; World Bank & GFDRR, 2015). The city’s population is estimated to double itself to reach close to 10 million by 2037 (World Bank & GFDRR, 2015). As before, the ever continuing urban rural migration is increasing the number of people residing in informally constructed and untenured homes in the city’s peripheries (HABITAT, 2017).

It is in this context of rapid construction, development and continued urban-rural migration that the Addis Ababa Water and Sewerage Authority struggles to provide basic services to the city’s residents. The Authority prides itself on providing universal access to water to the city’s residents through water lines and public fountains (Interviewee 1, 2016). Unfortunately, in this case, universal access does equate universal availability of water. Due to water resource constraints exasperated by climatic factors, constant electricity cuts that interfere with water pumps and a 33% rate of non-revenue water, the city’s residents connected to the Authority’s water lines receive access through shifts (Interviewee 6, 2018; AAWSA, 2015). This reality leaves some households without water for weeks. Furthermore, an estimated 37% of the households do not have access to the city’s water line, and can only access water through public water fountains. The status of sanitation provision is even worse for the city’s residents. According to a 2011 WASH inventory, an estimated 92.34% of the city has some form of access to a toilet facility (Defere, E and Yemaneh, H, 2011). However, 44% of households use unimproved pit latrines and only 20-30% of the city’s residents have access to safe wastewater collection and treatment, either through centralized sewerage line or vacuum trucks (Birhane, 2017).

A significant part of Addis Ababa has no access to any services, especially to safe and hygienic sanitation services. These households are usually informal and fail to provide proof of legitimate tenure, live in highly dense settlements that cannot be accessed by AAWSA’s vacuum trucks or are too poor to afford connection services. Most residents thus rely on themselves to gain access to these services. Some dig unimproved pit latrines in their homes and empty them illegally and unsafely onto the city streets. Others build pit toilets in empty land they find around their
residences, abandoning them to dig new ones when they fill up (Interviewee 9, 2017). 70% of the city’s residents currently do not have access to safe waste collection services and dump their untreated waste on to the city’s streets and nearby streams, leading to the growing pollution of the Akaki River (Van Rooijen, D., & Gebre, G, 2009). Small scale vegetable farms within the city depend on the increasingly polluted Akaki River and groundwater reserves to produce about 60% of the vegetables sold in the city (Van Rooijen, D., & Gebre, G, 2009). As a result of this insufficient provision of hygienic services, Addis Ababa has constantly been affected by the outbreak of waterborne diseases such as Cholera and Acute Watery Diarrhea. In June of 2016, such an outbreak claimed the lives of 12 residents (as reported, though the number is estimated to be higher) and affected the livelihoods of many across the city.1

Thus, in a city like Addis Ababa that has limited access to services and where informality and poverty are as much a reality as rapid construction and economic growth, the prioritization of objectives when providing basic services has deep implications for marginalized and informal communities. It is given this background that a casual comment by a government official incited an investigation into why Addis is falling behind in sanitation service provision and resulted in this thesis project.

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1.2 Methodology

In this thesis, I do a comparative analysis between what I interpret to be an efficiency centric approach taken by AAWSA to increase access to sanitation services and the normative approaches the authority is taking to ensure equitable and universal access to residents. I use the Addis Ababa Water and Sewerage Authority’s ambitious plan to put 76% of the city on the country’s only sewerage grid system and expand the city’s wastewater treatment capacity as my main site of investigation. I do this because the investment in this infrastructure is one of the manifestations of the country’s aim for efficiently increasing universal access to basic services. Additionally, in my research I have found this sewerage grid to be seen as a symbol of modernity and a platform for fulfilling the Addis Ababa Water and Sewerage Authority’s ambition for becoming one of the top five service providers in Africa, the Addis Ababa City Administration’s aspiration of being a contender with other middle-income cities on the African continent and the Ethiopia’s overall goal for eradicating poverty (Interviewee 1, 2016; AAWSA, 2015; National Planning Commission, 2016). Moreover, the expansion of the grid and the city’s ability to safely treat wastewater is also an environmental protection strategy and aims to mitigate the pollution of the city’s rivers in line with achieving resident’s constitutional right to live in a healthy environment (AAWSA, 2015). Lastly, as this infrastructure project is financed by a large loan from the World Bank, it is also

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1 https://reliefweb.int/disaster/ep-2016-000143-eth, accessed March, 2018
working under a set of conditionalities such as cost recovery and equitable distribution, which in turn has an effect other forms of providing access to sanitation that AAWSA is engaging in.

Although this grid is a focal point for the analysis of this thesis, my investigation will also look into what I categorize as AAWSA’s normative intervention for increasing access to safe sanitation. This interventions is the Authority’ plan to expand access to affordable communal and public toilet facilities across the city. Finally, this thesis will also rope in AAWSA’s approach to increasing the provision of water to residents who cannot access the city’s water lines due to tenure or affordability restrictions, as the sewerage grids by nature unequivocally dependent on having secure access to water.

I use a rights vs. growth based framework to conduct this analysis because I have found there to be a dichotomous relationship between the two approaches in the city’s water and sanitation provision strategies. For instance, according to a World Bank document that details the conditions of the loan AAWSA is taking on to finance the expansion of the sewerage grid, public toilet projects are depicted as interventions aimed at ensuring equitable access to the residents of the city that will not be able served by the grid (World Bank, 2017). These influences are also byproducts of Ethiopia’s recognition of water and sanitation as a right both constitutionally and in the international arena on the one hand, and the country’s ambitious Growth and Transformation Plan, which has set the goal for reaching middle-income status by 2025 partially through efficient infrastructural expansion (National Planning Commission, 2016). As I will explain in the first chapter of this thesis, both these frameworks aim to achieve universal access to water and sanitation for the citizens of Ethiopia and influence the strategies for provision of these services at a local level, including in Addis Ababa.

1.3 Data Collection Method, Limitations and Challenges

The research for this thesis began in the Summer of 2016 as part of a project with Professor Gabriella Carolini from MIT’s Department of Urban Studies and Planning. The project focused around understanding the impact of UNHABITAT’s Water Operator Partnerships (WOP) and the impact they are having on improving access to basic services in developing cities such as Addis Ababa. At the time, I was tasked with interviewing officials from the Addis Ababa Water and Sewerage Authority about the status of provision in the city, the inner workings of the department, challenges and opportunities they have identified and lastly, how the WOP that they were a part of was influencing their ability to increase service provision.

This first set of interviews I conducted, which also includes the one mentioned in the beginning of this chapter, were an introduction to the difficult experiences I had over the last couple of years in my attempts to gather enough information about Addis Ababa’s sanitation ecosystem. The first,
and most defining, part of this experience was my initial attempt to contact a high level official who was listed as the person of contact for AAWSA on the UNHabitat Global Water Operator Partnerships Alliance (GWOPA) website. Because AAWSA did not have a live website at the time, this was the only contact I was able to acquire. I thus emailed the official multiple times, but did not receive any answers from him. Thus, armed with an introduction letter that Professor Carolini had written for me, I went to AAWSA’s Head Office to find him and conduct my interview. I went from office to office asking for him, but no one seemed to know who he is, or want to give me more information about where I can find him. I later found out from someone who works as a cashier in the finance department that this official had unfortunately passed away a couple of years back and was now replaced by someone new. I found the fact that this information was not updated on the GWOPA website interesting, especially since the official I was seeking out was the Authority’s General Manager and an important point of contact. This was not the only hindrance that I faced during that summer. Although I began seeking interviews in the beginning of June, I was not able to conduct any interviews until the beginning of August, three days before I was supposed to leave Addis Ababa. Between June and August, I was traveling between the Head office and the Project Office of the Addis Ababa Water and Sewage Authority, chasing after contacts who were no longer available, making appointments to make other appointments, and mostly waiting outside offices to get a piece of information.

This level of misinformation and delays continued throughout the two other visits I made to Addis Ababa in the Summer of 2017 and January 2018 to gather further data and information for this thesis. It had thus been a challenging task for me to put together the puzzle of the interventions AAWSA has been making to fulfil its mandate of providing adequate services to the city’s residents. One reason for the challenges I faced is the fact that it is only in the last couple of months that AAWSA’s official website has actually gone live. During the time that I was conducting my fieldwork, there has been little publically available data on even the most common information about water and sanitation services in the city. A second reason is the reluctance that the more accessible, lower-level officials had to provide information to people they did not know or trust without the approval of a high level official. I anticipate that this reluctance stems from the lack of official processes for providing information and responding to data requests from outside entities, which is not just limited to AAWSA. Although some of the people that I was able to interview felt the need to be more transparent with information, especially for those pursuing academic research, data requests in most of Addis Ababa’s municipal offices are still viewed as suspicious, and need to be directed by someone who is willing to take the risk of potential downfalls that may come from sharing information. On the other hand, high level officials are usually not available, even for signing a memo that grants permission for lower-level officials to give out interviews and data, making the whole process a long and drawn out on. There is also misinformation within the Authority, which I have encountered when I had been directed to getting information from officials.
who did not have access to the data I needed or knew of the projects that I was investigating, prompting me to start my request process again.

Another issue that I have faced while trying to conduct my fieldwork was the quality of the information I was receiving from the Authority, which is influenced partially by the fact that I was conducting this research while being based thousands of miles away from the city. For instance, there have been times when the officials I interviewed gave me little time, limiting the amount of follow up questions that I was able to ask. Some told me to return for more details, but were usually too busy to respond again to my requests. There have thus been times when I had to leave the country with more questions than I had coming in. Another influence on the quality of the data that I gathered was the fact that some officials were not aware of the details of the information they were giving me, which has caused some misinformation in my initial analysis. For instance, in a conversation with an official from the Authority’s water control division, I was informed of a significant tariff increase that had been instituted for insuring cost recovery of the aforementioned infrastructural project. However, when I called one of AAWSA’s customer service line to re-confirm this information, I was informed that such an increase was not instituted. There was also an instance when an official who provided the map of the existing and proposed sewage lines that makes up a crux of this thesis’ analysis was not able to provide me with an adequate explanation of the details of the data he was giving me. Finally, there is also the issue with data unavailability, which has limited the level of analysis I would have been able to undertake during this project. For instance, the analysis of this thesis would have benefited greatly from being able to use geocoded information of public water fountains, which would have been a perfect proxy for spatially representing the city’s informal communities. It would also have been extremely helpful to have received the feasibility studies conducted before the decision was made to go forth with the sewerage grid expansion project, which would have added to my understanding of the initial intentions AAWSA had when undertaking this infrastructure project.

All in all, the information presented in this thesis is collected through six semi-structured interviews conducted with officials from AAWSA, one interview with an official from the Addis Ababa City Administration, two heads of households from the city’s Kore neighborhood, and two managers of AAWSA’s public toilet facilities. I also use spatial data that I gained from AAWSA and satellite imagery in conjecture with multiple reports released on the water and sanitation provision status of the city. Additionally, I use a close reading of the country’s constitution, Ethiopia’s two Growth and Transformation Plans, World Bank loan documents and AAWSA’s annual reports as my sources.

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1.4 Chapter Breakdown

The second chapter of this thesis begins by describing why it is relevant to use a rights vs. growth framework in assessing the effectiveness of service provision and describes in detail Ethiopia’s economic development policies and the country’s recognition of water and sanitation as a right. This chapter will also explain how the country’s obligations and policies influence water and sanitation provision strategies in Addis Ababa. The third chapter will describe the Addis Ababa Water and Sewerage Authority’s mandate, financial standing and internal structure. It will also detail the strategies that AWWSA has devised to increase access to sanitation services for the city’s residents. The fourth chapter will analyze how the implementation of the aforementioned strategies plays out on ground to expand and/or limit access to safe sanitation services. I will conduct this analysis through two methods. The first type of analysis will place both the sewerage grid in the physical, economic and demographic context of Addis Ababa, to give perspective on how these plans include or exclude residents from increased access. This method will also analyze how AWWSAs requirements for accessing the sewerage grid in particular contribute to deciding who gains access. Secondly, I will assess the shared facility provision that AWWSA is using as a way to reach residents who might not be able to access the grid, to see how effective they are in expanding safe sanitation service. The fifth chapter will be a reflection on the findings from the third chapter and will provide recommendations for a way forward that centers equity in the city’s water and sanitation provision. In this chapter, I will reflect on how the prioritization urban centers like Addis Ababa as the country’s engine of economic development actually forces citizens to be further isolated from their recognized right to basic services and fall further into marginality.

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CHAPTER II
INFLUENCES ON WATER AND SANITATION PROVISION IN ADDIS ABABA

2.1 The Relevance of using a Rights vs. Growth Based Approaches in Understanding Water and Sanitation Service Provision Strategies

The human right to both safe drinking water and sanitation was explicitly recognized in 2010 by the United Nations’ General Assembly and the Human Rights Council (G.A. Res. 64/292, U.N. Doc. A/RES/64/292 (Aug. 3, 2010); Human Rights Council Res. 15/9, U.N. Doc. A/HRC/RES/15/9 (Oct. 6, 2010). The resolution rested on the recognition that achieving universal access to water and sanitation were integral to the fulfilling all human rights and maintaining people’s dignity. This official recognition was also seen as a vehicle for putting pressure on governments to translate the rights into specific national and international obligations that equitably and adequately addressed the pressing needs for better access to water and sanitation (Gleick, 1999). Additionally, the resolution was a validation of decades of fights by communities across the globe for equitable and just access, and it enabled them to bring attention to perceived inequalities and injustices that kept them from these services (Murthy, 2013).

Before the 2010 resolution, the need for rights-based approaches to equitable provision of water and sanitation services had been alluded to in many international covenants and declarations that have supported the right to a dignified and humane life. 2 Throughout the decades of discussion over these two rights, the recognition of water as an economic good with economic values was also pushed, creating an efficiency-centric discourse along with the equity-centric one. This recognition was specifically cemented at International Conference of Water and Environment in 1992 through the Dublin Principles, whose fourth key point stated that “water has an economic value in all its competing uses and should be recognized as an economic good” (The Dublin Statement on Water and Sustainable Development, 1992.) Linking the lack of recognition of water as a right to past wasteful and environmentally degrading uses, the fourth principle called for the need to manage water as an economic good to achieve both efficient and equitable distribution. In other words, the principle suggested that if people were priced correctly, then water would be used more sustainably (Murthy, 2013).

This controversial principle, in conjecture with neoliberal policies advocated for by multilaterals such as the World Bank and IMF, subsequently added to the prominence of service provision strategies that encouraged economic and environmental efficiency as much as they

2 the Convection of the Rights of the Child, the Declaration on the Right to Development, International Covenant on Economic, Social and Cultural Rights, Agenda 21 and more
sought equity (Murthy, 2013; Marson & Savin, 2015). Thus, as urbanization, population increase, industrial development and environmental degradation began to put stress on water resources, utilities across the globe began to feel the need to improve the economic pricing of water as a way to minimize wastage and maintain their financial sustainability (Murthy, 2013). In the decade before the international recognition of a normative approach, privatization, cost control and cost recovery in water and sanitation infrastructure development began to be centric to achieving this desired efficiency (Marson & Savin, 2015).

This approach was heavily criticized as neglecting social benchmarks and decreasing access for those who cannot afford to pay for the full cost of the service rendered to them, especially in the developing world. For instance, Banerjee and Morella (2011) found that tariffs set when capital cost recovery were set as a priority were not affordable for 60% of Sub Saharan Africa households. Furthermore, following a review of World Bank evaluations on neoliberal approach to water provision, Bayliss (2011) finds that there is little incentive for African water operators to pursue social objectives when their performance is measured in financial terms. Additionally, while assessing whether financial results are actually associated with increasing coverage in twenty five Sub-Saharan countries, Marson and Savin (2015) found that although financial results translate into corresponding coverage increases up to some level, beyond a certain threshold this trend changes to the contrary one, where better financial results are associated with lower increase in coverage or even loss of coverage”.

Thus, the 2010 resolution came at a time where the need for efficiency and cost recovery in service delivery was a dominant approach to water and sanitation advocated for and criticized by many. The eventual recognition of water and sanitation as a right brought light to the possibility of diverging from the global responses to service provision that increasingly prioritized economic efficiency and privatization (Murthy, 2013). Rather than implicitly or explicitly prioritizing efficiency, this normative approach called out for centering equity and equality in service provision and making sure the services are affordable and inclusive, even for those whose economic status prevented them from being profit-generating customers (Murthy, 2013).

As can be seen from the subsequent portions of this chapter, in the case of Ethiopia, and by extension, Addis Ababa, the normative priority of service provision and the need to efficiently to match economic development goals are granted, more or less, equal roles in national legislation. However, the above, brief description of the debates on water and sanitation provision shows us what is a priority consideration when carving out strategies for water and sanitation provision has an important role in determining who gets to access the services, and who gets excluded. Therefore, understanding why and how access is limited also rests on understanding the implicit and explicit intensions behind increasing access.
2.2 Ethiopia’s Acknowledgement of Water and Sanitation as a Right

Ethiopia abstained from voting during the 2010 deliberation to pass water and sanitation as human rights. The Ethiopian delegation of the time acknowledged water to be a “natural right”, but abstained from voting because the recognition that states have the sovereign right to their own natural resources was not explicitly mentioned in Resolution 64/292. Despite not participating in this monumental vote, the country has acknowledged citizen’s rights to water and sanitation in many forms since the current governing entity (EPRDF) came to power in the early 1990’s. In fact, EPRDF’s 1995 constitution, for the first time in the country’s history, explicitly states the rights citizens had to some basic services (Constitution of the Federal Democratic Republic of Ethiopia, 1995). Specifically, Article 90 of the Ethiopian constitution states that “to the extent the country’s resources permit, policies shall aim to provide all Ethiopians access to public health and education, clean water, housing, food and social security”. The government further cemented the right to water in 2000 through the Water Resources Management Policy, which states that every Ethiopian citizens should have access to water to satisfy their basic human needs. The policy also states that water should be used for fulfilling social and economic needs, emphasizing that domestic water supply and sanitation should have preference over all other uses.

Additionally, Ethiopia has also declared a normative approach to water and sanitation provision with a statement in 2012 during the Sanitation and Water for All (SWA) High Level Meeting in Washington D.C. The statement specified that in alignment with international conventions that view water and sanitation as a right, Ethiopia has defined and extended its pursuit of a Universal Access Plan II (UAP II)– which sought to reach 98.5% access to safe water and 100% access to sanitation by 2015 (MoWIE, 2012).

2.3 Ethiopia’s Growth and Transformation Plan

At the same time that the country has been explicitly affirming the right to basic services such as water and sanitation, Ethiopia has also set a path to eradicate poverty by maintaining a double digit economic growth rate and transitioning from being an agrarian economy to an industry and manufacturing based one (GTP II, 2015). Although EPRDF has instituted multiple macroeconomic plans, the Growth and Transformation Plan has been the most intentional and well-resourced for achieving this goal. Inspired by the Plan for Accelerated and Sustained Development to End Poverty PASDEP’s implementation process and the country’s Urban Development Policy, which frames urbanization as centric to development, the Ethiopian

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5 This was the economic plan that preceded GTP 1
government instituted the first, five year Growth and Transformation Plan I (GTP I) in 2011 (MoFED, 2010). The main vision of the GTP I was to make Ethiopia “a country where democratic rule, good-governance and social justice reigns, upon the involvement and free will of its peoples; and once extricating itself from poverty and becomes a middle-income economy” between 2020 and 2023. With the objective of sustaining broad based, fast and equitable economic growth, the GTP I also aimed to increase access to basic services in alignment with the Millennium Development Goals by expanding and ensuring the quality of infrastructure development. The plan especially stated that due to the significant role of urbanization in accelerating the country’s economic and social development, urban infrastructure including water and sanitation will be given a priority (MoFED, 2010).

Following this, the country’s Urban Water Supply Universal Access Plan and the Urban Sanitation Universal Access plan were drafted by the Ministry of Water and Energy (now the Ministry of Water, Irrigation and Electricity). These two plans provided urban centers with a pathway towards universal access to water and sanitation, or at the very least to meet target 7c of the MDGs (GTP I, 2010). Although by the time the GTP I came to an end in 2015 Ethiopia achieved the Millennium Development Goal of halving the proportion of people without access to safe drinking water, universal access was not achieved. In terms of sanitation, the percentage of people in urban areas with access to improved latrines had increased to just 27 percent from 20 percent in 1990, much lower than the Sub-Saharan Africa average of 40 percent (Birhane, 2017).

Subsequent to evaluation of the first Growth and Transformation Plan (GTP I), a second Growth and Transformation Plan (GTP II) was instituted in 2015. The GTP II aims to maintain an annual economic growth of 11.2% per year over a five-year period. In addition to reaffirming the GTP I’s attempt for increasing domestic saving and attracting foreign investment, it also reemphasizes the need for increasing infrastructure development (National Planning Commission, 2016). The GTP II also re-acknowledges the value that urban centers have in furthering the country’s development agenda and specifically prioritizes the expansion of sustainable potable water supply and improving urban sanitation. The GTP II, whose implementation period extends to 2020, aims to continue the path to universal access that the first GTP began, now in alignment with goal six of Sustainable Development Goals (National Planning Commission, 2016). Utilities in the country’s urban centers thus follow the structure set by this plan, in addition to the constitutional right to water and sanitation, to shape their own strategic approach to water and sanitation services. This structure gives the agendas of efficiency and rapid development propagated by the GTP a significant influence over local basic service delivery strategies.

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6 GTP I, 2010; target c of goal 7 aimed to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.
CHAPTER III
AAWSA AND ITS GROWTH AND TRANSFORMATION PLAN

3.1 Overview of the Addis Ababa Water and Sewerage Authority (AAWSA)

Although the first piped water service in Addis Ababa began in 1890, it was not until 1970 that the Addis Ababa Water and Sewerage Authority (AAWSA) was founded as an autonomous body for providing water and sewerage services for the city in accordance with proclamation No. 68/1963. The Authority works under the acknowledgment that water and sanitation access are rights that the city’s residents have, and takes on the responsibility for fulfilling them (Interviewee 1, 2016). Under the slogan “Water is Life!”, AAWSA thus has the mandate to develop, collect, treat, and distribute water and wastewater in Addis Ababa. AAWSA follows its own iteration of the Growth and Transformation Plan in order to fulfill this obligation (Interviewee 1, 2016). This plan forms its basis upon the aforementioned GTP II, AAWSA’s business plan, Addis Ababa City Administration’s plan for the city and multiple studies the Authority has conducted over the course of the past two decades.

The Authority has two divisions: The AAWSA Head Office and AAWSA Water Supply and Sanitation Project Office. The Head Office overlooks the operation and maintenance of the city’s water and sanitation systems through its eight branches. The Head Office is also responsible for connecting new lines and deploying the city’s vacuum waste collection trucks (Interviewee 3, 2016). The Project Office, on the other hand, is tasked with developing and constructing expansion projects. It is charged with determining the areas that require service expansion in accordance with the Growth and Transformation Plan and the city’s masterplan. The Project Office thus conducts feasibility studies, puts out tenders for identifying consultants, suppliers and contractors and oversees the implementation of expansion projects. (Interviewee 3, 2016).

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3.2 AAWSA’s Revenue Structure and Financial Standing

AAWSA’s Head Office sustains itself through the revenue it collects from selling water and providing waste collection services to residents, and is by principle meant to be self-sufficient. Despite the presence of some decentralized and illicit providers of access to such services across the city, a majority of service delivery is done through AAWSA. As can be seen from Figure 1, which depicts the water points that AAWSA administers as of 2016, the authority has a significant customer base. In fact, the Authority’s water line currently reaches 423,260 households out of the over 600,000 that the city is estimated to have.8

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7 https://aawsa.gov.et/?lang=en Accessed, April, 2018
8 https://aawsa.gov.et/?lang=en Accessed, April, 2018
As can be seen from the Figure 2, AAWSA charges its customers on an incremental basis and pegs fees to the amount of water used (Interviewee 1, 2016). The Authority also collects fees from the liquid waste collection service it provides through its vacuum trucks and from public water fountain users. Furthermore, the Authority gets a 10% cut from the fees collected by small and micro enterprises for public toilet services. Finally, it charges fees for solid waste collection, which it splits with the small and micro enterprises that provide door to door collection services.
Despite the multiple sources of revenue the Authority relies on, AAWSA's Head Office usually falls into budget deficits, limiting the amount of services it is able to provide to residents. According to AAWSA's Financial Support manager, the Head Office usually suffers from budgetary short cuts, forcing it to request supplemental funds from The Addis Ababa Finance and Economy Development Office, which it does not always receive (Interviewee 2, 2016). For instance, in FY 2016/2017 of the 840 million Birr (approximately 30.5 million USD) the Authority planned on collecting as revenue, only 82% or around 690 million was collected. When put in contrast with the 1.324 billion Birr (approximately 480 million USD) that the Authority as a whole budgeted to spend over the fiscal year, this deficit has put a strain on the Authority, forcing it to request additional funds from the city administration and pursue foreign funding through its Project Office (AAWSA, 2017).

The biggest reason for this deficiency, is that AAWSA imports most of its materials; from the treatment chemicals it uses, to the pipes it installs, right down to the water meters that are set up in each customer’s house. This is very expensive, and requires foreign currency which is currently available in limited amounts for the Authority (Interviewee 2, 2016). Additionally, the Head Office’s fee collection method is highly inefficient. According to a World Bank study, 16% of the meter readings show that connected households to be using less than 1 metric cube per month, which appears very low in comparison to utilities in other countries. Couple this with the unreliable door to door meter reading system AAWSA uses, the Head Office’s revenue potential is highly compromised (World Bank, 2017). The Head Office currently loses 33% of the water it provides to Non-Revenue Water, further decreasing its revenue potential. Furthermore, AAWSA significantly subsidizes this services it provides. For instance, the authority takes on 70% of the

<table>
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<tr>
<th>Block</th>
<th>Water use in m³/month</th>
<th>Tariff in birr / m³</th>
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<tr>
<td>1st</td>
<td>0 – 7</td>
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<td>2nd</td>
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<td>4th</td>
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<td>5th</td>
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<td>301-500</td>
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<tr>
<td>7th</td>
<td>&gt;501</td>
<td>11.60</td>
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* $1 = 33 Birr

Figure 2. AAWSA’s Tariff Breakdown
cost of emptying and transporting waste from septic tanks. Its water rates are also quite low and affordable. Unfortunately for the Authority however, the affordability of the services it provides generates little revenue. Because of this, the authority is planning to transition out of operating vacuum trucks in the foreseeable future and aims to regulate private service providers instead (Interviewee 4, 2017).

Unlike the Head Office, the Project Office is allowed to accept outside funds, and has been known to partner with foreign entities such as Vitens International – a Dutch Utility -- and the World Bank (Interviewee 3, 2016). In fact, most of the funds that the Project Office receives are from the World Bank, which has had a significant influence in the office’s project delivery through the grants and loans it provides. Aside from the capital projects that the Project Office and World Bank are involved in – which I will get into in more detail in the coming sections of this chapter—the Bank also provides financial support to AAWSA for providing access to water lines for residents identified as the city’s poorest of the poor (Interviewee 3, 2016).

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3.3. AAWSA’s Plan for Growth and Transformation in Service Provision

Between the insufficient revenue it has at its disposal and the conditionalities it has to abide by from its foreign donors, AAWSA works under a significant financial pressure. In spite of this, AAWSA still aims to increase access to the services that it provides. In order to do this, AAWSA has instituted the second round of its very own Five Year Growth and Transformation Plan in recognition of the increased demand for clean water and sanitation services that is caused by the city’s rapid urbanization and population growth (AAWSA, 2015). The plan document depicts Addis Ababa as a political, economic and social hub not just for the country but for the African continent as well, and sets the goal to make AAWSA one of the top five service providers on the continent. The mandate of this plan is to take into account the rapid growth the city is undergoing and provide the city’s residents with adequate and reliable water and sanitation services. Inspired by the growth of the city both physically and in terms of political prominence, the increase in the city’s industrial sector and other infrastructural projects planned by the city, the plan sets out to achieve the following four goals by 2020:

1. To make water provision in the city just and lasting for the city’s residents.
2. To improve the city’s modern sewerage grid and AAWSA’s ability to collect, remove and reuse waste
3. To make revenue collection more efficient and increase AAWSA’s financial capacity
4. To improve AAWSA’s capacity, eradicate rent seeking and create an efficient, productive and transparent service delivery to implement the strategies put forth by the document
AAWSA’s goals to invest resources in curbing rent seeking practices in the Authority and capacity building to make its internal workings more efficient are important and much need interventions for bettering its service delivery capacity. However, this thesis is looking at AAWSA’s provision of services and not analyzing its internal structure and workings. Thus, I will not be diving into these goals at this time. Rather, in the next section of this chapter, I will conduct an analysis of AAWSA’s second goal. As mentioned in the introduction, because of the linked nature of sewerage grids with water availability, my analysis will also eventually loop back to addressing goal one, which aims to provide just and lasting provision of water for residents.

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3.4 Goal II: Improving the City’s Modern Sewerage Grid and AAWSA’s Ability to Collect, Remove and Reuse Waste

As I have stated in the introduction of this thesis, Addis Ababa residents’ access to safe sanitation services is still very limited. As of 2015, only 10 percent of Addis had access to the city’s sewerage system, which was mostly constructed during the Italian occupation in the 1930s (Interviewee 5, 2018). Today, the main waste removal service that the Addis Ababa Water and Sewerage Authority provides for residents is through its fleet of 104 vacuum trucks it operates and 58 private ones that it regulates (Birhan, 2017). Unfortunately, only 62% of the tracks are actually functional, reducing the available number of trucks to only 101 (World Bank, 2017). For the past decade, AAWSA has substantially subsidized this service and has covered 70% the cost of emptying and transporting waste. Although the total cost for this service is about 450.00 birr (approximately 17 USD), AAWSA charges residential customers 69.00 Birr approximately 2.5 USD and non-residential ones 196.00 Birr (approximately 8.50 USD)(AAWSA, 2015). Most houses with septic tanks have a settled sewerage system, where solid part of waste is settled onsite in an inceptor tank while wastewater is allowed to flow out into rivers. This means that septic tanks do not fill up frequently, making safe sanitation virtually free for some households.

However, despite the affordability of this service, it does not serve all households in the city. This service currently reaches about twenty percent of the city’s residents. One reason for this is because the vacuum trucks are quite large and cannot penetrate some of the city’s densely packed neighborhoods. These trucks also only have the capacity to serve about 130 households and can transport 11,000 cubic meter of waste per day. Moreover, using sludge drying beds as a waste storage method is not an efficient way of providing the whole of Addis Ababa with safe wastewater collection, given that this practice requires a significant amount of land. The city’s sludge drying beds and lagoons are sized to treat about 356,000 m^3 of sludge per year. In contrast, the city produces an estimated 357,004 cubic meter of wastewater every day, making the service inadequate for meeting the city’s demand (AAWSA, 2015).
In recognition of its current inability to provide adequate and safe access to sanitation services for most of the city’s inhabitants, AAWSA has undertaken many a project to increase its service provision capacity. Of these projects, the most ambitious and costly one seeks to transfer the city’s current system from one centered around septic tanks and pit toilets to a modern sewerage grid (Interviewee 1, 2016). According to its Growth and Transformation Plan, AAWSA aims to achieve this goal by increasing connection to wastewater treatment plants from its current 10% to 50% and connecting housing units in the Integrated Housing Development Program to containerized package wastewater treatment plant, which will increase access to treatment by 26%, treating 31,000 cubic meters of wastewater per day (AAWSA, 2015). According to AAWSA’s 2015 Growth and Transformation Plan Report, that will collectively put 76% of the city onto one big grid. The project also aims to increase Addis’ daily wastewater treatment capability from its current 20,000 cubic meters to 375,932 by the given deadline through the upgrade of the Akaki Wastewater Treatment plant and the construction of two additional treatment plants. The first plant is the Kaliti Wastewater Treatment Plant, which will have the capacity to clean 100,000 cubic meters of wastewater per day, and is estimated to benefit 2 million people (AAWSA, 2015). The second plant is the Easter Wastewater Treatment Plant which will have the capacity to clean 150,000 cubic meters of wastewater (AAWSA, 2015). Both of these plants are currently under construction. The expansion of the existing Akaki Wastewater Treatment Plant into two sub divisions will have the capacity to clean 85,000 m^3 of wastewater per day (AAWSA, 2015). Compared to the city’s current estimated production of 357,004 cubic meters of wastewater per day, these improvements will significantly elevate the Authority’s ability to safely treat wastewater (AAWSA, 2015).
AAWSA plans on extending the main lines of the grid to reach within three meters of households in the city (Interviewee 5, 2018). AAWSA’s connection policy has two distinct features. Households that are within three meters of the main lines are required to connect the grid and finance the last few meters (AAWSA, 2015). On the other hand, even if households are not within proximity to the secondary lines, they can choose to request connection by going to Authority’s Head Office (Birhane, 2017). Along with their request, they must provide documentation that proves the legitimacy of their tenure, a water bill they have recently paid and must be able to pay a the connection fee, which approximately starts at 3,450 birr (150 USD) and increase depending on the household’s distance from the main line (World Bank, 2017). After paying this fee, customers are expected to pay service charges along with their water bill. However, these charges
will be subsidized by the city’s administration and AAWSA’s revenue from water earnings (Birhane, 2017). AAWSA estimates that connecting each household will take about three days.  

Anticipating the possibility that this service will not be accessed by all residents, AAWSA also plans to significantly increase the city’s public and communal toilet stock. These toilets are aimed to be constructed in densely packed areas and low income neighborhoods, to increase access to safe facilities most of the city. By 2020, AAWSA’s GTP has set out the goal to increase its current stock of fixed toilets by 500 and mobile toilets by 2200. In addition to these public toilets, AAWSA also plans on expanding its communal toilet stock by adding 300 more (AAWSA, 2015). The communal toilets are part of AAWSA’s Poorest of the Poor Safety Net Program, which, with support from the World Bank, aims to increase access to services for the city’s poorest households. The communal toilets are built at the request of households who have proof of legal tenure but are unable to afford building their own toilet facilities. AAWSA aims to connect these toilets, along with the public facilities to the sewer grid (Interviewee 3, 2016).

This plan for improvement is a part of the Second Ethiopia Urban Water Supply and Sanitation Project, and gathers its funding from the World Bank and the country’s government through funds granted to Addis Ababa City Administration (World Bank, 2017; AAWSA 2015). The Second Ethiopia Urban Water Supply and Sanitation Project is a continuation of the First Urban Water Supply and Sanitation Project (2007 -2017), both of which aimed to efficiently increase access to services in Addis Ababa and 22 other urban towns (World Bank, 2017). The project is part of a memorandum of understanding signed between the Ministry of Water, Energy and Irrigation and the World Bank, and aligns itself with the country’s Growth and Transformation Plan II’s urban and infrastructural agenda (World Bank MOU, 2017).

The budget for this project is 6.7 billion Birr (approximately 224.6 million USD) (World Bank, 2017). Specifically, $169.6 million of the budget will be supplied through an International Development Association loan from the Bank, while the government of Ethiopia will provide $60 million as a grant to AAWSA. The IDA loan will be channeled to AAWSA channeled through the Water Resources Development Fund (WRDF) in the span of six years. The term of the loans stipulates an interest rate of not more than 3% over 25 years, gives AAWSA a five year grace period before payment begins (World Bank, 2017).

The goal AAWSA has set to advance its service provision and increase access through multiple channels is ambitious and is exciting. The sheer scale of the project aims to efficiently increase access to sewerage services for a city that is growing both physically and in terms of its population. AAWSA’s recognition of the rights that people have to water and sanitation is also reflected in the plan’s strategy to reach low income communities through providing shared facilities. Additionally, the plan will significantly increase the city’s ability to treat its wastewater,

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*https://aawsa.gov.et/?lang=en Accessed, April, 2018*
which will concurrently decrease the pollution of the city’s rivers, contributing to achieving resident’s constitutional right to live in a safe and healthy environment. The plan will provide opportunities for employment through construction jobs and small scale co-ops, which will help in decreasing the city’s 21.2% unemployment rate (CSA Health and Demographic Survey, 2015). Lastly, the aim to “modernize” sanitation service delivery goes hand in hand with the image of modernity and progress that Addis Ababa seeks to embody. However, despite the many merits that can be assumed about this plan, a further investigation into how the implementation plays out on ground is essential to understand how effective it is in reaching the households of Addis Ababa, whose service, as AAWSA claims it, is the number one priority.

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CHAPTER IV

ANALYSIS

4.1 Addis Ababa and the Existing Sewerage Grid

Although Addis Ababa is the capital of one of Africa’s most recognizable countries, the city is fairly young. Addis was founded in 1889 by Emperor Minilik and his wife Empress Taytu (Pankhurst, 1961). Under Minilik and Taytu, the city grew organically around three nodes: the Imperial Palace, the Arada Market and the St. George’s church and maintained a rural characteristic for a long time (UNHABITAT, 2017). Addis Ababa continued to grow in this manner until 1935, during the rule of Ethiopia’s last king, Emperor Haile Selassie, when Italy concurred the country and occupied the capital for five years. During the five year occupation period, the Italians created a masterplan aimed at segregating Europeans from Ethiopians. They occupied the central core of the city and expelled locals out, initiating the slow expansion of the city.

![Figure 4. Addis Ababa’s Built up area in 1986, 2000, and 2010](source-atlasofurbanexpansion.org Accessed, March, 2018)

Today, this original core area covers four of the city’s ten sub-cities. As can be seen from Figure 4, this area has been consistently built up over the city’s lifespan and is the oldest and most
dense part of the city. It was during the Italian occupation that Addis’ first sewerage network was built, specifically to address sanitation needs in the Italian occupiers (Interviewee 4, 2017). The city’s original grid was thus concentrated in the core of Addis Ababa and mainly serviced the four core sub cities. As can be seen from the following sewage map, most households in the city’s core have historically had enough proximity to the sewer grid, so that they could easily connect to it if they chose to. In fact, of the 10% of the city’s households connected to the grid as of 2015, about 3% of the households are located in this area (Birhane, 2017).  

Figure 5. Addis Ababa’s Existing Sewerage Network as of 2017

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The rest 7% are connected to households part of the city’s Integrated Housing Development Project, also known informally as Condominium Houses, which I will explain in detail in a following section.
The housing units in this area were mostly constructed in the 1940’s, after Emperor Haile Selassie took back the city from the Italians and reestablished his imperial rule. During this time, much of the city’s housing stock was taken over by feudal lords, who became the majority land owners and provided rentals for migrants and those who could not afford to own homes (UNHABITAT, 2017). This form of hierarchical relation between feudal landlords and renters continued until a Marxist-Leninist military junta named Derg occupied Addis in 1974 and irradiated the imperial system. Derg nationalized most of the wealth owned by feudal lords and made land state property. The new, socialist administration also converted the houses owned by feudal landlords into affordable public housing, and branded them as Kebele Houses.  

Derg managed these homes under the Addis Ababa Administration of Rental Homes, and charged renters a monthly fee of 100 Birr (approximately 3.05 USD) (UNHABITAT, 2017). As of 2007, 142,095 of these homes, mostly concentrated in the city’s core, made up a significant part of the city’s housing stock of 628,984 units (CSA, 2007 and Tesfaye, 2007). Although most of these houses still stand today, they are in extremely dilapidated conditions because they were initially built of thatch and mud, leading them to be typecast as undesirable slums (MUDCo, 2015).

1 A Kebele was the smallest administrative unit in the city during the Derg’s and much of the current administration’s rule
In 2005, Ethiopia instituted the nationwide Urban Development Policy, which cast urbanization and industrialization as an integral part of the country’s efforts to achieve broad-based economic development (MOFEC, 2005). Following this policy, Addis Ababa embraced a five-year strategic plan covering the years 2008-2013 and introduced a Local Development Plan that focused on urban re-development and slum renewal. The renewal project, which aimed to create a modern and compact city for “effective and efficient” development, initiated the demolition of the dilapidated homes of the city’s core and the construction of the city’s Central Business District in their stead (UNHABITAT, 2017). Accordingly, from 2009-2015 a total of 23,151 households were removed from the four core sub-cities, 79% of which lived in these decapitated Kebele Houses and about 4 of the 42.45 sq km of land the covered was expropriated (UNHABITAT, 2017). It should be noted that since 2015, more land expropriation has occurred and the aforementioned number are only the tip of the ice burg. Because of the city administration’s aims to remove these Kebele Houses, the urban renewal project has and will affect tens of thousands more households.

Article 5 of Proclamation NO. 455/2005, states that inner city landholders whose land and homes are expropriated by the city ought to be provided a plot of urban land the size of which is determined by the city administration and be paid displacement compensation equivalent to the estimated annual rent of the demolished dwelling or to reside for one year in a comparable dwelling house owned by the urban administration. In the case of the aforementioned households that have been displaced, they were offered land, a unit in the city’s Integrated Housing Development Projects and were offered access to other Kebele homes. Although about 12,000 of these households were able to relocate to the condominium homes, it is often the case that residents are not able to afford the down payment and mortgage charges of these units. A studio apartment in one of the many units for instance costs about 2036 birr, which when compared with the 100 birr Kebele houses cost, is a 20 fold increase in payment (UNHABITAT, 2017). Additionally, those who are moved to Kebele homes are only there temporarily because the urban renewal project aims to demolish all of them. Those granted land compensation also do not have an easy time, as the compensation paid for reconstructing their homes is often inadequate. Addis Ababa’s efforts to recast its image as a modern metropolis has thus initiated cycles of displacement, where people are being forced to move multiple times over (UNHABITAT, 2017).

It is ironic that as AAWS pushes the expansion of sewerage grid as the solution for increasing access to the city’s residents, many communities who are being pushed out of the city’s core are losing their proximity the existing grid. This reality limits the ability of such households to acces AAWSA’s biggest investment. As can be seen from the following sections, the s high-rises and condominium buildings that are replacing these households are the ones gaining better proximity to the sewerage grid.

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4.2 The Proposed Expansion of the City Sewerage Grid and Addis’ Construction Boom

In the summer of 2015, the Addis Ababa City Administration released a new masterplan that aimed to expand the city’s boarders to accommodate its construction and population growth. The masterplan intended on incorporating rural towns that surround the city to an Addis Ababa Metropolitan Area and providing enough space to accommodate the city’s rapid urbanization. However, after rightful resistance from residents of these towns who refused to be dispossessed of their farmlands and the death of 140 protesters, this plan was scraped, confining the city’s expansion to within the 527 sq kms that it currently occupies.

Despite the spatial constrained put on to the city, it is currently undergoing a construction boom unlike anything it has experienced before. Between 2010 and 2017, 1445 high-rise buildings constructed and the permit for 783 more approved in 2017 alone. As can be seen from Figure 7, the new building are coming up in the city’s already built up parts, rather than in the vacant peripheries. In alignment with the city’s Local Development Plan and urban renewal strategy, Addis Ababa’s historically decapitated core is currently being replaced with these new, mostly commercial constructions. Since 2010, a large number of high-rises have replaced the demolished homes, with over 400 built in the four core sub cities alone. The new buildings are thus being located in parts of the city where the existing sewerage grid is more accessible, while many households are being displaced out of these areas.

12 Mapping from Satellite Imagery courtesy Carolini and Research Group; Addis Ababa City Construction Permit and Control Authority, 2017
As this underground structure begins to expand, albeit at a very slow pace due to a lack of materials and human capacity, the use of the land above it is being redefined as well. In addition to the construction in the city’s core that is increasing the proximity that high-rises are having to the existing grid, high-rise buildings elsewhere in the city will also be adequately serviced by AAWSA’s expansion plans. As can be seen from the Figure 8, the proposed extension of the sewer network lines up with the path of the city’s construction boom, making it an ideal beneficiary of the project.
Figure 8. Overlaid image of AAWSA's Proposed Grid with High-Rise buildings constructed between 2010 and 2017
4.3 The Proposed Expansion of the City Sewerage Grid and the Integrated Housing Development Projects

The other main beneficiaries of the sewerage network are residents living in the Integrated Housing and Development Project. These condominium homes were initially set as part of the effort to increase the housing stock for poor urban dwellers and core to the integrated housing and development plan (IHDP), which was started in 2006. The plan to significantly increase housing through these apartment units was inspired by post-war modernist aesthetics and aimed at maximizing space to produce a large density of housing for the country’s lower income households.

As mentioned before, AAWSA estimates that 26% of the city’s proposed grid will connect these condominium homes to waste treatment facilities. As can be seen from Figure 10, although some condominium sites will not be connected to the grid, most will benefit from its construction.
AAWSA plans to construct on site, decentralized systems to treat the waste from these unconnected sites.

Figure 10 Overlaid image of AAWSA's Proposed Grid with Integrated Housing Development Sites

The slow pace of the construction of these units, coupled with the high demand for housing in the city, has redefined the project from supplying homes for low income communities to servicing more affluent households. Those who have managed to acquire units currently use them as a form of currency and either sell or rent for more than double their assigned rate. For instance, in Jemo, one of the city’s up and coming neighborhoods, a two bedroom condominium go for as much as 1.2 million birr (approximately 46,600 USD). The owners find their own housing accommodations elsewhere, usually relying on informal housing to find shelter. Additionally, the initial approach that the city took to acquire land for the construction of these units relied on the city’s urban renewal program. This program, as mentioned earlier, has contributed to the displacement and informality of many households in the city’s core. Thus, these housing units

\[13 \text{ Betoch.com, Accessed May, 2018}\]
actually do not serve their purpose of providing adequate shelter for income restricted households.

It should thus be noted that as AAWSA services these condominium site and the city’s construction boom through the expansion of the sewerage network, it is servicing a more affluent clientele than is anticipated. AAWSA is rightly following its mandate to increase access to a basic service by connecting these units to the grid. However, as can be seen from the next section, what is concerning is that it is doing quite little to give similarly adequate services to those that are not as well off.

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4.4 The Proposed Expansion of the City Sewerage Grid and the City’s Informal Community

The urban renewal project which has come to displace many and the hike in rental prices for formal housing units due to of heightened land prices have significantly contributed to the construction of informal housing in Addis Ababa. However, Addis Ababa’s relationship with informality is much older than this phenomenon. The construction of informal homes dates back to the Derg Regime in the 1970’s (UNHABITAT, 2017). Unlike the times when feudal lords had protected their private land, Derg did not have the capacity to protect state owned land from being encroached upon by migrants. Thus, informal construction of homes began to take place, especially in the peripheries of the city. This construction was further exasperated when the current government, EPRDF, took power in 1991. In addition to migrants, decommission soldiers and workers who were fired when nationalized enterprises during Derg’s socialist regimen were privatized also constructed their homes on empty, state owned land (Demissie, 2008).

To this day, informal construction without proper land leases titles continues to occur, especially in the city’s edges. Although the city center is the most densely built up portion of the city, the Central Statistic Agency’s population projection referenced in Figure 11 show that there is significant portion of residents living in the peripheral weredas of the city. Although not all informal homes in the city have poor standards, the most common typology of informal housing is the Chereka Bet, or Moon Houses, which are literally built overnight using thatch and mud and made to specifically mimic the city’s dilapidated Kebele Houses so as to not bring attention to themselves (Heisel and Kifle, 2016). In 2007, it was estimated that over half of the city’s housing stock was informally constructed (UNHABITAT, 2007).

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14 *Weredas are the city’s smallest administrative units*
As mentioned in the preceding chapter, in order for the city’s households to gain access to either of AAWSA’s services, they must show documentation that proves the legitimacy of their tenure. In recognition of the rights that residents have to water despite their tenure status, AAWSA provides public fountains to service the city’s informal communities who are unable to meet this requirement (Interviewee 1, 2016). These water fountains are built by AAWSA upon the request of households, who have to organize and request access to them through their weredas (Interviewee 6, 2018). To date, AWWSA has 11,586 water fountains across its eight branches. The water fountains aim to service households in a 250 meter radius and are estimated to service about 1,500 people per day (Interviewee 6, 2018). Households that are dependent on public fountains for access to water pay 50 cents per 25 liters to a person charged by the community to collect payments and pay the fountain’s water bill to AAWSA (Interviewee 6, 2018).
Figure 12. Residents waiting in line to fill water their canteens from a neighborhood water fountain

In contrast to AAWSA’s incremental tariff for water lines, which charges customers 1 birr and 75 cents per metric cube, informal customers are charged 14 birr for the same amount, which is a seven fold increase in payment. This reality in itself contradicts the principle of equity that AAWSA functions under and undermines the rights based approach it claims to embody. In addition to overpaying for water, residents who access water through fountains are completely excluded from accessing the sewerage grid. This is because AAWSA requires residents provide a recent water bill along with their proof of tenure to gain connection to the grid, which they are unable to provide. The reason behind this requirement is that the authority needs some form of proof that the household connecting has a flush toilet, which it sees as a pre-requests for using the grid, which needs sufficient water to move the waste to the city’s treatment plants (Interviewee 7, 2018).

Urban-rural migration, which significantly contributes to the 3.8% population rate of the city, in addition to constant displacement of households, are guarantees that informal construction of homes will continue to subsist in the foreseeable future, despite the city’s efforts to eradicate it (UNHABITAT, 2017; CSA, 2017). Thus, it is quite concerning that AAWSA’s intervention for servicing a growing and significant portion of the city’s households is so limited and exclusionary.

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4.5 The Proposed Expansion of the City Sewerage Grid and the Burden of Cost Recovery

It is not just informal homes that are limited to connecting to the sewerage network. Due to AAWSA’s requirement of having flush toilets to access the sewerage grid, 44% of the city’s residents who only have access to unimproved pit toilets are also inherently excluded (Defere, E and Yemaneh, H, 2011; World Bank, 2017). In addition to being excluded, these households, some of which rely on AAWSA’s vacuum truck service, will actually be adversely affected by the prioritization of the grid. As AAWSA’s plans are heavily funded by World Bank loans, the authority is mandated to achieve cost recovery and repay its loan over the designated loan period. Fueled by concerns that the current revenue structure AAWSA has will not be sufficient for achieving the desired cost recovery, the Bank has explicitly suggested that a restructuring of the authority’s tariff structure is warranted.

If AAWSA is to follow this structure, it will be forced to double its water rates and at the same time reduce its subsidy for the vacuum truck service and charge residents four times as much as it does now. When asked for comments on this, an official from AAWSA said that this due to the need for cost recovery, the Authority has more than quadrupled the water tariff and increased the price of the vacuum truck service from 176 Birr to 500 Birr (Interviewee 6, 2018). Further confirmation showed that the tariff increase was actually not instituted, and that there cost for the vacuum truck service was increased to 300 Birr instead of 500. Although the increase in service fees has not reached the level prescribed by the World Bank yet, the chances of it happening are likely. This places the burden of cost recovery on the very households that are excluded from accessing the grid, making the infrastructure biased towards the 13% of the city’s households and the commercial customers who have access to flush toilets. This bias, in addition to the others I have stated before hand, ends up putting the city’s construction boom as the main beneficiary of this grid and exclude informal and low income communities from connecting to it.

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4.6 Analysis of AAWSA’s Alternative Options for Expanding Access

In addition to increasing the city’s connectivity to a sewage grid and modern wastewater treatment plants, AAWSA also has two distinct projects for expanding access; its Public Rest-stop and Restroom Project and the Poorest of the Poor Safety Net Program. These projects specifically target low income areas in the city and are what I interpret to be AAWSA’s normative strategy for reaching those who cannot access the grid for the multitude of reasons mentioned before.
4.6.1 AAWSA’s Public Rest-stop and Restroom Project

Addis Ababa currently has 194 public toilets, of which 94 are fixed and 100 are mobile, built so as to be easily removed and reconstructed elsewhere, if the land they occupy is needed for more urgent development projects (Interviewee 4, 2017). In recognition of the negative bias that public toilets have long had in Addis Ababa, AAWSA has rebranded the public restrooms to make them more appealing to residents. AAWSA has made these facilities more than just spaces for providing a basic service, but also a tool for greening the city (Interviewee 4, 217). The Authority has completely redesigned these facilities to resemble gardens, and has rebranded them as rest stops that provide traditional cups of coffee and quick snacks in addition to being toilet facilities. In some instances, the facilities also give shower services.

This more targeted approach to provide access to low income areas of the city also has been creating employment opportunities for groups of women, the differently abled and unemployed youth. In 2011, AAWSA took on the responsibility to organize these groups into co-ops (commonly called small and micro enterprises), allowing them to manage and operate public toilets. AAWSA takes only 10% of the profits that these co-ops make, as a form of repayment for the facilities it provides them with (Interviewee 4, 2017). AAWSA collects applications for taking part in these co-ops from the city’s weredas and chose the ones that it deems are fit to effectively run the facilities. It also provides them with a training session and a manual, which it hopes will help them in sustainably running their business (Interviewee 4, 2017).
The co-ops are mandated by AAWSA to charge 1 Birr (0.036 USD) to use one of usually six available toilets (two of which are handicap accessible), and 50 cents (0.018 USSD) for using the urinals (Interviewee 4, 2017). The co-ops also supplement their revenue by selling refreshments and operating a small, all-purpose kiosks on the side. During my visit in the summer of 2017, I was able to interview two managers of these co-ops. One of the public toilet facilities I visited was located in Kora neighborhood, a historically disadvantaged part of Addis. The manager who was on site at the time claimed that the facility has about 200 visitors a day, most of whom day laborers working in the area (Interviewee 7, 2017). The manager told me with pride that “for some people, even being able to have clean water to wash their hands with is a blessing” and that customers are, in his opinion, grateful for the services they provide. He also informed me that despite the much needed service that they are providing and the heavy foot traffic they get, the facility can barely make ends meet. This is because this specific co-op is made up of 22 members, which in addition to the isolation of the neighborhood it is located in, means there isn’t enough revenue to be shared adequately to cover members’ living expenses. The second facility I visited was located in a small transportation hub in the relatively wealthy Bole Mikael neighborhood. The manager of this co-op was less impressed with the facility that was provided for them by AAWSA. She claimed that the designs of the handicap stalls are very unattractive to people, who prefer to use squat toilets over toilets with seats. She also complained that although the co-op has made requests to AAWSA to fix one of the stalls that has gone out of service over a month ago, the Authority has not sent anyone to address the problem, which has slowed down the co-ops business (Interviewee 8, 2017).

In addition to encountering issues with raising enough revenue to sustain the co-ops that operate them, the public toilets also face other, even more dire challenges. Despite their provision of a much needed service they provide, there are less than 200 of them functioning in the city. As can be seen from Figure 14, most of the city’s weredas don’t even have a single facility in them. Most other weredas only have one or two facilities in them, which is inadequate to reach all people that need the service.

Although the Authority has enough funds to construct the facilities and support from the World Bank to train co-ops in efficiently running them, these toilets are not being built as fast as they should be. The goal of adding 2700 more by 2020 that AAWSA has set for itself is currently out of reach. This is because, despite efforts to make the toilets pleasant, the bias against them still persists and inciting NIMBY-ism from surrounding households and businesses alike (Interviewee 4, 2017). This can be attributed to the inefficient design of the toilets, most of which still depend on septic tanks for storing waste. Because of the large foot traffic the facilities receive, these septic tanks fill up every 10 days or so, requiring them to be pumped frequently. The pumping of septic tanks is quite pungent, causing nascence for communities in its proximity (Interviewee 7, 2017). In addition to residents, commercial or governmental entities fighting
AAWSA from building public toilets around them, the city's woredas stall on giving out land for these toilets, and prefer to reserve land for bigger development projects (Interviewee 4, 2017). Thus, AAWSA has had to bypass the city administration and plead with the Prime Minister's office to gain access to land in order to construct more facilities. As of the summer of 2017, AAWSA had received confirmation that the Prime Minister's office will force the city administration to give AAWSA space for 700 more units, which although will not be enough, is still some progress (Interviewee 7, 2017).

![Map of location of Public Toilets in Addis Ababa at the Wereda Level](image)

Figure 14. Map of location of Public Toilets in Addis Ababa at the Wereda Level

In addition to the slow pace in which they are being constructed, there is a bias caused by where these public toilets are being placed, which determines who they end up serving. In an attempt to have the toilets reach as many people as possible, they are placed in commercial centers and around transportation hubs, which are usually not occupied by residential units.
Thus, due to their location, they do not service low income households in need of safe access to sanitation services. Additionally, the pay per use model they employ, despite how much it has been subsidized by AAWSA, still favors those who do not have families. The fact that most households in the city are comprised of more than five individuals means the cost of using these public toilet facilities has to be multiplied five times as well, and might end up being too much of a burden. Finally, the value of 1 Birr differs from resident to resident, depending on their economic statuses. To some it is just pocket change. To others however, 1 birr can buy 50 liters of clean water from a public fountain, which that can sustain a person for a day. It is possible that instead of spending 1 Birr on accessing a facility, some residents might be more inclined to use other methods such as open defecation, which they can access for free.

4.6.2 AAWSA’s Poorest of the Poor Safety-net Program

AAWSA’s second option of providing alternatives access seeks to address communities whose income is restricted enough that they cannot even afford even these public toilets. The Poorest of the Poor Safety-net program constructs communal toilets for households who have extremely limited financial capacity. The communal toilets are built to serve from five to twenty households (Interviewee 3, 2017). This approach, which AAWSA’s Project Office manages in conjecture with funds from the World Bank, requires households to put in a request to their weredas in order for AAWSA to provide it for them. The wereda’s will then confirm that these households fit the “poorest of the poor” category and have them affirm that they agree with being categorized as such. After this long verification process is completed, 3 will provide the qualified households with the facilities, using their own land (Interviewee 3, 2017).

This approach is problematic for three reasons. First of all, the process of verification and requirement of residents having to go through to be recognized as the “poorest of the poor” and gain services is demeaning and undignified. Additionally, the requirement of using the households own land for building the toilet facilities makes it quite difficult to do so, as most of the income poor households of the city live in overcrowded areas that have limited space (Interviewee 4, 2017). Finally, AAWSA’s GTP plan has set as its goal the construction of only 300 of these facilities, which, when put in contrast with the hundreds of thousands of residents who need this service, is barley a drop in the ocean.

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4.7 An Intervention Flawed by Design

As can be seen from this section, although AAWSA’s plan to transition the city on to a modern sewerage grid aims to significantly increase the city’s ability to access safe sanitation services, in reality it falls short in a multitude of ways in servicing those that are at the core of its
mandate: the city’s residents. The plan for expanding the city’s sewerage grid is inherently vulnerable for multiple reasons.

For starters, the construction of this grid depends on importing a majority of the equipment needed to complete it from outside the country. As I have briefly mentioned before, the lack of foreign currency that the country struggle with, coupled with the time and cost of transporting equipment into the city, is contributing to the delay of the project. The plan is also vulnerable because AAWSA lacks the technical capacity needed to implement it (Interviewee 5, 2017). Thus, the speed with which this grid is expanding, especially in terms of reaching households is extremely slow. If the households that are part of the Condominium projects are discounted, only 1,700 homes have been connected to the grid over the past five years (Birhane, 2017). AAWSA has done very little to increase resident’s awareness of the sewerage grid, which has limited the requests for connections that it receives. Due to this, AAWSA has not been able to follow the schedule it has set for itself along with the World Bank. This means that the Authority has not been able to receive payments from the World Bank upon showing proof of adequate progress, delaying the project further (Interviewee 5, 2017).

An additional vulnerability of this plan is the grid’s reliance on adequate amounts of water to transport the waste. As mentioned before, Addis has an intermittent supply of water, which is also a partial consequence of the constant power outages that plague the city. The dependence of the infrastructure on other, fragile basic services to ensure that it functions, further increase its vulnerability.

Lastly, the fixation that AAWSA has with using the indicator of transitioning 76% of the city on to a grid as proof of success to propel itself into becoming one of the top service providers on the African continent is concerning. Carolini and Raman, in a working paper from 2015, argue that an efficiency and indicator based approach to interpreting normative rights to basic services is not adequate in achieving desired goals and can even lead to a counterproductive exaggeration by utilities of actual availability of services (Carloini and Raman, 2015). Such indicators have constantly failed to describe the reality of the populations that utilities aim to serve, and have rather been used as a tool for justifying an intervention as a successful approach. The same is the case in Addis, where, as mentioned in the earlier sections of this paper, only as little as 13% of the households that do not reside in Condominiums are actually allowed to access the sewerage grid. The estimation that AAWSA uses does not reflect the reality that a significant portion of the city’s residents will not benefit from its expensive intervention. By claiming a false path to success, the use of this indicator as proof of increased access to services limits investment in other approaches that can more equitably and efficiently serve Addis’ population.

In conclusion, AAWSA’s efforts for expanding the city’s sewerage grid implicitly or explicitly, favors the city’s construction boom, and places the burden of cost recovery on those who it
specifically ends up marginalizing. It also excludes many residents, from those who do not have access to flushing toilets to those who lack legal documentation to prove the legitimacy of their tenure, without supplying sufficient alternatives of access. The claims and allusions that AAWSA makes to using rights based approaches to service provision, much like my suspicion while I was sitting in the office with the AAWSA officials I mentioned in the introduction of this paper, are merely a façade. AAWSA’s plan for forging a path towards universal access thus fails to reach its goals, as it does not match the realities of the city that it is seeking to serve. The other alternatives that AAWSA has set to make its service more equitable distribution of services also do not succeed in effectively addressing pressing needs. This intervention aimed at increasing access, ironically adds to the marginalization of many by excluding them from the services it provides. Thus, AAWSA’s current plans neither normatively or efficiently service the city’s households, making it flawed by design.

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In a city of almost four million, where about 8% (approximately 320,000 people) has no access to any form of sanitation facilities, this current provision of services is grossly inadequate. The intervention AAWSA is making to transition Addis Ababa on to a sewerage grid neither equitably nor efficiently service Addis Ababa’s residents. The shared toilet facilities that the Authority provides are not sufficient enough to serve those neglected by the heavy investment in the sewerage grid. Despite this I believe that there are some adjustments that AAWSA can make to create positive steps forward. In this section, I make four recommendations that I believe will allow AAWSA to capitalize on the investments that it is making and increase its ability to equitably provide safe sanitation services for the city’s population.

5.1 Making the Requirement for Connecting to the Sewerage Network Flexible

Currently, AAWSA requires those who seek to connect to the sewerage grid to have flush toilets. As mentioned in the chapter above, over half the city actually uses pit toilets and thus cannot qualify for connecting to the grid. The reason behind this requirement is that the grid requires water pressure to move transport waste from households to the city’s treatment plan. Although this is true, requiring flush toilets should not be seen as the only solution for addressing this concern. My first recommendation for AAWSA is thus to be more flexible and creative about who is allowed to connect to the sanitation grids. The following precedent shows how a different approaches taken by community members and the local utility in Karachi, Pakistan was able to unconventional toilets types to a centralized grid.

**Precedent 1: The Orangi Pilot Project, Karachi, Pakistan**

The Orangi Pilot Project began in 1980 in Orangi, a town consisting of a cluster of low income settlements known as Katchi Abadi’ in the peripheries of Karachi, Pakistan (Hasan, Pervaiz and Rahman, 2008). OPP was started by Dr. Akhtar Hameed Khan, a renowned development theorist and practitioner on the premise of overcoming the constraints faced by governments in improving informal settlements in Pakistan (Hasan, Pervaiz and Rahman, 2008). OPP identified sanitation as its focus area following a period of action research and initiated a ‘component- sharing model’ as a way to attain low-cost sanitation services. The model is based on the notion of coproduction, where the collaboration of the state and the residents results in a better provision of sanitation services and accountability (Mcgranahan and Mitlin, 2016). In the case of Orangi, the responsibility of constructing household and building level sanitation infrastructures was placed on residents and the construction and maintenance of secondary infrastructure fell on governments shoulders (Hasan, Pervaiz and Rahman, 2008). OPP supported residents in constructing pour latrines in their homes, an underground sewer system made of pipes with smaller diameters than the standard used by...
the city’s utility in each lane to connect to the individual latrines and a collector sewer in each neighborhood which eventually fed into a trunk sewer provided by the state (Mcgranahan and Mitlin, 2016). By encouraging communities to be part of their own development trajectory, OPP helped clean Orangi by replacing the open sewage that marked the settlements with simplified sewers. 108,000 households, which is about 90% of the community, were able to access safe sanitation through this project (Hasan, Pervaiz and Rahman, 2008). By 1991, the infant mortality rate of Orangi fell from 128 per thousand life births to 37 (Hasan, Pervaiz and Rahman, 2008). The Orangi Pilot Project is proof that there are alternative latrine types that households can use and still be able to effectively transport waste through a sewerage grid.

5.2 Forming Partnerships with Community Based Organizations

During my research, I was not able to find community based or other types of organizations that worked on safely removing waste from the city’s crowded and inaccessible neighborhoods. However, one resident who lives in Kora neighborhood informed me that she hires a young man to come and empty her pit with a shovel and dump the waste in a nearby river whenever it is full (Interviewee 10, 2017). Although there is no given data to understand the extent of this form of unsafe removal of waste, I believe that the practice is common enough to cause for concern. My second recommendation for AAWSA is thus to foster and support community based organizations or small scale and micro-enterprises that safely remove of waste from the crowded and poor neighborhoods that its grid and vacuum trucks cannot access. I make this recommendation in recognition that how both AAWSA and the city’s administration are seeing sanitation provision not just as a way to address a basic need but also as a source of employment. The following precedent from Maputo, Mozambique is an example of how such a partnership can benefit a community in need of both employment opportunities and safe removal of waste. It also shows the pitfalls that may occur in such an intervention, and is a good lesson for AAWSA should it seek to partake in this approach.

Precedent 2: Associação para o Desenvolvimento de Água e Saneamento do Bairro de Urbanização (ADASBU), Maputo, Mozambique

Associação para o Desenvolvimento de Água e Saneamento do Bairro de Urbanização (ADASBU) is a community based organization established in 2000 to improve the water and sanitation supply of Urbanização, a low-lying neighborhood close to the cement city in Maputo, Mozambique (WEIGO, 2011). ADASBU was created by residents with the support of the Doctors without Boarders after the 2000 Mozambique flood devastated Maputo and left most of the low lying neighborhoods inundated by waste-laden standing water for weeks (WEIGO, 2011; Disaster Relief, 2000). Today, it has 20 active members and receives has received support from WaterAid, UNHabitat and Danish International Development Agency (WEIGO, 2011).
In addition to collecting solid waste from the densely populated neighborhood, ADABSU is also involved in the constructing and emptying of pit latrines (WEIGO, 2011). ADASBU provides pit emptying services for a majority of the residents in Urbanização, who were not receiving service from the local authority by using appropriate technology that is compatible with the physical context of the neighborhood (Sugden, 2005). ADASBU initially began emptying toilets using a fuel-powered pump (i.e. the Maqunieta), which sucks the fecal sludge into a 4,000-litre tank pulled by a tractor (Kayaga, 2015). However, this method only worked for low-density, fairly planned settlements that the tractor could access and had a high operational cost (Kayaga, 2015). Thus, after 2002, ADASBU mainly emptied pits by using small suction trucks (vacutug) and deposits the sludge into a 4000-litre fecal sludge holding tank in their office grounds (Godfrey, 2009; Kayaga, 2015). In accordance with the partnership agreements the local authority sends larger mechanical suction trucks to empty the sludge from the storage tanks (Godfrey, 2009). The local government also waves the 150$ monthly fee for emptying sludge into the local wastewater treatment plants (Sugden 2005; Kayaga, 2015). ADASBU charges 200 MZN (US$7.5) for removing 500 liters of sludge using the vacutug (Kayaga, 2015). This charge is conscious of the economic ability of the residents of Urbanização and is too low to cover the operation and maintenance costs. Thus, ADASBU relied on support from donors and the national (Kayaga, 2015).

Although the services that the ADASBU is providing are conscious of the physical and economic characters of Urbanização, their service provision is limited by some hindrances that they have faced. The first one is that the vacutugs do not have the power suction power to remove heavy and compacted fecal sludge from pit latrines (Kayaga, 2015). This reduces the number of households they can serve based on the design of their latrines. Additionally, the operation and maintenance of the vacutugs is high and consistently increases the more they are used (Kayaga, 2015). The arrangement that ADASBU has with the local authority is also not always reliable, and there are times when the large mechanical trucks don’t show up to remove sludge from the storage tank (Godfrey, 2009). Because the ADASBU’s customer base has increased consistently, this inconvenience has forced them to purchase a tractor to haul the storage tank to the wastewater treatment plant which is located 9 km from the city center (Kayaga, 2015). This added expense has increased maintenance costs even further and accounts for about 50% of the total service costs (Kayaga, 2015). However, this does not disqualify it from being a precedent that can inspire collaboration between public providers and small scale informal providers in expanding access to safe sanitation services for low income and densely populated neighborhoods.

5.3 Advocating for the Recognition of the Social Value of Land

One of the main reasons that AAWSA’s public toilet project is not as extensive as desired is because of the difficulties the Authority faces in accessing land. As mentioned in the previous chapter, this is mainly due to NYMBY-ism and the lack of support from the city’s administration in identifying and acquiring available plots. My next recommendation encourages AAWSA to appeal to the Addis Ababa City Administration and the federal government for the institution of
a policy that recognizes the social value of land, and reserves plots specifically for constructing public toilets. This recommendation is based on a comment by the one of my interviewees, who informed me that the Authority has had to appeal to the Prime Minister’s office to intervene on its behalf and acquire plots of land from the city administration (Interviewee 4, 2017). AAWSA should use its influence and take advantage of the fact that land is owned by the state to advocate for a more permanent solution that guarantees it with a continuous supply of land for the construction of these much needed facilities.

Precedent 3: Brazil’s Recognition of the Social Function of Land in Urban Areas

The social function of land is a concept that asserts the right of private ownership includes an obligation to use land in ways that benefit society as a whole (Ondetti, 2015). In Brazil, this concept has been recognized and instituted as a policy for insuring democratic access to land both in rural and urban settings. In the constitution of 1934, the country first recognized that “the right to property cannot be exercised against social welfare. A 1946 revision of the constitution also stated that the law will just distribution of property to maximize social benefits (Ondetti, 2015). The country’s most recent constitution, which was ratified in 1988 also asserts that private property has a social function, and grants power to the federal government to expropriate properties that do not fulfill this function. This constitutional law gives power to city municipalities to expropriate land that is vacant or “underused” and utilize it towards fulfilling local needs (Ondetti, 2015).

In 2001, Brazil passed the City Statute and aimed at providing the legal framework for insuring democratic land access and equitable distribution of properties in the country’s urban centers. The passing of this statute gave cities the framework to include social functions of land in their masterplans. Although Brazilian cities have historically fallen behind on the implementation of these masterplans, the presence of the laws have given civil society members the tools for fighting for equitable distribution of land.

5.4 Rethink How to Engage with Informality

My final recommendation is concerned with the approaches that both AAWSA and the Addis Ababa City Administration use when dealing with the city’s untenured population. Informal settlements across the board have a history of neglect by governments, who usually don’t make significant investments in improving the provision of basic service in them (Wegelin-Schuringa, M. and Kodo, T. 1997; Mcgranahan and Mitlin, 2016, Scott, 2007). AAWSA’s current approach for insuring that such communities have access to water and sanitation services reflects this reality. The Authority’s provision of public fountains to informal households’ as a way to fulfill their right
to water is an inadequate solution. It is also an approach that puts higher financial burdens on such them and limits their ability to access the city’s sewerage system, further alienating them from their rights to basic services. Bureaucratic details of exclusion, in addition to the rapid displacement caused by urban renewal projects, thus make it difficult for informal households to invest in safe sanitation, and plays a great role in increasing their vulnerability (Scott, P. et al., 2013).

AAWSA’s dissatisfactory approach to providing services in informal communities is influenced by the Addis Ababa City Administration’s approach to planning the city. In the master plans that the city releases, these communities are actually rendered invisible and the places they occupy are depicted as vacant (Interviewee 1, 2016). The fact that the city makes no space for them in its plans then makes it easy to understand why a high level official could throw out comments stating that these communities will cease to exist in the near future. The impression that people are invisible or likely to be erased out of the city can clearly influence utility providers to question why they should waste precious equipment servicing a community when such an investment may be lost when the people are evicted and the their homes are demolished.

However, the significant effect that urban-rural migration has on the city’s population and Addis’ housing deficit means that informal construction of homes is not going to be a phenomenon that can be irradiated. In recognition of this, the city administration has recently created an ordinance that allows some informal households to acquire legal tenure (Interviewee 11, 2018). Accordingly, households that were constructed before 2005 and are visible on the aerial images taken of the city at the time, are illegible for gaining formal status. Although this effort to incorporate the informal households is a positive step forward, it is not being implemented at an adequate rate (Interviewee 11, 2018). This can be attributed to people’s lack of information about the details of their right (Melese, 2005). Additionally, since the city has now criminalized the construction of homes without proof of legitimate lease, people may also be too afraid to come forward and begin the formalization process (Interviewee 11, 2018). This ordinance also has its limitation in that it does not provide a solution for formalizing the status of people who have constructed their homes after 2005, which misses a significant part of the city’s population.

In this context, the solution for bettering the adequate and equitable provision of water and sanitation services to untenured communities will not come from the city administration. I thus urge AAWSA to rethink its current approach to servicing such communities, which is a quick and temporary fix that works off the assumption that they will eventually be removed from the city. If the Authority is committed to providing universal access for the city’s residents and acknowledges the normative value of the services that it provides, it must also commit to providing equitable services to all residents, despite their tenure status. The Authority should also recognize

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15 Interview, 2016 s
16 Master’s thesis
that households without legal may also be able to be a significant revenue source, and take advantage of this significant base to increase potentially improve its financial standing.

5.5 Conclusion

As I conclude this thesis, I can’t help but recall a comment one of my interviewees made while I was doing fieldwork in the summer of 2017. This particular interviewee lived in Kore, which as I have briefly mentioned before, is one of Addis Ababa’s most disadvantaged neighborhoods and has limited access to safe sanitation services. She was sitting outside her house, which now faces a large, single family home that was constructed less than two years ago, when she told me about the health struggles she used to have because of the open sewers that used to flow outside her house. She told me that she had been feeling significantly better since the owner of the large property in front of her house moved in. In order to avoid the pungent smell, he hired labors to clean up the sewerage that was littering the streets and installed underground sewer pipes, connecting her block to the city’s sewerage grid. She expressed her gratitude and said to me “it is always better to live next to a rich man” (Interviewee 10, 2017). The same sentiments were reflected in one of the interviews that I had with an official from AAWSA. This official, who worked in the Sewer Services Sub-process division, said to me it is easier for the Authority to connect wealthy households to the sewerage grid, as they are able to afford whatever fee AAWSA charges them. Such requests also allow the grid to expand into unconnected neighborhoods, expanding the reach of the infrastructure for those who cannot afford to pay large sums of money to connect to lines that are distant from their houses (Interviewee 5, 2018).

The unfortunate reality however, is that not everyone can live next to a rich man anymore. Because of the construction boom that has taken ahold of the city, Addis has become a city of disparities, where the rich and the poor can no longer live side by side. Today, driven by the county’s ambitious push for development, Addis is becoming more of an engine for economic growth, instead of a home to its residents. The concrete buildings that are redefining the city’s skyline are also determining who occupies parts of the city and forcing many to lose the permanence of their homes. As a significant portion of the city is becoming transient, constantly displaced due to their inability to afford formal land titles or the city’s urban renewal agenda, AAWSA’s investment in a permanent and rigid infrastructure misses its mark of reaching residents, while it perfectly aligns with the needs of the city’s construction boom. In fact, this exclusive grid, as it expands underground, also implicitly determines who gets to occupy the space above it, thereby adding to the alienation of many residents.

If urbanization is cast as a main driver for development, then this phenomenon needs to be understood in all its forms and not just in its desirable aspects. In Addis Ababa, urbanization is informality, it is migration, it is displacement just as much as it is a construction boom, modernity or economic development. In this regard, the exclusionary infrastructure that AAWSA is so
heavily investing in is not the answer to ensuring just and equitable access to the rights to water and sanitation that all residents have. As can be gathered from the analysis of this thesis, it is too flawed by design to be equitable. Thus, AAWSA should dedicate resources on making this infrastructure more flexible, to accommodate the population that falls into the cracks of a growth based approach, and invest in making this grid a more accessible source of service provision to those that is in dire need of it.
BIBLIOGRAPHY


- Carolini, G and Raman, P, 2017 In-Dictator-Ship: How The Proliferation of Global Indicators For Water And Sanitation Ignores Their Darker Side Working Paper


- Murthy, S 2013 The Human Right(s) to Water and Sanitation: History, Meaning and Controversy Over-Privatization Murthy POST MACRO HHD Approved 4.7-1.Docx


- Sugden, S. (2005). An assessment of Mechanical Pit Emptying Services in Maputo, London School of Hygiene & Tropical Medicine


- WIEGO Organization (2011) Mapping of the Policy Context and Catadores Organizations in Maputo, Mozambique, Brief No. 6


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