The Nexus between Water Supply Infrastructure and Socio-economic Developments in Amhara Region, Ethiopia, 1941-2005

by

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SIGNATURE

2, May, 2017 DATE Acronyms

ADB -African Development Bank

CELU -Confederation of Ethiopian Labor Union

DTWSSSO -Dessie Town Water Supply and Sewerage Service Office

ECA -Economic Commission for Africa

EDU -Ethiopian Democratic Union

EEC -European Economic Commission

EELPA -Ethiopian Electric Light and Power Authority

EPDM -Ethiopian People Democratic Movement

EPLF -Eritrean People Liberation Front

EPRDF -Ethiopian People Revolutionary Democratic Front

EPRP -Ethiopian People Revolutionary Party

GTWSSSO -Gonder Town Water Supply and Sewerage Service Office

IBT -Imperial Board of Telecommunication

IHA -Imperial Highway Authority

KTWSSO -Kombolcha Town Water Supply and Sewerage Service Office

Mei'son -Amharic acronym for All Ethiopian Socialist Movement

MONRDEP -Ministry of Natural Resource Development and Environmental

Protection

NALA -National Archive and Library Agency

NWRC -National Water Resource Commission

OAU -Organization of African Unity

OLF -Oromo Liberation Front

OPDO -Oromo People's Democratic Organisation

SNNP -Southern Nations Nationalities and People

TPLF -Tigray People Liberation Front

UN -United Nation

UNDP -United Nations Development Program

UNICEF -The United Nation International Children's Emergency Fund

US -United States

WHO -World Health Organisation

WPE -Workers Party of Ethiopia

WSSA -Water Supply and Sewerage Authority

Glossary of Terms

Ato - Mr.

Awrajja -Sub-province

Berr -Ethiopian paper money

Bète -House

Derg -Committee

E.C. -Ethiopian Calendar

Edegäte Bäheberäte Zämächa -Development through Cooperation Campaign

Ethiopia Tikdem -Ethiopia first

Gäţäre -Rural area

Gult -Non-hereditary System of Land Tenure

Keflä Hagär - Province

Kätäma -Town/ Urban

Meketele Woreda -Sub-district

Meneče -Spring

Qäţana -Region

Säfär -Neighborhoods

šolla (Ficus Sycomorus) - An indigenous tree grows around a water point

Täkelay Gezat -Governorate-General

Täräga -Protection

Şehefäte Bèt -Office

Yä Şehefäte Minister - Ministry of Pen

Wäyanè -Tigryans insurgent group

Wäyna-Däga -Moderate climatic zone

Woreda -District

Woyzero (W/o) -Mrs.

Wuha -Water

Yä Wuha Kefele - Water Unit

Key to Transliteration System

Vowels	symbol	example	
1 st order (ge'ez)	ä	Kätäma	ከተማ
2 nd order (Ka'eb)	u	Wuha	ዉ ሃ
3 rd order (Sales)	I	Giziyawi	ጊዚያዊ
4 th order (rabe)	a	Tahesase	ታህሳስ
5 th order (hames)	è	Bète	ቤት
6 th order (Sades)	e	Fesaše	ፍሳሽ
7 th order (Sabè)	o	Ato	አቶ
Consonants	Symbols	Examples	
๙	Š	Šängo	ሸንን
ቸ	Ch	Kätämoch	ከተሞቸ
0%	Ş	Şälote	ፀሎት
g	J	Jämärä	ጀመረ
	Č	Čäreqačäreqe	ጨርቃጨርቅ
m	Ţ	Ţèna	ጤና
٩	Υ	Yämäţäţe	የመጠፕ
φ	Q	Qäţana	ቀጣና
ኘ	Ň	Tägäňä	ተገኘ
Υ	Ž	Geže	ग र्भि
Þ	Gwa	Gwade	 ጻድ
*	Ý	Ýagumè	ጳጉሜ

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Preface

My interest on the history of infrastructure goes back to my student days at the School of Post-Graduate Study, Addis Ababa University. Towards completing the course work, I submitted three tentative topics to the Department of History for my M.A thesis. The three topics were on ethnic interaction, Ethiopian historiography, and infrastructural history. The Department Jury, in line with my choice and the originality of the subject, approved me a topic much related to the third thematic area entitled 'A History of Infrastructure Development in South Wollo'. The research work has familiarized me with the scholarly works pertinent to the subject. More than anything else, it helped me to identify existing gaps in the field. It is based on this background knowledge that I opted for the topic 'The Nexus between Water Supply Infrastructure and Socioeconomic Developments in Amhara Region, Ethiopia, 1941-2005' for my PhD dissertation.

Reconstructing the history of water supply infrastructure development has been a neglected theme in Ethiopian historiography. There are no in-depth historical works in this particular field. Available works for the most part are senior essays and theses. They treat the subject in passing while dealing with political or economic history. Most historical works briefly describe infrastructural development in a sub-section of the main topics on political/economic history. Thus, the history of water supply infrastructure development remains uncharted territory throughout the country, including the Amhara region. The study has grown out of this understanding and it will assist to narrow down the existing gap in the literature.

I have consulted both secondary and primary sources. Secondary sources have been examined in different libraries, online electronic books, and journals. They assisted me to look at the gaps in the literature and frame my research work. The study has predominantly relied on archival

documents. To this end, I gathered a lot of primary data from the archival collections of various offices. I had visited the archives of several Water Supply and Sewerage Service Agency offices in the region, the National Archive and Library Agency Collection centered at Addis Ababa and the Archive Center of Debre Markos University. The archival documents included reports, contractual agreements, strategic plans, and minutes of management meetings and the like. These sources are valuable in gathering information on existing demands for water supply infrastructure facilities as well as the number of planned and accomplished works throughout the study area.

I spent considerable time in the National Archive and Library Agency (NALA) for primary data collection. And majority of the archival documents collected and used were from there. I found it appropriate for several reasons. This national archive centre has a collection on diverse themes derived from different public institutions. So I managed to gather valuable information on the research topic. This saved me from wasting time and money in search of data from water supply offices and other government institutions scattered in the region and at the capital, Addis Ababa. The National Archive and Library Agency collection is also preferable from health point of view. As the archives are deposited in dust-proof rooms, it minimizes potential risks of researchers to respiratory diseases. However, among the services the National Archive and Library Agency offer, two things need to be reconsidered. These are the inaccessibility of folders labeled as 'secret' and the limitations on copying. I failed to consult several 'secret' folders. The institution does not allow researchers to have a copy of more than three pages from a file. Even worse, if the number of letters in a file is three or less, copying is entirely forbidden although the source is indispensable for a specific project. In such a situation several archival documents may

have been inadvertently omitted. Restrictions in accessing some folders at the National Archive and Library Agency seem to have limited the volume of usable data.

Even if I got several archival documents in the different offices, they offered me limited information on the subject of rural water supply, policies, strategies, and approaches across the three regimes. Besides, the periods are not documented equally. The military period has been relatively well documented. Sources are scarce on both the Imperial and the early years of the EPRDF regimes. This could be due to improper handling and conservation system. Regarding the files on the incumbent EPRDF period, accessing is difficult since they are alive. Moreover, several documents were abused during the early EPRDF period.

Efforts were made to search out dependable primary and secondary sources. The sources that had been secured were thoroughly cross-checked, examined and evaluated. Once the authenticity of sources was established, they were given meanings or carefully interpreted. Finally, the interpreted data were presented without addition or subtraction to underpin objectivity.

The absence of experienced, senior staff members at Debre Markos University, one of the recently established universities, did not allow me to consult them on some critical issues. The nature of the study program has also created obstacles to fully concentrate on the research work. I pursued my doctoral study alongside my professional duty. Though some workloads were reduced for this purpose, many extra-curricular activities such as meetings, and committee works occupied me immensely. These circumstances compelled me to interrupt my research work for weeks and even months. The frequent power interruption at Debre Markos town also greatly reduced my working hours.

The dissertation is presented in six chapters. These chapters are organized chronologically and thematically. The first two chapters treat the conceptual and theoretical framework and the pre-1941 period. The rest deals with the post-1941 period, and they sequentially dwell upon the Imperial (1941-1974), the Military (1974-1991), and the EPRDF (1991-2005) periods. And the last chapter is the conclusion.

Several themes are treated under each chapter. While chapter one deals with the conceptual and theoretical aspect, chapter two examines the historical and geographical setting of the study area. The major sub-themes incorporated in the first chapter are issues of Ideology and development, Construction of Water Supply Infrastructure, Socio-economic Development, Water and Culture, Water Supply and the Environment. Concepts and theories vital for clarifying terms and framing my research questions are discussed in detail under each sub-section. In chapter two, two sub-themes, namely, the political and physical landscape of the study area and water supply infrastructure development in Ethiopia: History and historiography are treated under the main heading Historical and Geographical Setting. Here, detailed explanations are given on the historical origins of the Amhara region as a political administrative unit and the geographical feature and drainage system of the study area under the political and physical landscape sub-heading. Attempts are made to assess the history and historiography of the water supply infrastructure development in Ethiopia with particular emphasis on the study area.

The Third Chapter treats the Imperial period (1941-1974) under the rubrics of Institutions, Policies and Strategies, Urban Water Supply, Rural Water Supply, Socio-economic Impact, Environmental Impact, and Water Consumption and Conservation Pattern. Chapter Four and Chapter Five look at the Military (1974-1991) and the EPRDF (1991-2005) periods respectively. They investigate similar sub-themes as in chapter three. Finally, Chapter Six gives some

concluding remarks in the form of comparative analysis on the overall water supply infrastructure development and the multifarious predicaments the three successive regimes encountered.

Abstract

This thesis examines the historical introduction and spatial expansion of modern water supply infrastructure in Amhara region across the three successive regimes: imperial, military, and EPRDF. It attempts to explore the institutional setup of the three governments together with their policies and strategies. The study also aims at giving an idea about the socio-economic changes registered because of improved access to safe water. Furthermore, it assesses the water consumption and conservation pattern of the society and the environmental impact of the water infrastructure development.

Modern infrastructure development in Ethiopia traced its beginning back to the late 19th century. Safe drinking water supply had been one of those modern infrastructures introduced in Addis Ababa. Not long afterwards, it proliferated to the provinces. In Amhara region, drinking water supply infrastructure construction began in the early 20th century. However, this thesis inquired whether there was a programmed water supply infrastructure development before the mid-1950s or not. The water supply work started gaining momentum and became a state program in the late imperial period. However, it was affected by financial, technological and trained human resource constraints, lack of appropriate institution, defective management systems, and improper implementation methods.

The military government had strengthened water supply institutions and improved workers' expertise. These developments helped the water supply infrastructure work to be executed in a programmed manner. Yet, financial restraints, the incessant political chaos of the time and the accompanied disruptive working environment had greatly impacted the temporal and spatial coverage of the water supply infrastructure development.

The promising start of the *Derg* period did not continue with similar pace during the early years of the EPRDF rule. Despite the efforts made to set up water institutions at Regional, Zonal and *Woreda* (district) levels, no significant achievement was recorded in the field. The aftermath of the civil war together with internal and external challenges epitomized the transition period had impinged on the water supply work.

This thesis testifies to the emergence of some socio-economic changes in the region. Yet, the slow progress of the water supply infrastructure work had stalled the socio-economic change that should have been registered through improved access to safe water supply. Despite the observable environmental degradation, the thesis argues that the retarded water supply work had nothing to do with the dearth of fresh water. While the trend shows steady growth of water consumption level across the three regimes, the conservation habit of the population remained low.

Key Words: Ethiopia, Amhara Region; Imperial Regime; Infrastructure; Rural Water Supply; Socio-economic Development; Urban Water Supply; the Military Regime; Water Conservation and Consumption Pattern; the EPRDF Regime; Accessibility; Inaccessibility; Environmental Impact.

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Chapter One

Introduction

Conceptual and Theoretical Framework

The use of theory for historical reconstruction has been an issue of debate among scholars. Despite the continued debate on the place of theory for explaining historical events, it is necessary to briefly describe the theoretical frameworks pertinent to this study. It is known that water has been a precious natural gift for human beings, animals, and the ecosystem - an economic input, an aesthetic reference, a religious symbol, a public service, a private good, a cornerstone of public health, and a biophysical necessity. A theoretical discussion is, therefore, vital in addressing the research questions raised in this study by touching upon the political, economic, socio-cultural, and environmental aspects of water supply infrastructure development. However, before dealing with the theoretical issues, some concepts like accessibility, inaccessibility, integrated water resource management and development, the relationship between infrastructure and development, and the structure of the theoretical presentation need some elaboration.

It sounds good first to discuss about what the concepts accessibility, inaccessibility and integrated water resource management (IWRM) mean in the area of expanding the water supply infrastructure. In order to clarify the meanings of accessibility and inaccessibility, it is vital to mention first the standards being used as benchmarks for delineating an area as accessible or inaccessible to drinking water. The main yardsticks used by the WHO are the length of distance

¹Karren Bakker, *Privatizing Water: Governance Failure and the World's Urban Water Crisis* (London: Cornell University Press, 2010), p. 3.

traveled from the consumer dwelling sites to water points and the time spent to complete the round-trip. Scholars include the volume of water being collected and the level of public health risk arising from poor hygiene as additional parameters. Based on the aforementioned parameters, inaccessibility would mean if consumers should travel more than a kilometer and spend more than 30 minutes on a round-trip in search of drinking water, and if the volume of water that could be collected is about five liters per capita per day. This may entail poor hygiene with a very high public health risk. Consumers are obliged to travel long distances and spend more time searching for supplies. These areas require a very high degree of intervention priority and action. And accessibility applies to areas that could afford at least 20 liters of water per person per day, within a kilometer distance, and 30 minutes round-trip travel time. Based on the length of distance and travel time, the volume of water being collected, the level of public health risk and the degree of intervention priority and action, accessibility is further classified into three levels. These are basic access, intermediate access, and optimal access. The first and the lowest level is basic access. At this level water is obtained within one kilometer distance and 30 minutes round-trip travel time. The average volume of water that could potentially be collected is 20 liters per capita per day, a minimum amount of water needed for human survival. Health education and provision of improved service are required to reduce hygienic problems and public health risk. The second level is known as intermediate access level where at least one public tap is available and about 50 liters of water would be collected per capita per day. In such areas, there is low hygiene related public health risk and deserve little intervention priority and action. The third and highest level of access in relation to the provision of water is optimal access. In areas where the level of access is optimal, water is supplied with multiple taps in a household. On average the volume of water that could be collected is 100-200 liters per capita per day and

thus there is very low public health risk from poor hygiene and the need for intervention priority and action is almost nil. This is because in optimal access level hygiene is not to be compromised and it entails no health hazards.²

Depending on the resource and user's interest, integrated Water Resource Management (IWRM) approach entertains diverse activities. It entails managing water from the viewpoint of maintaining environment, economic, political, technical, and social wellbeing.³ It gives due consideration for the various water sources: surface water and ground water, salty and fresh water with respect to flood, drought, and consumption, pollution, water temperature changes and ecological functions. Besides, it incorporates conflict resolution strategies which could potentially arise among the various water users which include households, industries, agriculture, nature, fisheries, energy and navigation.⁴

The fact that the concept of development had gone through significant makeover in the second half of the 20th century,⁵ it needs some discussion on what did development mean over time and see its meanings from the varied development perspectives. Several meanings have been given to the term development. In the words of Douglas Dowd, development means 'transformation; structural economic changes both require and enable changes in the social process, in the

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²WHO, *Guidelines for Drinking-water Quality*, 3rd Edition (Geneva: WHO Press, 2008), p. 91.; Jenny T Gronwall, 'Access to Water Rights, Obligations and the Bangalore Situation' (Sweden: Linköping University Electronic Press, http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-11686), p. 222.

³K. Khatri *et al.*, 'Challenges for Urban Water Supply and Sanitation in Developing Countries', in Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity (* London: Taylor & Francis Group, 2009), p. 92.

⁴H. Sally, 'Advances in Integrated Water Resources Management Research in Agriculture', *Proceedings of MOWR/EARO/IWMI/ILRI International Workshop Held at ILRI*, Addis Ababa, Ethiopia, (December, 2-4, 2002), pp. 46-47.

⁵Joe Remenyi, 'What is development', in Damien Kingsbury *et al.* (eds.), Key *Issues in Development* (New York: Palgrave Macmillan, 2004), p. 22.

institutional realm--for better or worse.' To Robin Attfield and Barry Wilkins, development is an achievement that entails the processes of overcoming evils of underdevelopment, such as high rates of infant mortality and morbidity, low rates of productivity, poor provision of health care and of educational opportunities, illiteracy, and (centrally) poverty. Lakshman Yapu *et al.* defined development as it is a means of fulfilling basic needs or an endeavor of making available high per capita income, high rate of the growth of GNP, high level of living and consumption, and well developed infrastructure. In the introduction of 'The Anthropology of Development and Globalization' Marc Edelman and Angelique Haugerud defined development as follows:

"Development" is an unstable term. Is it an ideal, an imagined future towards which institutions and individuals strive? Or is it a destructive myth, an insidious, failed chapter in the history of Western modernity? Conventionally "development" may connote improvements in well-being, living standards, and opportunities. It may also refer to historical processes of commoditization, industrialization, modernization, or globalization. It can be a legitimizing strategy for states, and its ambiguity lends itself to discourses of citizen entitlement as well as state control.

Jan Nederveen Pieterse sees the meanings of development across time and from the viewpoint of the diverse development perspectives. Development or economic growth during the 1940s, as understood from growth theory and big push theory, was knotted with industrialization in the perspective of development economics. In the 1950s, when modernization theory was popular, the meaning of development, apart from economic growth, included political and social

⁶Douglas Dowd, Capitalism and its Economics: A Critical History (London: Pluto Press, 2000), p. 141.

⁷Robin Attfield and Barry Wilkins, *International Justice and the Third World: Studies in the Philosophy of Development* (London: Routledge, 1996), p. 1.

⁸Lakshman Yapu *et al.*, 'Building a Case against Economic Development', *GeoJournal*, 35, 2 (February 1995), pp. 105.

⁹Marc Edelman and Angelique Haugerud, 'The Anthropology of Development and Globalization', in Marc Edelman and Angelique Hauteur (eds.), *The Anthropology of Development and Globalization: from Classical Political Economy to Contemporary Neoliberalism* (US: Blackwell Publishing Ltd., 2005), p. 1.

modernization. 10 According to modernization theorists development signifies a shift from a 'traditional' society to a 'modern' and 'industrialized' society. 11 This shows that the meaning of development was much wider in the modernization theory perspective than the view held by development economics. Development means accumulation of capital which is national and autocentric (autarkic) by its nature from the dependency perspective. To the alternative development theory it meant human flourishing. Yet, it took another meaning in the viewpoint of human development and neoliberal thinking that emerged on the scene in 1980 and the 1980s respectively. The former entails capacitating or developing the human resource, and augmentation of human choices. According to the neoliberals thinking, it is to mean economic growth to be attained by means of structural reform: financial and labor market deregulation, liberalization and privatization. From the perspective of post-development, development is defined as authoritarian engineering and disaster; 'the state is accused of authoritarian engineering and economic growth is repudiated'. To the UN's millennium development goals (MDG) by 2000, the term development means structural reform. 12 Pieterse concluded in his explanation of the variant meanings of development as: 'Virtually from the outset development includes an element of reflexivity. It ranges from infrastructure works (roads, railways, dams, canals, ports) to industrial policy, the welfare state, new economic policy, colonial economics and Kevnesian demand management.'13

It is by taking the definition of Robin Attfield and Barry Wilkins and Lakshman Yapu et al. that the history of water supply infrastructure development and its socio-economic impact in Amhara

¹⁰Jan Nederveen Pieterse, Development Theory: Deconstruction and Reconstruction, 2nd Edition (London: Sage Publications Ltd, 2010), pp. 6-7.

¹¹Gorge Larrain, Theories of Development: Capitalism, Colonialism and Dependency (UK: Polity Press, 1989), p.11. ¹²Pieterse, pp. 6-7.

¹³Ibid., pp. 7-8.

region is going to be assessed. Since Ethiopia's development has been at grass roots level, the water supply infrastructure construction taking place by then was not expected to promote higher socio-economic progress but reinforcing changes to come on existed worst poverty and basic problems of the society.

Secondly, since the study topic deals with the history of water supply infrastructure construction and the accompanied socio-economic development, it is plausible to have a discussion on the relationship between infrastructure and development. Scholars argue that infrastructure construction and development influenced each other positively. The expansion of infrastructure reinforces the level of development and the later plays similar role in consolidating the former. Thus, the accessibility of infrastructure of any type is a necessary condition for achieving development and vice versa. However, scholars at the same time remark that the positive correlation varies in scope from place to place. The association or the impact of the one over the other is stronger and more visible in inaccessible and undeveloped regions than in interconnected and advanced regions. Here, two points need to be considered before an infrastructure is extended to a certain area: the development level and the type of development sector intended to be set up in the region. To begin with, expanding physical and social infrastructures in backward regions is important and potentially more profitable than advancing financial infrastructure. Secondly, some infrastructures are indispensable for a certain development sectors to start and continue functioning. 14 So, policy makers have to identify first the development level of regions

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¹⁴Rajarshi Majumder, 'Infrastructure and Regional Development: Inter linkages in India', *Indian Economic Review*, 40, 2 (July-December, 2005), pp. 168, 178-179.

and what development programs are there prior to approving the type of infrastructures to be launched and initiated for construction.¹⁵

As indicated earlier, infrastructure developments including water supply infrastructure development are influenced by the political, economic, socio-cultural and geographical circumstances of a country, a continent or the world at large. Infrastructure construction and the extent of its expansion often determine the political, economic, socio-cultural as well as the environmental situation of a specific area. L.A. Swatuk, for instance, contends that "water is the centrifugal force in all development." ¹⁶ Consolidating this idea, Karren Bakker argues that lack of access to potable water had greatly impeded the effort of raising agricultural productivity and nutritional intake level (the center piece of development mission) during the first decade of the post-World War II period. ¹⁷ This illustrates the necessity of dealing with theoretical issues under different rubrics. Moreover, since development theory is a grand theory ¹⁸ in its nature, it fails to handle several problems. The largest problems vis-a-vis development thus can better be understood through mid-range or micro- theories. 19 Viewing the nature of development theories put forward along the lines of capitalist or socialist perspectives will help to assess theoretical arguments concerning water supply infrastructure development and its impacts in light of the political ideology being espoused. The theoretical issues about water supply infrastructure building and its impacts can best be understood by examining them under the rubrics of water

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¹⁵Ibid.

¹⁶L.A. Swatuk, 'Toward Good Water Governance: Knowledge is Power?' *in* Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity* (Taylor & Francis Group, London, 2009), p. 251. ¹⁷Bakker, p. 60.

¹⁸ There are no more general recipes, no development policies that are relevant across countries and regions. The singular makes way for the plural generally- not simply development but what kind of development? Not simply growth but what kind of growth? Thus new qualifiers and attributes proliferate, such as sustainable development, people friendly growth, pro-poor growth, etc.' see Pieterse, pp. 2, 13.

¹⁹ Ibid.

supply infrastructure construction, socio-economic development, water and culture, and water supply infrastructure construction and the environment.

Ideology and Development

During the second half of the 20th century, development became a major global issue. The western world embarked on reconstructing the war ravaged infrastructures of Europe soon after the end of World War II. The International Bank for Reconstruction and Development (now World Bank) was established just a year before the end of World War II, and it was assisting the overall rebuilding endeavors of Europe through aid and loans. ²⁰ The finance for reconstructing Europe was derived from the US through the Marshall Plan. This assistance focused explicitly on Western Europe, later it was extended to assist the development endeavors of the emergent countries. An impetus to such a shift was the Bandung conference held in Indonesia in 1955 where the newly independent countries made a decision not to align either with the capitalist or socialist block, and accordingly some of them slipped and became recipient of the USSR's aid and loans. At the Bandung conference, the non-aligned developing countries expressed their joint interests with regard to achieving political independence (decolonization) and 'development'. The conference underlined the importance of development and the need for a worldwide cooperation irrespective of ideological alignment to achieve that. Most of these demands have subsequently been adopted by the UN resolutions and succeeded in getting recognition steadily.²¹

²⁰John Rapley, *Understanding Development: Theory and Practice in the Third World*, Third Edition (US: Lynne Rienner, 2007), p. 1.

²¹Gilbert Rist, *The History of Development: from Western Origin to Global Faith*, Third Edition, Translated by Patrick Camiller (London: Zed Books Ltd., 2008), pp. 82, 85.

As the world was divided into two contending camps, the USSR was suspicious of the idea of non-alignment at first. It showed moderation at the start of the Cold War, particularly after the death of Joseph Stalin in 1953. This is evidenced from the USSR's promise of one million dollar to the UN aid program and Nikita Khrushchev's statement of 1956 describing his government's readiness to give development aid for undeveloped countries. The USSR's financial support to Egypt for the construction of the Aswan High Dam was the first practical move.²² Concurrently, the US started to render aid and loans to the developing countries to support their development efforts; through it, the US was interested in expanding western capitalism and containing the spread of communism.²³ To what purpose was aid used or rendered varied during the post-World War II period.²⁴ At first, the success of Marshall Plan in alleviating the post-World War II Western European crisis made it an exemplary act being used for justifying the role of aid in materializing the developmental needs of the economically backward regions or countries.²⁵

The aid competition, the policy of containment of communism and the bipolar world are believed to have triggered the development of modernization theory in the US. It had been suggested that it was the duty of the US in reshaping the world in its own way. The emergence of the USSR as a superpower with a new political ideological difference proved to be a serious challenge.²⁶ W.W. Rostow, for instance, argued as communism was an ailment to the transition

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²²P.W Preston, *Development Theory: an Introduction* (Cambridge: Blackwell, 1996), pp. 157,169.

²³Ozay Mehmet, Westernizing the Third World: The Euro centricity of Economic Development Theories, Second Edition (London: Rutledge, 1999), p. 60.

²⁴In the period from the 1950s to the 1970s, aid was exploited for reconstruction and infrastructural support in the developing countries. During the 1980s, it had been rendered and employed for humanitarian assistance, and structural development programs and debt relief. Yet, the aim of giving aid was changed in the 1990s and the late 1990s. It aimed at propping up good governance in the 1990s and was provided only if there was good governance in the late 1990s. See J. Gupta, 'Global Water Governance: Controversies and Choices', in Alaerts & Dickinson (eds.), Water for a Changing World – Developing Local Knowledge and Capacity (London: Taylor & Francis Group, 2009), p. 109.

²⁵Colin Leys, *The Rise and Fall of Development Theory* (Nairobi: East African Educational Publisher, 1996), p. 8. ²⁶Preston, p. 168

to development. In order to curb the threat of socialism thus the United States had to provide assistance and protection to help developing countries modernize.²⁷

The competition between the capitalist and communist blocks in the post-World War II period was to ascertain the pre-eminence of the development strategy of the western liberal, or the centrally planned eastern economic system respectively. Radical theorists claimed that the western development strategy was exploitative in nature, and they viewed it as a means of ensuring the continuity of the domination of capitalism and neo-colonial relations in the postliberation period.²⁸ The two development strategies share common elements, such as attaining growth and large scale appropriation/extraction of natural resources, including the need for sacrifices to attain growth. Both the capitalist and the socialist blocks recognized the role of the state, the bureaucracy, i.e. the planners and project managers, as a driving force behind change. On the other hand, the two systems basically differed in some aspects. The capitalist block, for instance, put much emphasis on multi-national corporations and technology transfer, while the socialist block trusted the role of a vanguard intellectuals and the rule of single party system. The two super powers competed to secure the adoption of their respective economic policies by the rest of the world. Many Asian, African and Latin American countries adopted either the Soviet Union's or US's development model.²⁹ The rapid industrialization of the Soviet Union and China was taken as a model in a number of developing countries.³⁰ Morag Bell writes that since external control of the economy aggravated internal social divisions and underdevelopment, African countries 'seek to socialize the economic relation of production through progressive state

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²⁷Larrain, p. 97.

²⁸Barbara Bush, *Imperialism and Post-colonialism, History: Concepts, theories and Practices* (London: Person Education Limited, 2006), p. 94.

²⁹Yapu et al., pp. 106, 115.

³⁰Reji D. Nair, *Emerging Africa: Potential and Challenges: Africa in the New Millennium* (New Delhi: Concept Publishing Company, 2009), p. 23.

control over the means of production, either directly or indirectly through collectives or cooperatives.'31

In those countries that pursued the US economic policy, institutions like the IMF and World Banks appeared for the sake of facilitating the capitalist economy by the late 1950s. The World Bank, for instance, was the main loan donor in sub-Saharan Africa for infrastructural projects in the 1960s and for the development of agriculture and the "green revolution" in the 1970s.³² Moreover, regional banks were established in Latin America, Africa and Asia for similar purposes: Inter-American Development Bank in 1959, the African Development Bank in 1964, and the Asian Development Bank in 1966 are cases in point.³³

Ethiopia started strengthening its ties with the United States of America even before Anglo-Ethiopian relations were severed. In August 1943 a Mutual Aid Agreement was signed between the two countries. Subsequently, the two countries concluded two additional agreements in the economic and military fields. The 1951 Ethio-US agreement made Ethiopia the beneficiary of the Point Four economic aid program. Sased on this, Ethiopia had received significant technical assistance from the US. It had received about 1-1½ million dollar of technical assistance from the US per year. The US assisted in upgrading the agriculture and mechanical art education, creating several agricultural secondary schools, improving livestock and range

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³¹Morag Bell, Contemporary Africa: Development, Culture and the State (New York, Longman Group Limited, 1986), p. 24.

³²Obadiah Mailafia, Europe and Economic Reform in Africa: Structural Adjustment and Economic Diplomacy, (London: Routledge, 1997), p. 23.

³³Bakker, p. 59.

³⁴Eshetu Chole, 'Running to Keep in the Same Place: Industrialization 1941 – 1974', *in* Shiferaw Bekele (ed.), *An Economic History of Modern Ethiopia: The Imperial Era* (1941 - 1974), 1 (Dakar: CODESIRA, 1995), p. 199.

³⁵Andargachew Tiruneh, *The Ethiopian Revolution, 1974-1987: a Transformation from an Aristocratic to a Totalitarian Autocracy* (Cambridge: Cambridge University Press, 1993), p. 19.

management, controlling locust invasions, and conducting water resource surveys.³⁶ According to Andargachew, Ethiopia had received 270 and 350 million dollar military and economic aid respectively in the period between 1952 and 1974.³⁷ Following the accession to power of the military government, Ethiopia's alignment with the US came to an end in 1974. Being a socialist regime, the military government cut off relations with the US and established strong ties with the USSR and other socialist countries.

Development in the two decades of the post-World War II period was perceived as advancing in industrialization. Eventually, some real efforts were made to augment earnings and ensure access to goods and services to the people of the undeveloped countries. Considering the fruits of development as a guarantee for improving the living standard of their citizens and ensuring the continuity of their recently achieved independence, many countries that had low per capita income, slow rates of GNP growth, low standards of living and consumption, and poorly developed infrastructure embarked on development activities. Scholars shared various views on the challenges of the backward regions and countries, or the ex-colonies and how they could overcome those challenges and be on the right track to development. ³⁸ It was against this backdrop that modernization theory came from the US. ³⁹

Modernization theory strived to reveal why and how the first world countries achieved development while the developing countries lagged behind. Modernization theorists raised questions about development basics in the first world countries, and why they were lacking in the developing countries. They underscored the role of social variables and institutional factors that

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³⁶William H. Lewis, 'The Ethiopian Empire: progress and problems', *Middle East Journal*, 10, 3 (summer, 1956), p. 264

³⁷Andargachew, p. 19.

³⁸Rapley, p. 1.

³⁹Larrain, p. 85.

hindered, or reinforced, development in the industrial countries. They also forwarded different opinions on what state of affairs engendered underdevelopment in the developing countries. Some says it was the dearth of capital while others give due emphasis to the lack of cultural value that prevented making profits in the developing countries. 40 Some proponents of modernization theory also attached significant value to the role of sociological variables such as, the inability to shift from primary to secondary social relations. 41 In spite of these differences, modernization theorists coalesced on three points. The first point is that they believed in a linear step of development through which all countries of the world would march towards development and urged less developed societies to follow the examples of the modern societies. 42 Secondly, they agreed on the idea that western countries may well assist the developing countries to develop by providing them with capital, technical and educational aids. Yet, the latter should follow the then supposedly path of the former to fully materialize their own development agendas. 43 They, in fact, underscored the crucial role that modernization could play in ensuring economic growth and democracy. 44 Thirdly, modernization theorists espoused the view that the west surpassed the first stage of development, that is, underdevelopment 45- an idea conceived after the end of World War II and the stage in which the developing countries have found themselves. As a result, modernization theory polarized world societies as 'traditional' and 'modern'. Each has its own variant forms. While the term 'traditional' would literally mean 'rural', 'backward', 'pre-literate', 'religious', 'agricultural' and 'undeveloped'; the word 'modern' represented the urban, developed, literate, secular and industrial world. 46 The

⁴⁰Rapley, pp. 24-25.; Larrain, p. 11.

⁴¹Ibid.

⁴²Ibid.

⁴³ Ibid.

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⁴⁴Leys, p. 10.

⁴⁵Larrain, p. 52.

⁴⁶Larrain, p. 87; Preston, p. 172.

developing societies were labeled poor for the simple reason that they were 'traditional'. These societies remained undeveloped because they were resistant to change, a condition which leading economists and modernization theorists, referred to as a 'barrier' to economic growth and new ideas. 47 The western world labeled all types of indigenous development registered in the developing countries as 'traditional'. However, urban centers in Asia were much better off than the western countries in the process of providing public health services, sanitation and safe water supply in the 18th century. ⁴⁸ Such advancements of non-western societies were simply overlooked by modernization theorists. Some scholars like Bush thus argue that modernization is not exclusively western creation because westerners had adopted some elements of modernization from Asia and other continents. This confirms that the non-western societies could have indeed advanced themselves in their own ways and tempos without western intervention.⁴⁹

In the years after World War II, developing countries were preoccupied with two overlapping agendas of achieving independence and development. Many attained their independence within two decades. Despite many efforts, however, the development agenda was not materialized.⁵⁰ Prior to independence, there was an idea that development in the developing countries would be impeded unless colonialism had withered away. Pieterse, citing Rajni Kothari, wrote that 'where colonialism left off, development took over'. 51 It was, therefore, believed that independence would clear this stumbling block and paves the way for either a national capitalist economy that could ensure the continuation of development and industrialization in these countries or

⁴⁷Mehmet, p. 64. ⁴⁸Bush, p. 101.

⁴⁹Ibid., p. 96.

⁵⁰Rapley, pp. 2-3.

alternatively with independence they could entirely escape the capitalist phase and simply follow the socialist path of development through a relationship with the Soviet Union. ⁵² Though Ethiopia was not colonized by European colonial powers politically, she could not escape the economic influence of those colonizers in her East African neighborhood.

As a matter of fact, there was no left-right based development thought in the early post-World War II. This was because of the near consensus on the importance of greater state intervention throughout the world, including the developing.⁵³ Government intervention had supports in the areas of healthcare, education, in the development of physical infrastructure, poverty reduction and environmental protection. 54 The pioneers in this development thinking, the socialists, communists and modern liberals, like the conservatives and fascists before them, had much confidence in the state to bring social transformations. They were also doubtful about the free market. Consequently, development theorists had identified the problems of the free market world economy, and they came up with a model that supported the role of the state in the post-World War II economy. Many leaders of the newly independent states found this idea a promising avenue for rapid development. 55 In addition to the problems associated with the market economy in their development agenda, the newly independent countries did not have the necessary capital. But, in the mid-1950s the failure of using the available capital turned out to be a more serious challenge. Emphasis was thus resting on administrative and management capacity building. Beginning in the mid-1960s, there were attempts to orientate the traditional values,

⁵²Larrain, pp. 9-10.

⁵³Rapley, pp. 2-3.

⁵⁴Sudipto Mundle, 'Policies, Paradigms and Development Debate at the Close of Twentieth Century', *Economic and Political Weekly*, 28, 36 (September, 4, 1993), pp. 1881.

⁵⁵Rapley, pp. 2-3.

attitudes and practices of the developing countries to western values, attitudes and practices that accentuates the centerpiece of modernization theory.⁵⁶

Owing to the boost in the world economy in the post-World War II period, some successes were registered initially in the infrastructure and industrial sector of the developing countries. The reinforcement to this attainment was the rise in price for primary products. Despite this initial success, state-led development endeavors soon proved to be ineffective. This was partly because raw materials required for running the nascent industries became costly, not to mention the ineptitude of political leaders. Ultimately, developing countries failed to improve the living standards of their citizens.⁵⁷ This situation created an intense debate on development which ultimately led to the emergence of alternative theoretical views.

The left-right based development thought reappeared with the emergence of the new classical liberalists in the 1970s. Activists of neoclassical theory, a theory that encouraged developing countries relied on exporting raw materials and labor intensive economies at the expense of the industrial sector, identified the state as a source of problem and favored the free market if development is to be realized. ⁵⁸ The new left-wing school of thought, on the other hand, supported state-led development approach. ⁵⁹ A branch of the left-wing school of thought that emerged, albeit with very little difference to modernization theory, was structuralist theory. Proponents of the structuralist theory brought into light the structural problems (domestic and international) to promote national development. P.N. Rosenstein-Rodan, for instance, revealed the need for a well established infrastructure in the developing countries to speed up industrial

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⁵⁶Leys, p. 110.

⁵⁷Rapley, pp. 2-3.

⁵⁸ Ibid.

⁵⁹Ibid., p. 3.

growth. ⁶⁰ Rosenstein-Rodan recommended the participation of private investors on infrastructure. ⁶¹ Nurske, on the other hand, commented on the incapacity of developing markets to attract investors. He suggested that public investment should be given priority until situations improve and catch the attention of private investors. ⁶² One of the crucial worldwide structural problems affecting the development of the developing countries was the unfavorable terms of trade arising from exporting primary products. The economic profits they secured from exporting primary products did not even cover the cost of importing manufactured goods. ⁶³ Structuralists like Prebisch and Singer advised governments of developing countries to invest more on industry and impose protective tariff barriers than giving emphasis to the production of primary products. ⁶⁴ In the early post-World War II period, nationalist leaders of the newly independent countries, appreciating the experience of first world countries, saw industrialization as a key way out to accumulate wealth and achieve modernity. They believed industrialization would allow them to produce adequate finished goods and reduce their dependence on the developed countries (the ex-colonial masters) and break off their links with them. ⁶⁵

Scholars like Judith Hart, nonetheless, forwarded opposing views to the idea of prioritizing industrialization in the developing countries. In her article entitled "The Priority for Rural Development Overseas" she had this to say:

It was natural to believe that industrialization was the key to economic progress and development: the wealth creation of the western world in the nineteenth and twentieth centuries was on a scale unprecedented in human history. But the analogy was misleading. ...Given the fact that two-thirds of their populations

⁶⁰Ibid., p. 23.

⁶¹Ibid.

⁶²Ibid.

⁶³Symphorien Ntibagirirwa, *Philosophical Premises for African Economic Development: Sen's Capability Approach* (Geneva: Globethics.net, 2014), p. 27.

⁶⁴Rapley, p. 23.

⁶⁵Ibid., p. 20.

lived in rural areas, dependent directly or indirectly on agriculture and livestock for their livelihood, a development strategy based largely on industrialization was simply not feasible. The capital required to provide productive employment opportunities in manufacturing industry, even to accommodate the natural increase in the population, was and is astronomical. Nor would it be right. An alternative strategy had to be found. It is this which underlies the new approach. ⁶⁶

On the whole, the structuralists had much in common with modernization theorists on the crucial role the state could play in the economy. They underscored the need for rigorous state intervention regarding development endeavors. However, unlike modernization theorists, the structuralists and the dependency thinkers stressed that the state in developing countries had to work hard to expand industries and break their trade ties with the developed world. This would augment the bargaining power of the developing countries. While the developed nations sold their industrial products with higher prices, the developing countries put on the market their primary products below their real value. This asymmetrical trade among the two groups convinced structuralists to advise the developing countries to strengthen their trade among themselves. According to Preston, industrialization of the developing countries would enable them to catch up the first world countries and elevate their economic status from the periphery to the core.

Modernization theory enjoyed the support of social scientists working in Africa during the first half of the 1960s.⁷¹ This trend continued until the emergence of scholarly critics from different angles. In the views of Marxists, for instance, modernization was synonymous to capitalist development. For them the primary goal of modernized states was to ensure the expansion of

⁶⁶Judith Hart, 'The Priority for Rural Development Oversea', *Journal of the Royal Society of Arts*, Vol. 123, No. 5232 (November 1975), p. 772.

⁶⁷Rapley, p. 23.

⁶⁸Leys, p. 13.

⁶⁹Rapley, p. 23.

⁷⁰Preston, p. 186.

⁷¹Ibid., p. 110.

capitalism beyond the frontiers of their countries. Pieterse sees development as a natural and endogenous process, and modernization or industrialization stimulated external intervention through the spread of capitalist ideas, technological diffusion, westernization etc. He argues that development theories of any genre are essentially 'national' or 'state projects'. For Pieterse, a development agenda should incorporate both the developing and the developed world.⁷²

A serious challenge to modernization theory came from dependency theory, a radical branch of structuralism, which first appeared in Latin America in the mid-1960s. The Latin American dependency writers inspired many scholars in the world. Proponents of dependency theory upheld opposing views and approaches to modernization theorists.⁷³ Yet, there was difference among them in line of attack. The first group insisted that capitalism, a system that expanded from the core to the periphery, restrained the development of less developed nations and they suggested that the capitalist system could be removed by a socialist revolution. 74 A group represented by Cardoso and Faletto argued that the impact of capitalism did not have similar effect on developing countries saying that there were some peripheries which attained development under dependency. The other group raised the problem of unequal exchange existing between the developed and developing countries due to the continual transfer of surplus from the periphery to the core. 75 Dependency theorists concur on the idea that the developing countries require to have autonomous national development strategies. This, they believed, would help them break their link with the capitalist first-world states, which thwarted the progress of the developing countries through a systematic bond they have created with the

⁷²Pieterse, pp. 25, 37, 45.

⁷³Gary Gereffi and Stephanie Fonda, 'Regional Paths of Development', *Annual Review of Sociology*, 18 (1992), p. 424.; Larrain, p. 111; Leys, p. 112.

⁷⁴Larrain, pp. 14-15.

⁷⁵Ibid.

economically privileged class of dependent bourgeoisie. Dependency theorists also expressed the potential challenge of dependent bourgeoisies, maintaining their link with the capitalist states. It would become a barrier against the idea of national development. In view of that, the state was viewed as a vehicle for achieving development in line with the national interest without aligning with the world capitalist states.⁷⁶

Generally, advocates of dependency theory affirmed that modernization theory promotes the spread of western practice to the undeveloped world and primarily takes care of the interest of the rich countries and local elites of the developing countries. ⁷⁷ In the eyes of dependency theorists, investment and trade ties between the developing and developed countries exacerbate the predicament of the developing countries. Such a relationship is exploitative for the developing countries, not beneficial as modernization theorists taught. As cited by Tony Smith, Fernando Henrique Cardoso puts great emphasis on the neocolonial nature of the alleged industrial development in the developing countries as multinational corporations were the mastermind behind the industrial development of the capitalist states. These multinational corporations, he believed, took the lion's share, which is far more than the return obtained from whatever managerial and technological know-how they introduced. Moreover, he argues that the system inhibits the growth of sustainable indigenous development.

However, scholars like Smith believed that the master-servant type relationship forged between the first world and the local elites of the developing countries determined the level of dependency of the economically underdeveloped nations. This is due to the fact that the local

⁷⁶Rapley, pp. 26, 28.

⁷⁷ William I. Robinson, 'Remapping Development in Light of Globalization: From a Territorial to a Social Cartography' *Third World Quarterly*, 23, 6 (December, 2002), pp. 1048-1049.

⁷⁸Gereffi and Fonda, p. 424; Leys, p. 12.

⁷⁹ Tony Smith, 'The Underdevelopment of Development Literature: the Case of Dependency Theory', *World Politics*, 31, 2(January 1979), pp. 250-251.

elites created strong attachments with the capitalist states so as to ensure the continuity of their grip on power. ⁸⁰ Fact of the matter is that the dependency status did not help the developing countries grow, as dependency theorists argues, 'neither can it do without', according to Smith ⁸¹

Dependency theory also had its critics. Larrain, for instance, wrote:

Just as modernization theory assures the development of the periphery by ahistorical repetition of the process undergone by the 'model' developed countries, underdevelopment theory assures the impossibility of peripheral development within the capitalist world system.⁸²

Whatever the case may be, dependency theorists had brought some practical changes on the assumptions of modernization theory. This is manifested from the International Labor Office's (ILO) pronouncement for 'redistribution with growth' and the World Bank's adaptation of the theory of meeting 'basic needs' in 1972 and 1973 respectively.⁸³

The issue of attaining development faced critical challenges from the proponents of 'anti-development', 'beyond development' and post-development theories. Post-development theorists advocated the difficulty of uplifting the majority of the world's population to middle class status. They disagree with the idea that development would become tangible.⁸⁴ Pieterse writes that:

Development is rejected because it is the new religion of the west, it is the imposition of science as power, it doesn't work, it means cultural westernization and homogenization, and brings environmental destruction. It is rejected not merely on accounts of its results but because of its intention,

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⁸⁰Ibid.

⁸¹Smith, pp. 250-251.

⁸²Larrain, p. 189.

⁸³Leys, pp. 11-12.

⁸⁴Pieterse, p. 110.

worldview and mindset. The mindset of economism implies a reductionist take on existence 85

The criticism to development by post-development theorists is shared by proponents of dependency and alternative development theories. Post-development gives attention to endogenous factors as driving forces for development. It, in fact, overlaps with alternative development that would bring self-reliance. Yet, post-development theory differs with dependency in that the dependency theory valued the nation state. However, it bears a resemblance to alternative development of locally-based and autonomous ways. In short, the alternative model had faith in development, while post-development discourse rejected it.⁸⁶

The aforementioned theories are relevant to frame my study in one way or another. The infiltration and expansion of modern elements like piped water supply work in the developing countries no doubt are determined by the modernizing interest and commitment of political leaders, who were also able to identify the priorities along the structuralist thought and, to a lesser degree, the society. Of course, the dependency status of the backward states did not allow leaders to expand those modern facilities as they wished. Yet, the relevance of these theories varies across the historical periods dealt in this study. While modernization theory is most important to the imperial period, dependency theory is much relevant and timely to the military period. The fact that the infrastructure level of the Amhara region has been at its grass roots level across the three regimes, the structuralist theory may possibly be applicable throughout the study period.

⁸⁵ Ibid.

⁸⁶Ibid., p. 116.

Water Supply Infrastructure Development and its impacts

"All things are water" Aristotle

For human beings to survive water is the most fundamental of all natural resources. ⁸⁸ It is the essential component of the planet earth, too. ⁸⁹ No human development (be it biological or socioeconomic) can be attained without water. ⁹⁰ It is an exceptional natural resource with multiple uses. ⁹¹ For Daniel Niles water is 'liquid gold'. ⁹² Among a range of roles water plays, Megan Mullin cites the following: water 'might define territory, provide sustenance and security, demonstrate power, create wealth, or offer spiritual or recreational benefits. ⁹³ In other words, water is an indispensable natural gift to human beings and the ecosystem: an economic input, an aesthetic reference, a religious symbol, a public service, a private good, a cornerstone of public health, and a biophysical necessity. ⁹⁴ It has a profound social and cultural value, and it strengthens socio-economic and physical relations and has a fundamental biochemical use. ⁹⁵ Historically, the availability of freshwater had greatly influenced the location of human

⁸⁷ Stephen J. Vandas et al., Water and the Environment (Alexandria: American Geological Institute, 2002), p. I.

⁸⁸Malin Falkenmark, 'Rapid Population Growth and Water Scarcity: The Predicament of Tomorrow's Africa', *Population and Development Review, 16* (1990), p. 81.

⁸⁹C.J. Vörösmarty, 'Water for a Crowded Planet: An Emerging Global Challenge for Earth System Science and Technology', in Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity (London: Taylor* & Francis Group, 2009), pp. 71-72.

⁹⁰Malin Falkenmark, 'Global Water Issues Confronting Humanity', *Journal of Peace Research*, 27, 2, (May, 1990),

⁹⁰Malin Falkenmark, 'Global Water Issues Confronting Humanity', *Journal of Peace Research*, 27, 2, (May, 1990), p. 77.; Peter Ashton, 'Water and Development: a South African Perspective', in Julie Trottier and Paul Slack (eds.), *Managing Water Resources: Past and Present* (Oxford: Oxford University Press, 2004), p. 49.

⁹¹Robert W. Christopherson, *Geosystems: an Introduction to Physical Geography*, Third Edition (New Jersey, Macmillan, 1994), p. 263.

⁹²Daniel Niles, 'Introduction: Water Value, Access, Use, and Control: Socio-Cultural Contexts of Water Scarcity', in Barbara Rose Johnston (ed.), *Water, Cultural Diversity, and Global Environmental Change: Emerging Trends, Sustainable Futures?* (Jakarta: UNESCO, 2012), p. 221.

⁹³Megan Mullin, *Governing the Tap: Special District Governance and the New Local Politics of Water* (Cambridge: MIT Press, 2009), p. 188.

⁹⁴Bakker, p. 3.

⁹⁵Erik Swyngedouw, *Social Power and the Urbanization of Water* (New York: Oxford University Press, 2004), p. 28.

settlement and peoples' way of life. ⁹⁶ The oasis theory expounds that 'during a period of aridity immediately after the end of the ice age in the Near East, people, animals and plants were forced to cluster around an oasis which led to domestication. ⁹⁷ Scholars like Steven Mithen and Emily Black express their doubts on the oasis theory on account of its particularity. ⁹⁸ However, historical records confirm that villages and towns first appeared around or in close proximity to water points: rivers, ponds, springs and lakes. Many of the early civilizations, in fact, flourished around water bodies. The Ganges, Nile, Euphrates and Tigris, and Huwand Ho rivers, but to name a few, were sites of ancient human settlement and origins of civilization. ⁹⁹ Water also determined the nature and direction of human migrations. ¹⁰⁰

The accessibility of water is a vital component of socio-economic development. Swift and sustainable developments have been registered in water abundant areas in temperate zones.¹⁰¹ Countries that have serious water shortages faced serious difficulties in realizing their development programs.¹⁰² It is an obvious fact that inadequate, inaccessible, and unsafe water supplies have greatly restrained the health status, economic growth, food security, biodiversity and environmental sustainability of societies or countries.

⁹⁶William P. Cunningham and Marry Ann Cunningham, *Environmental Science: A Global Concern*, 8th Edition (New York: McGraw-Hill, 2006), P.361; David Clapham, *Small Water Supplies: A Practical Guide* (London: Spon Press, 2004), p. 2.

⁹⁷Steven Mithen and Emily Black, *Water, Life and Civilization: Climate, Environment and Society in the Jordan Valley* (Cambridge, Cambridge University Press, 2011), p. 2.

⁹⁹M.R. Gunawardhana *et al.*, 'Changing Water Consumption Pattern of Beira Lake and its Effects to the City Image', in Feyen, Shannon & Neville (eds.), *Water and Urban Development Paradigm* (London: Taylor & Francis Group, 2009), p. 115.; Lida Schelwald-van der Kley and Linda Reijerkerk, *Water: a Way of Life: Sustainable Water Management in a Cultural Context* (London: CRC Press, 2009), p. 19.; Shasi K. Gupta, 'Decentralized Wastewater Treatment Technology: a Promise for the Future', in Naim H Afgan(ed.), Sustainable Development of Energy, Water and Environment Systems, *Proceedings of the 3rd Dubrovnik Conference* V-3 (Dubrovnik, Croatia 5 - 10 June 2005), p. 322.

¹⁰⁰Stephen J. Vandas *et al.*, P. 9.; Environmental Protection Agency, *A History of Drinking Water Treatment* (US, February, 2000), p.1; William Beinart, 'African History and Environmental History', *African Affairs*, 99, 2000, p. 269; Wehr Kevin, *America's Fight Over Water: The Environmental and Political Effects of Large-Scale Water System* (New York: Routledge, 2004), p. 33.

¹⁰¹Falkenmark, 'Rapid Population Growth and...., p. 82.

¹⁰²Falkenmark, 'Global Water Issues Confronting ..., p. 179.

Water points also serve as a center of cultural exchange. People often establish contacts and share their experiences, ideas, and cultures while tapping water from a common point. Jerome Delli Priscoli explains that since the time of ancient Rome public water points standing amidst a village or an urban center have been serving communities as places of quenching thirst and for the purpose of cultivating civic culture. Springs, ponds, rivers and lakes have had similar purposes. The infiltration and dissemination of new ideas and lifestyles have been more pronounced in urban centers than in rural areas. This is largely due to geographical and social factors. Settlements in most rural areas were and still are geographically scattered. Social contact and interaction among members of these scattered communities was/is less frequent because each village seemed to have or use its own springs and/or ponds.

The expansion of water supply infrastructure and the exploitation of both the surface and ground water have had an influence on the environment. In the second half of the 20th century, expropriation of surface and ground water increased by more than three-fold. Patty Limerick mentioned the growing appetite and competition for water among groups such as agriculturalists, urban dwellers, recreational water users, fishermen, national parks. He also reported on the confrontation between people living around a water source and its destination as the volume of water dwindled. Transporting water from one area to another reduces the water volume and causes a change in the environment, both in the source and downstream areas. In Ethiopia, the drying up of Lake Haramaya is attributed to, apart from other factors, the unguided exploitation

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¹⁰³Jerome Delli Priscoli, 'Evolution of Public Involvement in Water Planning', in Clifford S. Russell and Duane D. Baumann(eds.), *The Evolution of Water Resource Planning and Decision Making* (UK: Edward Elgar Publishing Limited, 2009), P. 64.

¹⁰⁴J. Donald Hughes, *An Environmental History of the World: Humankind's Changing Role in the Community of Life.* 2nd Edition (US: Routledge, 2009), pp. 190-191.

¹⁰⁵Patty Limerick, 'Water Development: the Plot Thickens', in Sackman Douglas Cazaux, (ed.), *A Companion to American Environmental History* (UK: Wiley Blackwell, 2010), p. 380.

of the lake water by farmers and urban domestic consumers. 106 Such reckless utilization of a water resource has an effect on the ecosystem as a whole. 107

Having this in mind, the following section will discuss the theoretical issues in relation to the development of drinking water supply infrastructure and the accompanying social, economic, cultural and environmental impacts.

Construction of Water Supply Infrastructure

"When the wells dry, we know the worth of water." ¹⁰⁸

Benjamin Franklin (1706-1790)

Since ancient times human beings have always strived to access drinking water and colonizing the surroundings of water bodies. They have also attempted to purify it (by the standard of the time) using various methods. People built aqueducts to transport water from distant areas since Roman times. To make the water safe, they used charcoal, exposing it to sunlight, boiling and using straining methods. 109 They also made every effort to protect (where the water was secure. easier to get, and treatable) water sources such as springs, hand-dug wells, rain water, boreholes/tube wells, public standpipes/taps, household connections. 110 Some of these water sources are, in fact, recent in origin. Ancient and medieval cities, for instance, did not have

¹⁰⁶The World Bank Agriculture and Rural Development Department, Ethiopia: Managing Water Resources to Maximize Sustainable Growth: A World Bank Water Resources Assistance Strategy for Ethiopia (Washington, World Bank, 2006), p.16.; I had observed expanded irrigation agriculture on both sides of the lake while I was attending my B.A. Degree at Haramaya (the previous Alemaya) University.

¹⁰⁷Dassalegn, p. 1.

¹⁰⁸Vandas et al., p. 16.

¹⁰⁹Stephane Frioux, Environmental History of Water Resource; Environmental Protection Agency, the History of Drinking Water Treatment (United States, 2000), p. 1.; Frederick W. Pontius, Drinking Water Regulation and *Health* (US: John Wiley & Sons, 2003), p. 5. ¹¹⁰Gronwall, pp. 219-220.

access to standpipe/tap and house to house connection water systems. 111 The causal effect of unsafe (contaminated) water for microbial diseases was not known. Drinking water pollutants, particularly those that are not visible by the naked eyes and its effect on health, are believed to have been put to investigation between 1850 and the late 1880s. Cholera as a waterborne disease, for instance, was discovered in 1855 by epidemiologist Dr. John Snow. 112 Likewise, William Budd explored the transmission of typhoid fever infection from human execration by means of water. 113 With industrial revolution and rapid urbanization, scarcity and poor quality of water became life-threatening issues. The 19th century cholera and typhoid outbreaks in the early industrialized and urbanized countries added momentum to any effort in examining the causal agent of water for microbial diseases and providing safe drinking water. Constructing water infrastructure became a necessity as the size of urban centers and the problems of water washed and water-borne diseases increased. In the 19th century, water and sewerage networks were installed in most urban centers and the water that was to be consumed should be treated before being distributed. But, the high price of water that private suppliers charged was exorbitant and hindered universal water supply development. 114

For much of the 20th century, water supply development endeavors were predominantly run by the government. During this period, when modernization theory was in its heydays, the state was viewed as a driving force of progress including water development. Many states embarked on building dams and reservoirs on a larger scale, and they perceived infrastructure developments as a demonstration of modernization and nation building. The post-World War II period, in particular, witnessed extensive water development activities for agricultural, industrial, and

¹¹¹Bakker, pp. 55, 56, 84.

¹¹²Environmental Protection Agency, p. 1; David Clapham, p. 77.

¹¹³David Clapham, p. 78.

¹¹⁴Bakker, pp. 55, 56, 84.

household use, as well as for the protection of the ecosystems and public health.¹¹⁵ Yet, domestic water supply had not been given greater attention. This was partly because lending agencies did not enforce or give it primary importance. In addition, development was not seen as a means to tackle poverty related issues.¹¹⁶

This trend began to change in the 1960s. This attitudinal change is partly attributed to the World Health Organization (WHO) that made an effort to show the strong correlation between consumption of safe water and sound health. He as it may, getting access to safe and adequate drinking water remained a serious challenge for the developing world. The 1976 report of the WHO affirmed that about two-third of the population in the developing countries lacked access to safe and adequate drinking water. This alarming water shortage, threatening the health of the population, the economic development, and the natural environment, compelled governments to give priority to water related undertakings. As water consumption increased and adequate supply became impossible, the notion that water would restrain most human activities permeated many societies. Eventually, the discussion by concerned bodies on how to improve access to water became a relevant issue of dialogue. The 1976 UN Habitat Conference in Vancouver and the 1977 UN's first Water Conference in Mar Der Plata were instances of the concern on water-oriented issues at a global level. The Mar Der Plata conference drew attention to the need to conserve and protect water from contamination and misuse and to

¹¹⁵Ibid., p. 56.

¹¹⁶Ibid., p. 59.

¹¹⁷Ibid.

¹¹⁸Bondi D. Ogolla, 'Water Pollution Control in Africa: A Comparative Legal Survey', *Journal of African Law*, 33, 2 (Cambridge University Press, Autumn, 1989), p. 149.

¹¹⁹Libor Jansky et al., 'Enhancing Public Participation and Governance in Water Resources Management', in Libor Jansky and Juha I. Uitto (eds.), *Enhancing Participation and Governance in Water Resources Management: Conventional Approaches and Information Technology* (Tokyo: United Nation University Press, 2005), p. 3.

¹²⁰R.A. Meganck and A. Szöllösi-Nagy, 'Introduction', in Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity* (London: Taylor & Francis Group, 2009), p. iX.

make available safe drinking water and sanitation for all by 1990. Its resolution led to the declaration of the years between 1981 and 1990 as Drinking Water Supply and Sanitation Decade. Despite some developments, however, the decade did not bring significant improvements on water supply problems¹²¹ of the developing world. By 2002, about 1.1 billion people lived without sufficient and safe drinking water globally. Hence, accessing drinking water remains a major challenge of the 21st century.¹²²

Currently, a vast majority of the people in the world do not enjoy reasonable access to adequate and safe drinking water. Only a few countries of the world have attained an optimal access level. Many hindering factors have been suggested for the failure of a number of countries to reach at the stage of optimal access. The relevance of myriads of setbacks in relation to the water supply infrastructure development is less disputable among scholars. Thus, the discussion below will focus on the debatable issues of scarcity versus abundance of freshwater, and the governance of water resource.

The adequacy or inadequacy of the existing freshwater for domestic consumption, agricultural, and industrial uses in a rapidly growing population with varying and rising demands for better living standards, increased pollution and climatic variability is open to question. There are two opposing views: the one propounding the depletion of freshwater in time and space and the subsequent growing menace of scarcity, while the other advocates the adequacy of freshwater. The first presents the depletion of freshwater with the intention that it is a crucial obstacle to expanding access to sufficient safe drinking water, whereas the latter gives more weight to the

¹²¹John Kalbermatten, Water Tech US: a Program for Helping Developing Nations, *Journal* (American Water Works Association), 81, 10, October, 1989, p. 40.

¹²²K. Vairavamoorthy, 'Innovation in Water Management for the City of the Future', in Jan Feyen *et al.*(eds.), *Water and Urban Development Paradigms: Towards an Integration of Engineering, Design and Management Approaches, Proceedings of the International Urban Water Conference*, Heverlee, Belgium, 15–19 September, 2008, p. 3.

problems in connection with the spatial distribution of freshwater, and governance of water supply infrastructure development and service provision.

The pro-scarcity proponents, Eldon D. Enger et al., for instance, explain the potential threat of freshwater scarcity in the world in connection with uneven distribution, rising demand and human-induced impacts. They underpin their argument with the studies of the United Nations and the International Joint Commission (a joint U.S.-Canadian organization that studies shared water bodies between the two nations) which show the shortage of freshwater and the potential threats that would come with it. 123 In support of Eldon D. Enger et al.'s view; Robert W. Christopherson writes about the shortage of freshwater supply in 80 countries since 1995. He also highlights the damage of insufficiency of freshwater inflicted on ecology, agricultural and industrial production, human health and international peace. 124 B. Schultz et al. maintain that currently the scarcity of freshwater is a critical problem in Northern China, Central Asia, in adjacent areas of India and Pakistan, the Middle East, parts of Europe and Southern and Northern Africa, Western South-America, and the middle and western areas of the United states. ¹²⁵ While Benny Joseph warns about the exhaustion of water resource at a global level, ¹²⁶ Igor S. Zektser sees the problem in the 60 percent dry land area of the earth. Libor Jansky et al. also disclose information on water scarcity plaguing in several countries. ¹²⁸ In 2009, K. Khatri et al. cited 30

¹²³Eldon D. Enger *et al.*, *Environmental Science: A Study of Interrelationship*, 10th Edition (New York: McGraw-Hill, 2006), pp. 353 -354.

¹²⁴Christopherson, pp. 263, 267.

¹²⁵B. Schultz and S. Uhlenbrook, 'Water Security: What Does It Mean, What May It Imply?', in Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity (London*: Taylor & Francis Group, 2009), pp. 46-47.

¹²⁶Benny Joseph, *Environmental Studies*, http://highered.mcgraw-hill.com/sites/0070590923., p. 35.

¹²⁷Igor S. Zektser, *Ground Water and the Environment: Applications for the Global Community* (London: Lewis Publishers, 2000), p. 1.

¹²⁸Jansky *et al.*, p. 3.

water stressed countries in the world, of which 20 were under serious water scarcity. ¹²⁹ As Malin Falkenmark argues, because of the domination of the idea of the water rich temperate countries water is not perceived as a finite resource. As she puts it, this is just a loss of sight to water scarcity. For her water scarcity is a serious problem confronting humanity. ¹³⁰ In a nutshell, the volume of freshwater has been alarmingly dwindling and threatening life since the second half of the 20th century. Freshwater scarcity, therefore, greatly hinders any effort in expanding access to adequate and safe drinking water across the world. Rhona MacDonald elucidates this by saying that the provision of adequate safe water is a big challenge since the total volume of freshwater in the world has been shriveling to less than one percent. ¹³¹

In spite of the above warnings, the pro-adequacy group advocates the existence of sufficient amount of freshwater that can be used for various purposes for the world population. Jenny T Gronwall, Roberto Lenton and Mike Muller, the United Nation Development Program (UNDP) and William P. Cunningham and Marry Ann Cunningham are the proponents of the availability of adequate freshwater on our planet. They challenged the idea of scarcity by arguing freshwater is not a scarce resource at global level, but a resource unevenly distributed. For them the problem of accessing adequate safe drinking water emanates from uneven distribution, not from scarcity. Apart from the problem of distribution, the pro-adequacy group also emphasizes the impacts of users' competition on the limited water sources, dearth of appropriate infrastructure, poor service delivery and the unfairness of distribution. ¹³² Some scholars also attributed the problem of water

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¹²⁹K. Khatri et *al.*, p. 81.

¹³⁰Falkenmark, "Global Water Issues Confronting ...", pp. 178-179, 183.

¹³¹Rhona MacDonald, 'Providing the World with Clean Water: Remains a Complex Problem, But Time is Running Out', *British Medical Journal*, 327, 7429 (December 20-27, 2003), p. 1417.

¹³²Gronwall, p. 29.; Roberto Lenton and Mike Muller, 'Introduction', in Roberto Lenton and Mike Muller (eds.), *Integrated Water Resource Management in Practice: Better Water Management for Development* (London: Earthscan, 2009), p. 1.; William P. Cunningham and Marry Ann Cunningham., p. 366.

scarcity to technological constraints. 133 William P. Cunningham et al. expound that shortage of capital in the developing countries is the major problem that has prevented them from collecting, storing, purifying and distributing water from their sources. 134 Therefore, the problem of water supply is embedded more with the socio-political and economic conditions than with the allegedly natural dearth of freshwater. As Jenny T Gronwall notes:

Essentially all the relevant literature from the past fifteen years recognizes that socio-political and socio-economic factors- social structure, law, norms, institutions, and power inequalities-play important role in relation to water access. There is thus a need to develop more functional means to administer and arrange for access to drinking water. 135

Amy Stewart and Tim Gray disclose the idea that water is not only a finite resource, but also the volume of freshwater is diminishing across time. They actually emphasize that the worldwide predicament emanates more from governance problems than scarcity per se. Their idea is anchored on the view that there is a sufficient amount of freshwater at a global level if it is managed and developed properly. This argument, as they assert, is in line with the view of the United Nation Development Program. For UNDP "the roots of the crisis in water can be traced to poverty, inequality, and unequal relationships, as well as flawed water management policies that exacerbate scarcity." ¹³⁶

It is worth noting that many scholars, who tend to overstate the impact of the socio-economic and politico-cultural variables on the water supply infrastructure development, do not neglect the influence of climatic change and the subsequent reduction of the volume of water. This is evidenced from the work of K. Vairavamoorthy, Jenny T Gronwall, Larry A. Swatuk and G.J.

¹³³Falkenmark, 'The Massive Water Scarcity Now Threatening Africa: Why Isn't It Being Addressed', Springer: Ambio, 18, 2 (1989), p. 113.

¹³⁴William P. Cunningham and Marry Ann Cunningham, p. 366.

¹³⁵Gronwall, p. 29.

¹³⁶ Amy Stewart and Tim Gray, the Governance of Water and Sanitation in Africa: Achieving Sustainable Development through Partnerships (London: I.B. Tauris, 2009), p. 1.

Alaerts. 137 K. Vairavamoorthy sees climatic change as a serious setback for building and maintaining water infrastructure along with technological and financial constraints. 138 Jenny T Gronwall mentions the lowering of water tables and the reduction of natural flows as crucial elements that put pressure on ecosystem, making the availability of freshwater for drinking and for agricultural activities, increasingly difficult. 139

Regarding a policy-oriented debate on freshwater scarcity, Larry A. Swatuk pinpoints the shortage and uneven distribution of freshwater in South Africa. However, he gave more weight to the profound historical and social inequalities in determining water development efforts than natural factors. Although G.J. Alaerts does not talk about the sufficiency or inadequacy of freshwater for human consumption in the contemporary world, he underlines climate change as a serious limiting factor for expanding better water supply and sanitation facilities. Despite the challenges of exponential growth in demand for water due to increased urbanization and poverty, the major threats, as to him, are inefficient water use, unreliable service delivery, poor performance of institutions and human induced climatic change. 141

Both pro-scarcity and pro-adequacy groups agreed upon the dearth of freshwater in some areas of the world, and the abundance in other parts taking the extreme aridity of Atacama and similar deserts and the greatest humidity of Brazil, democratic Congo¹⁴² as examples. A number of scholars espouse similar opinions related to the mounting of non-human and human-induced impacts on the volume of water on earth. Moreover, though two-third of the earth's surface is

¹³⁷Vairavamoorthy, p. 3.; Gronwall, P. 25.; Larry A. Swatuk, pp. 43-44.; G.J. Alaerts, 'Knowledge and Capacity Development (KCD) as Tool for Institutional Strengthening and Change', in Alaerts & Dickinson (eds.), *Water for a Changing World – Developing Local Knowledge and Capacity (London*: Taylor & Francis Group, 2009), p. 6.

¹³⁸Vairavamoorthy, p. 3.

¹³⁹Gronwall, P. 25.

¹⁴⁰Larry A. Swatuk, pp. 43-44.

Alaerts, p. 6.

¹⁴²Falkenmark, "The Massive ...", p. 113.

covered by water, the majority to be precise 97.22-97.6 percent is saline water. Only the remaining 2.4-2.78 percent is freshwater (non-saline and non-oceanic) which can be used for domestic consumption, agriculture, and other uses. And still less than 0.08% of the available freshwater is easily accessible for consumption.¹⁴³

Thus, it can be argued that there is some common understanding between the pro-scarcity and pro-adequacy proponents regarding the depletion of freshwater across time and space. The central element of the debate primarily rests on giving priority to the inadequacy of available freshwater or the socio-cultural, political and economic constraints in dealing with the problem of accessing adequate and safe water at a global level.

The second part of the theoretical discussion focuses on the governance of the water infrastructure development and related issues. What does governance mean? What does water governance signify? How does governance in general and water governance in particular affect the water development process? These are the basic issues in which this section attempts to clarify. More than one actor may exist in managing the water infrastructure development and the service provision. The nineteenth century water supply service witnessed the ascendancy of private dealers in the world's leading countries. Towards the end of the century, governments began to replace private companies because of rapid population growth in the cities and the inability of the latter to meet the growing demand for water. ¹⁴⁴ Private companies ceased to play a part in developing and managing drinking water supply. ¹⁴⁵ But, since the late twentieth century

¹⁴³Joseph, p. 35.; P.P. Singh *et al.*, *Teaching of Environment: New Trends and Innovations* (New Delhi: Deep and Deep Publication Pvt. Ltd., 2007), p. 179.; Stephen Merrett, *An Introduction to the Economics of Water Resources: an International Perspective* (London: UCL Press, 1997), p. 4.

¹⁴⁴Pontius, pp. 3, 10.; Bakker, pp. 32-33.

¹⁴⁵Gupta, p.108; Syafruddin Karimi, 'Public Participation and Water Resources Management: The Case of West Sumatra, Indonesia', in Libor Jansky and Juha I. Uitto (eds.), *Enhancing Participation and Governance in Water*

the concept of 'governance' pervaded the discourse on the water supply infrastructure development. First of all, it is important to look into the origin and meaning of the two concepts: governance and water governance.

Although information is scarce when the term governance was first coined, according to L.A. Swatuk, it appeared as a state policy in the west following the fragmentation of the Soviet Union that heralded the end of the Cold War and the popular uprisings in the third world countries demanding the end of authoritarian rule. ¹⁴⁶ Several scholars define the term governance. According to Cecilia Tortajada governance is an intricate procedure that involves the decision making of the state, public institutions, private sector, civil society and the society at large. ¹⁴⁷ Bakker defines it as 'a practice of coordination and decision making between different actors which is invariably inflected with political culture and power. ¹⁴⁸ Pierre defined as:

Governance refers to a sustaining coordination and coherence among a wide variety of actors with different purposes and objectives, such as political actors and institutions, corporate interests, civil society, and transnational organisations. The main point here is that political institutions no longer exercise a monopoly of the orchestration of governance ... Governance is shorthand for the predominant view of government ... It is also ... more palatable than 'government' which has become a slightly pejorative concept. 149

L.A. Swatuk buttressed the definition of governance as 'both outcome and process, involving a variety of legitimate and authoritative actors. As an outcome it reflects settled social relations... as a process it depends on the reiteration of activities that deepen trust.'

Resources Management: Conventional Approaches and Information Technology (Tokyo: United Nation University Press, 2005), p. 21.

¹⁴⁶Swatuk, 'Toward good water governance', p. 250.

¹⁴⁷Cecilia Tortajada, 'Rethinking Water Governance', in Jan Feyen et al.(eds.), Water and Urban Development Paradigms: Towards an Integration of Engineering, Design and Management Approaches, *Proceedings of the International Urban Water Conference*, Heverlee, Belgium, 15–19 September, 2008, p. 523.

Bakker, p. 8

¹⁴⁹ Swatuk, 'Toward good water governance', p. 250.

¹⁵⁰Ibid.

Likewise, there is no specific meaning for water governance. L.A. Swatuk has presented the Global Water Partnership's definition of water governance as a 'range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services at different levels'. 151 After indicating existing differences and debates among scholars particularly on the ethical and political aspects of water governance, Cecilia Tortajada writes that all the economic, social, political and administrative organisations and institutions and their linkage with the water resources development and management are constituent parts of water governance. 152 The UN World Water Development report reveals the social, economic, environmental and political dimensions of water governance, representing 'equitable use', 'efficient use', 'sustainable use', and 'equal democratic opportunities' respectively. 153 The report also pinpoints transparency, equity, accountability, coherency, responsiveness, integrative and participatory approaches along with ethical considerations as crucial elements in relation to water governance. 154 Disregarding these elements would lead to "bad governance" and the impact of which may include overpumping of groundwater; indiscriminate borehole location; "self-help" "management"; upstream abuse; pollution; the increase in the number of people with no/limited access to potable water; deterioration of infrastructure; land degradation leading to siltation; increase/decrease run-off/infiltration; depletion of fisheries; eutrophication; invasive species/water hyacinth proliferation etc. 155 Peter Rogers et al. present the meaning of governance as 'in the eyes of many technical persons (engineers, economists and development

¹⁵¹Ibid., p. 252.

¹⁵²Tortajada, p. 524.

¹⁵³Swatuk, 'Toward good water governance', p. 252.

¹⁵⁴Gupta, p. 106.

¹⁵⁵Swatuk, 'Toward good water governance', p. 252.

planners, for example) governance is just about laws, regulations and institutions, typically exogenously given.' 156

Despite location and context specific in nature, similar patterns of administration and uncertainties have been widely registered in the history of water governance due to varied converging forces. J. Gupta divided these converging forces into two: early forces and modern forces. While the first consists of civilization, religion and conquest (Roman, Napoleonic, Colonialism), the latter includes ideology (capitalism, or communism), codification, epistemic communities (engineers), environmentalism, and globalization. These converging forces at times acted contrary to domestic policies.¹⁵⁷

In the 20th century, there were three models of water supply administration: the municipal hydraulic paradigm, the market environmentalist model and the Community-Run Water Supply Systems. The earliest model is the "municipal hydraulic" paradigm, a paradigm employed for the provision of other urban infrastructures as well like electricity, gas, telephone, etc.¹⁵⁸ This paradigm based itself on the assumption that water is an abundant resource and by using hydraulic technologies it is possible to satisfy the growing public demand for water. It emphasizes the positive ties between economic growth and increased water exploitation. Though capital intensive, it worked by means of subsidization, or the social equity principle. Accordingly, the water system was not metered with the intention to maintain public interest.¹⁵⁹ Since the 1980s, the market environmentalism and private utility model emerged owing to the failure of the municipal hydraulic paradigm based on the high cost of building dams and related

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¹⁵⁶Peter Rogers *et al.*, 'Political Decision Making: Real Decisions in Real Political Contexts', in Clifford S. Russell and Duane D. Baumann (eds.), *The Evolution of Water Resource Planning and Decision Making* (UK: Edward Elgar Publishing Limited, 2009), P. 220.

¹⁵⁷Gupta, pp. 102-103.

¹⁵⁸Bakker, p. 52.

¹⁵⁹Ibid., p. 32.

other unwanted effects such as extinction of species, displacement of communities, flooding of cultural sites, contamination of water sources, disruption of ecological processes and environmental degradation. The market environmentalism and private utility model based itself on the notion of the restoration of ecology and economics. Private utility model gives due emphasis to water conservation and protection of the environment. It questions the positive correlation between economic growth and water exploitation set by the "municipal hydraulic" model. Thus, attention was shifted from expanding the supply to the proper utilization of the available sources by means of developing the practice of conservation, new water supply technologies, alternative supplies (gray water, reclaimed waste water, desalinated water and recycling water), metering, as well as new tariff structures, and educating consumers on ethic of water use. The private sector was proprietor of the infrastructure, though its participation varies in type and extent across regions. In developed countries, for instance, the private sector was entrusted with the management of urban water supply network, ecological restoration and water quality improvement. But, in the rural areas of the lower and middle income countries, reform on prices and market had been focused on the irrigation sector. Yet, the private sector's involvement in the fields of urban water supply grew steadily. In the main, market environmentalism and the private utility model is distinguished by the privatization of resources, the commercialization of environmental management and the liberalization of governance. 160

The third model of water supply governance is the community-run water supply systems. Bakker explains it as 'local in nature, using small-scale (or "appropriate") technology, community systems mobilize local labor and community participation, and although they are articulated with formal structures of government, they almost invariably vest governance at the community

¹⁶⁰Ibid., pp. 35-38.

level.¹⁶¹ Scholars discern two intermingling approaches with regard to the practices of community-run water supply system: for profit and not-for profit approaches. However, the water management agencies and engineers had been challenged by the practices of community water supply. Where the centralized management system is discerned by simplification, standardization, and homogenization, community-run water supply systems is heterogeneous and unruly, particularly where organizations are large (public or private). The centralized management system emphasizes systematized and de-contextualized knowledge, and fails to offer due attention to political and cultural or external factors.¹⁶²

Karen Bakker notes on market, state and governance failures in relation to the water supply system. Market failure denotes the incapacity of private purveyors in making drinking water accessible to all. The state/government/ and governance failures signify the ineffectiveness of the state and/or the political, organizational and administrative bodies in the field. As to Bakker, however, governance failure had much to do with the collapse of the municipal hydraulic and the market environmentalism paradigms. Why is it so?

Structuring matters in line with governance instead of government may entail the shifting of the already established state-centered authority to non-state actors. J. Gupta explains the intricacy of this structural adjustment as 'such a shift raises several critical issues regarding how one should locate power and authority in the area of water governance, who should pay for water governance, and whose knowledge is to be taken into account.' These questions provoke debate on decentralization versus centralization, and stakeholder and private sector participation.

¹⁶¹Ibid., p. 39.

¹⁶²Ibid., pp. 39-43.

¹⁶³ Ibid.

¹⁶⁴Ibid., p. 53.

¹⁶⁵Gupta, p. 106.

The importance of water for life has made more complicated the question of who possesses and manages the water development and service, price and investment.¹⁶⁶

There is debate among scholars on giving priority to either decentralized or centralized form of governance. Scholars like Dassalegn Rahmato, Fasil G. Kiros, and K. Khatri *et al.*, just to name a few, prefer decentralized to centralized form of governance. Dassalegn Rahmato favors decentralized authority where decision-making should follow a bottom-up approach as it engenders opportunity for the participation of the ordinary people. Furthermore, he affirms that decentralization allows beneficiaries to plan and implement small-scale projects by themselves. ¹⁶⁷ Fasil G. Kiros on his part explains the pitfalls of employing a top-down approach in expanding water supply facilities; he cautiously remarked: 'previously every rural community took responsibility for the water points it needed; they now look to the state to perform the work. ¹⁶⁸

As to K. Khatri *et al.*, the problems with regard to expanding water supply infrastructure in the developing countries is not only lack of technology, but also the imposition of the top-down approach (centralization), and the failure to consider the role and knowledge of local stakeholders. K. Khatri *et al.* insist that:

Community organisation and people empowerment seem to be key elements in the process of implementing better water projects and management. ... Public participation was the most significant factor in achieving successful implementation of the projects. ... The communities learn to deal with tradeoffs in the decision-making process; it becomes clear that an overall optimum decision does not exist, and the best possible solution is only achieved through

¹⁶⁶David A. McDonald and Greg Ruiters, 'Theorizing Water Privatization in Southern Africa', in David A. McDonald and Greg Ruiters (eds.), *The Age of Commodity: Water Privatization in South Africa* (UK: Earthscan, 2005), p. 1.

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¹⁶⁷Dassalegn, pp. 27-28.

¹⁶⁸Fasil, p. 183.

¹⁶⁹K. Khatri *et al.*, pp. 93-94.

negotiation and consensus. On the other hand, it must be recognized that this process strongly depends on reliable information systems, on enhancing capacity for technical knowledge, and on raising awareness to better perceive the fragility of water uses and their sustainability. 170

Hence, they conclude that lack of stakeholders' involvement in less developed countries has greatly restrained the expansion of water supply infrastructure. 171

According to Lois Wright Morton and Susan S. Brown, allowing citizens and communities in solving water-related problems is preferable because, among others, it garners voluntary engagement in conservation practice. 172 In their article entitled "Manpower development for water and sanitation programs in Africa", Michael G. McGarry and Eric J. Schiller took up their idea which reads: "without community participation, the installation of piped delivery systems would rarely be possible in the rural areas of developing countries." ¹⁷³

Many scholars, in fact, support the top-down approach, an approach which accentuates centralized government authority and control. R. G. Feachem, for instance, notes that for most people community participation would imply and embrace 'bottom-up planning', 'felt needs', 'local perceptions', 'motivation', 'latent development potential', 'catalytic development inputs', and 'integrated development at the village level'. For Feachem, these concepts are intricate and vague. The fact that community participation encompasses the combined effort of the government and the local people, development endeavors remain ineffectual given that there are

¹⁷⁰Ibid., p. 94.

¹⁷¹Ibid., p. 96.

¹⁷²Lois Wright Morton and Susan S. Brown, 'Pathways to Better Water Quality', in Lois Wright Morton and Susan S. Brown (eds.), Pathways for Getting Better Water Quality: the Citizen Effect (New York: Springer Science + Business Media, 2011), p. 6.

¹⁷³Michael G. McGarry and Eric J. Schiller, 'Manpower Development for Water and Sanitation Programs in Africa', Journal (American Water Works Association), 73, 6 (June 1981), p. 282.

people who have different ideologies to that of the government, as Feachem argues. ¹⁷⁴ Ademiluyi, I. A. and Odugbesan, J. A., likewise, remarked that community based water development should be encouraged only when the government is unable to run such projects. They believe that community based water schemes prove futile and, most of the time, serve only for a brief period. ¹⁷⁵ In addition to overuse, pollution, expertise and management challenges, Baker raises the problem of garnering cooperation and coordination concerning community involvement in drinking water development and service provision. ¹⁷⁶

J. Gupta outlines both the strength and limitations of the two approaches. Though decentralization has a significant role in effective implementation, promoting cost-effective execution, improving local democratic control and enforcing governments to be democratic and accountable, it brings fragmentation, lower quality or non-harmonized decisions and a great deal of power politics at the local level. 177 It is clear that stakeholder participation creates a room for public involvement in decision making, and this would enhance legitimacy, compliance pull and effectiveness of law and policy. It is recognized that the indigenous knowledge of the local people is useful to solve their own problems. But, the problem is that it needs bureaucratization and is costly. Moreover, unless some rewarding mechanism is put in place, there are tasks in which the poor are unable to participate well. 178 J. Gupta argues that the greater local participation, the more diverse local policies emerge which, in turn, causes disagreement at regional and national level. Finally, he concludes his discussion by suggesting the need to create

¹⁷⁴R. G. Feachem, 'Community Participation in Appropriate Water Supply and Sanitation Technologies: The Mythology for the Decade', *Proceedings of the Royal Society of London*, 209, 1174 (Jul. 28, 1980), pp. 20, 24.

¹⁷⁵Ademiluyi, I. A. and Odugbesan, J. A., 'Sustainability and Impact of Community Water Supply and Sanitation Programs in Nigeria: An overview', *African Journal of Agricultural Research 3* (12) (December, 2008), pp. 816-817.

¹⁷⁶Bakker, pp. 41-42.

¹⁷⁷Gupta, p. 107.

¹⁷⁸Ibid., pp. 107-108.

suitable working conditions for all. ¹⁷⁹ He mentions four crucial grounds in favor of centralization. These are ensuring public ownership of the water resource; developing harmonized policies; solving challenges with holistic efforts and having trained human resource. ¹⁸⁰

The involvement of the private sector in the water infrastructure development has been an issue of debate among scholars. Those who support the privatization of drinking water have been faced with the question of price, public health, employment, political control, environmental and other issues of urban service. Despite those challenges, they argue that government control has been plagued with embezzlement, unaccountability, unimaginativeness and improper financial utilization and hence this situation prevented communities from expanding and upgrading water services on their own in a reliable and cost-effective manner. Ademiluyi, I. A. and Odugbesan, J. A. support privatization of water services in the developing countries, but it should not be a replica of the developed nations, they argued.

To conclude, the theoretical assumption that the currently available fresh water is adequate for human consumption and hence the water supply problem is strongly tied with governance and socio-economic problems is more important to deal with the water supply work in Amhara region. This is because the availability of adequate fresh water for the consumption of the current population of Ethiopia in general and Amhara region in particular is so far certain. Many agree on the notion that 'Ethiopia is the water tower of East Africa'. The Amhara region is the main contributor of this water through its major trans-boundary rivers like Abbay and Tekeze.

¹⁷⁹Ibid.

¹⁸⁰Gupta, p. 107.

¹⁸¹Committee on Privatization of Water Services in the United States, *Privatization of Water Services in the United States: An Assessment of Issues and Experience* (Washington D.C.: National Academy Press, 2002), p. 10.

¹⁸²McDonald and Ruiters, p. 1.

¹⁸³Ademiluyi, I. A. and Odugbesan, J. A., p. 816.

Besides, it has a number of big rivers which empty to the Awash River system. Although much of the water discharges to the neighboring countries, there are also a great number of perennial springs and streams in the highland ¹⁸⁴ areas of Ethiopia, the geographical feature which characterizes much of the Amhara region. About 110 billion m³ surface water exists in Ethiopia per annum. ¹⁸⁵ The lowland area is rich in ground water which is about 2.6 billion m³ and not well exploited yet. ¹⁸⁶

This research does not stick itself only to one of those models and approaches discussed above to frame the water supply infrastructure development in Amhara region. The study covers the period of three governments having different ideology. This means that each government practiced models and/or approaches of water supply infrastructure development which go well with its own ideological bent. Therefore, the models and approaches mentioned above are vital to my discussion.

Socio-economic Development

For economic and social developments to be registered in a locality, be it a region and/or the world, a healthy and productive human resource, among others, is crucial. This could be maintained through providing adequate and safe drinking water. It is, in fact, difficult to pinpoint precisely the correlation between getting safe water and public health given that there are other factors that influence the quality of public health such as the availability of nutritious foods,

¹⁸⁴Mateos Mekiso, 'Water and the Environment in Ethiopia', in P.G McCornick (eds.), Integrated Water and Land Management Research and Capacity Building Priorities in Ethiopia, Proceedings of MOWR/EARO/IWMI/ILRI International workshop Held at ILRI,(Addis Ababa, Ethiopia, 2-4, December, 2002), p. 115.

¹⁸⁵Admasu Gebeyehu, 'Research and Development in Land and Water Resources', in P.G McCornick (eds.), Integrated Water and Land Management Research and Capacity Building Priorities in Ethiopia, Proceedings of MOWR/EARO/IWMI/ILRI International workshop Held at ILRI, (Addis Ababa, Ethiopia, 2-4, December, 2002), p. 3

¹⁸⁶Mateos Mekiso, p. 115.

housing, health and educational facilities. 187 To alleviate health-related problems an integrated approach is essential. It is an established fact that having safe and sufficient drinking water is an important scheme to ward off water-washed and water-borne diseases provided that the daily water intake meets the required quantity, quality, accessibility, affordability and continuity. 188 Scholars agree that adequate and safe drinking water could play a pivotal role in enhancing socio-economic development. It is interesting to mention Eshelby's note to the 2015 Millennium Development Goals. He supported prioritizing the goal of reducing the number of people without access to safe and adequate drinking water to achieving universal primary education and reducing child and maternal mortality. This is because attaining universal primary education and curbing child and maternal mortality depend on getting access to safe and adequate drinking water to be realized. 189 Eshelby argues that immense investment in education is futile when students are unable to attend school due to diarrhea, or a good number of girls cannot go to school assisting their mothers at home or fetching water from distant areas. By taking the experience of Britain, he also argues that sanitation should be given priority even before building health centers. 190 In fact, there are records of similar attempts in other countries, including the developing nations. These countries gave priority and allotted handsome budgets for water supply infrastructure development. Among the less developed countries, Ethiopia (during the military regime), Tanzania and Mozambique are mentioned as examples in giving priority and working on rural water supply development program. ¹⁹¹

¹⁸⁷Asit K. Biswas, 'Water for the Third World', Foreign Affairs, 60, 1 (fall, 1981), pp. 154-155.

¹⁸⁸World Health Organization, *Guidelines for Drinking-water Quality*, Third Edition, Volume 1 (Geneva: WHO Press, 2008), p. 90.

¹⁸⁹Kate Eshelby, 'Dying for a Drink', British *Medical Journal*, 334, 7594 (March, 24, 2007), p. 610.

¹⁹⁰ Ibid.

¹⁹¹McGarry and Schiller, p. 282.

Providing sufficient and hygienic water certainly improves the status of health. What is puzzling here is whether there are universally accepted water quantity, quality, accessibility, and affordability standards in order to maintain the expected outcomes. Information is scarce about the existence of unanimous information on the above yardsticks. The World Health Organization recommends that the minimum requirement of water an individual should take is 20 liters per day for survival. 192 The volume of water required per day is important as much as the water quality so as to improve health. Some scholars offer due value for the volume of water an individual consume per day. As to K. Biswas, for instance, under consumption of potable water, no matter how safe it may be, is not an assurance to realizing better health. Mentioning that the minimum ration of water needed for survival varies due to many factors such as bodily constitution, climatic condition, and the type of work an individual performs, Biswas surmises that the amount of safe water needed for survival (20 liters per person per day) does not guarantee better health. Apart from the two variables (the quality and quantity of drinking water), Biswas also puts emphasis on the need for improving the educational level of the society. 193 Lack of education on the value of consuming adequate and safe water threatens health equal to the dearth of water because of the absence of adequate provision (quantity), service reliability or continuity as well as affordability and physical inaccessibility.

George E. Halkos *et al.* explain that the value of having access to adequate and safe water goes beyond warding off water-washed and water-borne diseases and easing the burden of collecting it. In their work on sub-Saharan Africa they argue that providing safe water has an impact on

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¹⁹²Bakker, p. 148.

¹⁹³Biswas, p. 157.

improving the economy.¹⁹⁴ Yet again, the positive correlation between having access to safe and adequate drinking water and economic growth remains debatable. Some scholars contend that access to adequate and safe water does not always bring about economic development. In fact, improving accessibility to drinking water reduces the time and the work burden of women and children and this gives them the opportunity to go to school or to engage into economic activities. Having access to adequate and safe water actually reduces the number of death and the amount of money to be spent for medication. However, saving time and money, and securing a healthy human resource must be properly harnessed and geared towards enhancing economic development.¹⁹⁵ Once more, in a situation where water resources are not evenly distributed in all countries or regions, socio-economic development cannot be guaranteed since the unequal holding of the resource ushered to disputes.

Water and Culture

"When it rains, collect the water." 196

Burmese proverb

In cultural anthropology, culture is often referred to as "the system of shared beliefs, values, behavior and symbols that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning." ¹⁹⁷In other words, people's cultural traits have influenced how people conceived and valued, understood and

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¹⁹⁴George E. Halkos *et al.*, 'The Effect of Access to Improved Water Sources and Sanitation on Economic Efficiency, The Case of Sub-Saharan African Countries', *South African Journal of Economics*, 80, 2 (June, 2012), p. 260.

p. 260. ¹⁹⁵Tom Slaymaker, Water, Livelihoods and Growth: Concept Paper Research-inspired Policy and Practice Learning in Ethiopia and the Nile Region, p. 4.

¹⁹⁶Lida Schelwald-van der Kley and Linda Reijerkerk, p. 88.

¹⁹⁷Ibid., p. 10.

managed, used and abused or worshipped and desecrated water. 198 Perception on the value, quantity and quality of water varies across cultures due to the difference in cultural beliefs and practices. In some countries of the temperate zone, water is perceived as an infinite resource. Such erroneous perception did not make people understand the actual water stress problem. 199 Eldon D. Enger and Bradley F. Smith assert that if the public perceived water as limitless and inexpensive resource, conservation would not be encouraged. Explaining that scarcity is a source of innovation, they argued "increasing scarcity, competition, and arguments over water in the first quarter of the 21st century could dramatically change the way we value and use water and the way we mobilize and manage water resources." On the problem of conservation, William P. Cunningham and Marry Ann Cunningham note that "price and policies have often discouraged conservation". They contend that high water price makes beneficiaries to be economical in their water usage and this in turn advance conservation. In addition, governments adopt water use policies that may not encourage conservation. For instance, the policy of 'first in time are first in right' is accompanied by the policy of 'use it or lose it'. Thus, for fear of losing their rights individuals may use water extravagantly. 201 Moreover, when there is a shortage of water, late appropriators are forced to lose their share partially or entirely their rights to water.²⁰² But, as to Gabra-Emanuel Tekka, high water price discourage consumers use of safe drinking water which in turn affects their health.²⁰³

¹⁹⁸Ibid., p. 4.

¹⁹⁹Falkenmark, "Global Water Issues Confronting", p. 178.

²⁰⁰Enger *et al.*, pp. 353-354.

²⁰¹William P. Cunningham and Marry Ann Cunningham., P. 390.

²⁰²Ray Huffaker, 'Finding a Modern Role for the Prior Appropriation Doctrine in the American West', in Chennat Gopalakrishnan *et al.* (eds.), *Water Resource Development and Management* (New York: Springer-Verlag Berlin Heidelberg, 2005), p. 188.

²⁰³Gabra-Emanuel Tekka, *Water Supply - Ethiopia: An Introduction to Environmental Health Practice (Addis Ababa: AAU Press, 1977)*, p. 195.

Water Supply and the Environment

Keeping the wellbeing of the environment is crucial to preserve the natural resources and augment the environment's capacity for development, while the unwise use of resources pollutes and/or degrades the environment and interrupt progress.

The construction of water infrastructures such as dams, canals, boreholes etc. affect the surface of the earth.²⁰⁴ Though it has been practiced since ancient times, extensive bore drilling practices in the 20th century in particular had inflicted serious damages on the subsurface hydrological cycle.²⁰⁵ The UN Conference on Environment and Development in Rio in 1992, and the 2002 UN Millennium Development Goals underlined the interdependent nature of water and the environment.²⁰⁶ In fact, water resource development and the environment are influenced each other positively and negatively. There were many instances of water development projects that affected the environment as there were many water related projects that contributed a lot for the wellbeing of the environment. The building of large dams is a case in point either for benefiting or negatively affecting the environment.²⁰⁷

Conclusion

This chapter presents the conceptual and theoretical frameworks of the study. Accessibility, inaccessibility, integrated water resource management and development are the main concepts that have been dealt with.

²⁰⁴Vandas *et al.*, p. 9.

²⁰⁵W.M Edmunds, 'Silent Springs: Ground Water Resources under Threat', in Julie Trottier and Paul Slack (eds.), *Managing Water Resource: Past and Present* (New York: Oxford University Press, 2004), p. 14. ²⁰⁶Alaerts, pp. 5-6.

²⁰⁷Asit K. Biswas and Cecilia Tortajada, 'Changing Global Water Management Landscape', in Asit K. Biswas *and* Cecilia Tortajada · Rafael Izquierdo (eds.) *Water Management in 2020 and Beyond* (Berlin: Springer-Verlag Berlin Heidelberg 2009), p. 21.

Scholars discern the concepts accessibility and inaccessibility using four parameters: the distance consumers travel to fetch water, the time they spend for travelling, the volume of water they collect, and the level of health risk they face. The same yardsticks are employed to classify accessibility as basic access, intermediate access and optimal access. Yet, water is often inaccessible for a great number of urban dwellers due to unreasonable price and unreliable service delivery apart from physical inaccessibility. These problems commonly characterized the water supply services of developing countries like Ethiopia. It puts under question the adequacy of the abovementioned parameters used for delineating an area either as accessible or inaccessible and classifying accessibility further down to basic access, intermediate access and optimal access to safe drinking water. Therefore, some precision are lacking on the designation of areas as accessible or inaccessible and for ranking accessibility further unless it considers financial affordability and the service reliability. In fact, scholars could not offer an agreeable or a coherent meaning to some of the concepts discussed before. The dynamism of development, for instance, had enforced them reach on a conclusion that it is unstable term.

The second half of the 20th century was eventful. It witnessed among others an intense rivalry between the two super powers that steamed from the difference in ideology, the independence of the ex-colonies and efforts to achieve development at global level. Recently independent states in Africa, Asia and Latin America embarked on development endeavors soon after the liberation. But, most of them failed achieving development despite some initial success. Scholars argue that it was the intricacy of achieving development in the backward countries that incited them to come up with varied development alternatives one after the other. The successive rise of modernization, structuralist, dependency, alternative, post-modernism and the like theories were cases in point.

This chapter has also assessed the varied theoretical views with respect to water supply infrastructure development. The leading theoretical debate talks about prioritizing the impact of the deteriorating fresh water or the socio-economic and politico-cultural variables in accessing safe drinking water. There is also difference among scholars on issues of approaches and strategies. Many of them espouse an extreme stand in the exploitation of either bottom-up or top-down approach. Similarly, privatizing the water supply work has remained a debatable issue. However, some scholars contemplate all approaches vital and advise policy makers to critically examine existing working conditions so as to determine the type of approach that would go with the needs and conditions of specific areas.

Obviously, consuming safe and adequate drinking water has noticeable impacts on water-washed and water-borne diseases. Accordingly, there is consensus among scholars on the direct health impact of having access to safe and adequate drinking water. But, the available literature questions the correlation between economic development and access to safe and adequate drinking water. This is because; economic improvement requires additional inputs in order to make the healthy human resource productive.

Cultural differences in water use, conservation and consumption patterns have been related to the volume of water available in a particular area. Commonly, people living in water abundant areas perceive it as infinite resource. In other words, they are oblivious to the water scarcity problem. In these localities thus the cultural setting does not encourage conservation practices. The consumption pattern too is dependent upon the volume water available. Yet, the education background of the society has a lot to do with the enhancement of water conservation and consumption level.

The link between water construction work and environmental wellbeing is extremely strong. While a well guided water work enriches the environment, a reckless water development damages it. Environment friendly water projects are often recommended. Such projects actually need to be governed by workable water laws, rules and regulations.

The following chapters recount the history of water supply infrastructure development and the accompanied socio-economic impact in Amhara Region in the framework of the aforesaid theories, approaches and strategies.

Chapter Two

Historical and Geographical Setting

Political and Physical Landscape of the Study Area

The administrative region identified by the term Amhara has survived since ancient times with its border being enlarged and contracted in different periods. In the medieval period it was known as Bete-Amhara.²⁰⁸ It was the largest province of the Christian Highland Kingdom.²⁰⁹ Though the exact date of its establishment is not known, Amhara is mentioned in the literature since the Aksumite period. Tadesse, for instance, wrote about a campaign by the king of Aksum to the province of Amhara:

[The king] led 150 priests from Aksum to Amhara and assigned them (to teach?) there. As he came out of Tigrè he camped at Wäyna-Däga (and had) with him 60 tabots...when he counted his troops there were found (among them) 180, 150 dressed in coats of mail. Taking these he went to another country in Innarya, one month's journey away...²¹⁰

Hussein also refers to the Amhara province while discussing the political and cultural geography of Wollo. As stated by Hussein, Amhara was one of the political administrative units of the Zagwe Kingdom²¹¹ whose political significance heightened during the so-called Solomonic period.²¹² Yet, there is no adequate information about its genesis. However, many scholars touched up on the geographical limits of the Amhara province. Most of them are in agreement on

²⁰⁸Hussein Ahmed, *Islam in 19thc Wollo, Ethiopia: Revival, Reform and Reaction* (Leiden: Brill, 2001), p. 5.; Asafa Jalata, 'The Ethiopian State: Authoritarianism, Violence and Clandestine Genocide', *Journal of Pan African Studies*, Vol.3, No.6, March 2010), p. 96.

²⁰⁹Hussein, p.4

²¹⁰Tadesse Tamrat, *Church and State in Ethiopia*, 1270-1527 (Oxford: Clarendon Press, 1972), p. 35.

²¹¹Hussein, pp. 4-5.

²¹²Ibid.

the territorial extent of the medieval Amhara covering roughly present-day Southern Wollo which was bounded by the Mille River in the north, the Beshilo River in the west, the Sotola - Woleqa River in the South west and the Wonchit River (which encompassed the present Wore – Ilu) in the south east. ²¹³ Other scholars stretched the boundary. Trimingham, for instance, extended it further by including the provinces of Angot (a medieval province whose geographical area extended from Alamata River in the north to Lake Hayq in the south), Begemdir with Debre Tabor, Wolqayet, Dembiya, Wogera, and Semen. Amhara, according to Trimingham, had twenty provinces. ²¹⁴ Yet, his description is incomplete as there were Amhara settlements in east Gojjam and Shawa (particularly of the districts of Merabete, Menz, Geshe, Gerarya, Wogda, Selalesh and the adjacent areas of Fatagar) that are not at all included in his geographical description of the Amhara region. ²¹⁵

Five major historical developments can be discerned with respect to the expansion, contraction and/or amalgamation of the Amhara inhabited areas as a political unit until 2005. The first one is the rise to power of the 'Solomonic' dynasty in the 13th century. This dynasty first originated and established its centre in the then Bete-Amhara area but it soon moved to Shawa primarily to keep the Muslim assault at bay. ²¹⁶ Beyond Amhara and Shawa, the 'Solomonic' kings gradually incorporated many non-Amhara areas through conquest: the south and southeast parts of Shawa, Damot, Gafat, Genz, Waj, Sharka, Dawaro, Bali, Worjih, Fatagar, Hadya, Gidim, Angot, Begemdir, Dembiya, Simen and even the oldest political centers of Lasta and Tigre. ²¹⁷ Levine

²¹³Hussein, p. 4.; Merid Wolde-Aregay, 'Political Geography of Ethiopia at the Beginning of the Sixteenth Century', in *Congresso Internazonale di Studi Etiopici I* (Roma, 1974), p. 621.; Donald N. Levine, *Wax and Gold: Tradition and Innovation in Ethiopian Culture* (US: The University of Chicago Press, 1972), p. 72.

²¹⁴J. Spencer Trimingham, *Islam in Ethiopia* (London: Oxford University Press, 1952), p. 23.

²¹⁵Merid, pp. 620-622; Trimingham, p. 64.

²¹⁶Andargachew, p. 2.

²¹⁷Tadesse, p. 133.

presents almost similar lists of areas existed under Amhara supremacy.²¹⁸ In the process, Amhara settlements in tandem with Christianity had expanded to the south, west and south west of the Amhara province.²¹⁹ Habtamu, for instance, tells us about the entrance of a greater number of Amhara-speaking Christian people to East Gojjam (a predominantly Agew inhabited area) during the first decade of the 15th century.²²⁰ Tadesse consolidates this assertion and confirms that there was a complete Amhara occupation and Christianization of the same area.²²¹ Apart from Eastern Gojjam, those areas listed by Tadesse like Shawa north of Awash, Dembiya, and Wogera had been completely semitized (from the sense of becoming Amharic speaking) and Christianized. 222 Consequently, a number of non-Amharic speaking areas prior to the accession to power of the 'Solomonic' dynasty began to be identified as Amhara. 223

The second major historical development is the Oromo population movement. Unlike the previous historical event, the Oromo population movement had a contraction effect on the territorial extent of the Christian highland kingdom in general and Amhara holdings in particular. This is for the simple reason that much of the areas of the heart land of Amhara and those previously integrated within the dominion of Christian Highland Kingdom had been slipped in the hands of the Oromo people. The Oromo penetrated the medieval Amhara province as of the last quarter of the 16th century. They entered to the Amhara province from three directions: northern, northeastern and southern. Those Oromo clans who occupied northern Amhara advanced to the region from the east through the Borkena, Robi and Mille River valleys. The

²¹⁸Levine, p. 75. ²¹⁹Tadesse, p. 397.

²²⁰Habtamu Mengistie, 'Lord, Zega and Peasant in Eastern Gojjam, c.1767-1901' (M.A Thesis, Department of History, Addis Ababa University, 2003), p. 7.

²²¹Tadesse, p. 203.

²²²Ibid., p. 397.

²²³Harold G. Marcus, *The Life and Times of Emperor Menelik II Ethiopia*, 1844-1913(Oxford: Clarendon Press, 1975), P. 19.; Levine, p. 2.

other Oromo clans followed the lower Jema, Wonchit, and Wolega river valleys and occupied much of the southern Amhara. The eastern section of Amhara was also taken up by the Oromo.²²⁴ In the main, by the end of the 16th century, the Oromo had almost occupied the whole Amhara province except some enclaves in the highlands of the later Wore-ilu, Lega-Hida, Legambo and Amhara-Saint districts. 225

The Oromo expansion had thus brought changes to the political geography of the Christian highland kingdom. To begin with, it had ended the political centrality of Shawa and Amhara. The Oromo settlement in the then Amhara province had particularly greater impact in isolating Shawa and Tigre and reconfiguring the empire as a whole. The Christian highland kingdom shifted its seat to the north and its political geography had been restricted only to the north of the Abbay River. Above all, the geographical boundary of the Amhara province had been greatly contracted to the extent that the province disappears from the medieval map of Abyssinia. Once they occupied the area, the new settlers changed the names of the Amhara areas and conferred them the names of their clans for their respective settlements as seen from the names Wollo, Wore-ilu, Wore -Himenu, Wore - Qalu, and Wore -Babu etc. Then after, scholars used the term Amhara to refer to those areas situated north of the medieval Wollo and beyond the Beshilo river for Wadlana Delanta and Begemdir throughout the period of the Zemene Mesafint and even later. 226 This confirms the idea that the Amhara people had well implanted themselves far in the north starting long before the Oromo expansion and penetration of the Amhara province.

The third major historical development is the move to reunify the Ethiopian empire. The process of reunification, leading eventually to the creation of the modern state of Ethiopia, was initiated

²²⁴Hussein, p. 14.

²²⁵Trimingham, p. 196. ²²⁶Marcus, P. 19.; Trimingham, p. 196.

by emperor Tewodros II (r.1855-1869) and it was consolidated by emperor Yohannes IV (r.1872-1889) and completed by emperor Menelik II (r.1889-1913), the architect by and large of present-day Ethiopia.²²⁷ Though his unification plan was not successful, emperor Tewodros had endeavored to create a unified Ethiopia. 228 The reign of emperor Yohannes IV witnessed a loose federation of states with relatively a well defined territory of four administrative units: Gojjam and Keffa, Shawa and its satellites, Gonder and Simen, and Tigray and its dependencies. These provinces were ruled by subordinate regional rulers such as king Teclehaymanot of Gojjam and king Menelik of Shawa. 229

Regarding the reign of Emperor Menelik II, two things are worth noting. The first is the completion of unification which had invigorated the political centrality of Shawa. ²³⁰ Secondly, it restored the leading position of the Amhara in Ethiopian politics almost after a lapse of four centuries (the period since the arrival of the Oromos in the Amhara province, further north and the west to the Menelik era). Emperor Menelik went one-step further than his immediate predecessors in creating a lasting empire. Though his military campaign was conducted in the name of restoring his grandfather's land, he ultimately created a state of multi-ethnic nation. After instituting ministerial offices in 1907, Menelik made the political administrative division of his empire by 1908. This division encompassed 34 administrative regions established on the basis of ethnic composition and geography. Functioning throughout the reign of Iyasu as well as the early period of Haile Selassie I, Menelik's administrative division was maintained up until the Italian occupation.

²²⁷Getachew Haile, 'The Unity and Territorial Integrity of Ethiopia', *The Journal of Modern African Studies*, 24, 3

⁽September, 1986), pp. 465-466.

²²⁸ Christopher Clapham, *Transformation and Continuity in Revolutionary Ethiopia* (Cambridge: Cambridge University Press, 1988), p. 27.

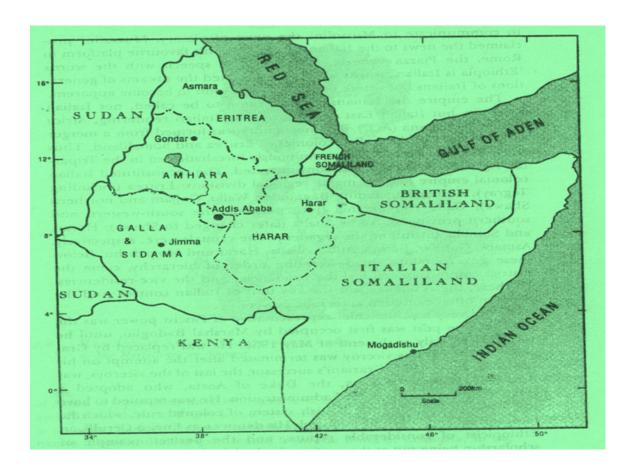
²²⁹Getachew, p. 466.

²³⁰Ibid., p. 467.

The Fascist occupation period (1935/6-1941) is the fourth major historical interlude in relation to the recreation of a political administrative unit bearing the name Amhara. The Italians created five administrative regions namely: Eritrea, Amhara, Addis Ababa (later changed to Shawa), Galla [now Oromia]-Sidama, Harar, and Italian Somaliland (together with Ogaden), making Asmara, Gonder, Addis Ababa, Jimma, Harer and Moqadishu as centers of Italian administration respectively.²³¹ The Italian Amhara is the precursor of the now Amhara regional state for the reason that it was not only conferred a similar name but also was formed on the basis of ethnic/linguistic lines. In terms of geographical coverage, the Italians and the present Amhara regional state adopted a roughly similar arrangement which incorporated Begemdir (now Gonder), Wollo, Gojjam and north Shawa.

²³¹Bahru Zewde, *A History of Modern Ethiopia*, 1855-1991, Second Edition (Addis Ababa: Addis Ababa University Press), p. 162.

Map - 1. The Italian political administrative division of Ethiopia



• From Bahru Zewde, A History of Modern Ethiopia, 1855-1991, Second Edition.

The Italian administrative division was changed with the liberation of the country in 1941. Three administrative reforms were made in the post-independence 20th century Ethiopia. The first reform was put into effect in 1942 by the restored government of Emperor Haile Selassie I. Initially, 12 Governorate-Generals (or *Täkelay Gezat* in Amharic) and three other lesser administrative divisions were established. With subsequent minor administrative restructuring following the union of Eritrea and the division of the province of Harerege into two, the number of Governorate-Generals (*Täkelay Gezat* in Amharic) became 14.²³² These were Eritrea, Tigray,

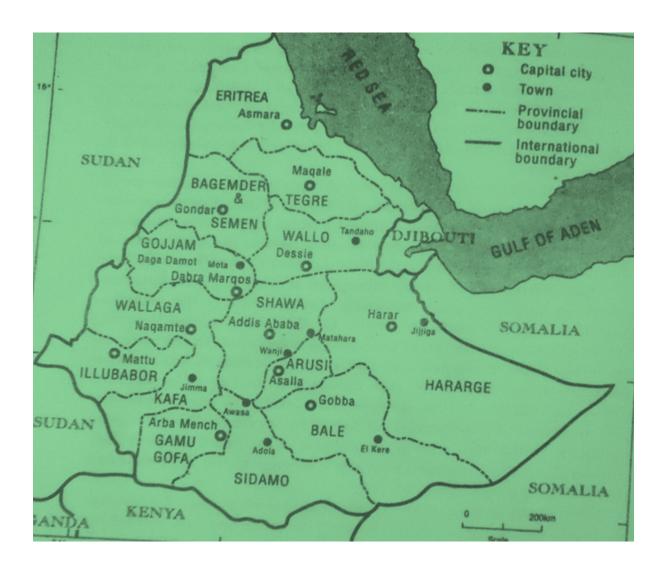
²³²Andargachew, p. 14.

Wollo, Gonder, Gojjam, Shawa, Arsi, Harerege, Bale, Sidamo, Gamu Gofa, Keffa, Illu-babor, and Wollega. It is worth noting that these Governorate-Generals were formed mainly based on geography although some scholars disagree. Below the Governorate-General (or *Täkelay Gezat* in Amharic), there were *Awrajja* (sub-province), *Woreda* (district) and *Meketele Woreda* (sub-district) administrative units. During the imperial period, there were 60 *Woredas* (districts) and 339 *Meketele Woredas* (sub-district). But, the same source does not mention about the number of *Awrajjawoch* (sub-provinces) of the imperial period. 234

²³³Christopher Clapham, 'The Horn of Africa', in Michael Crowder (ed.), *The Cambridge History of Africa, c.1940-1975*, Volume 8 (Cambridge: Cambridge University Press, 2008), p. 464.

²³⁴Ashenafi Shiferaw, 'Yä Ekonomi pelan Bä Ityopia Mächä na Enedète Täjämärä?', in Shiferaw Bekele(ed.), *Kä Dehenäte Wädä Lemate: Ewuqätene Lä Tewulede Masetälaläfe* (Addis Ababa: Forum for Social Studies, 2006 e.c.), p. 384.; The political administrative division of Governor-General (or *Täkelay Agär Gej* in Amharic) and the sub-divisions of *Awrajja* (sub-province), *Woreda* (district) and *Meketele Woreda* (sub-district) are mentioned to have been started for the newly conquered area of the south by emperor Menelik and as it were expanded to the north later by Emperor Haile Sellassie. See Simon D. Messing, 'Changing Ethiopia', *Middle East Journal*, 9, 4 (Autumn, 1955), pp. 725-726.

Map -2. The political map of Ethiopia during the Imperial and much of the *Derg* period.



• From Bahru Zewde, A History of Modern Ethiopia, 1855-1991, Second Edition.

The 1942 political administrative division had been functional throughout the imperial period. It had also served for much of the period of the military government despite some changes. The previous lowest administrative division *Meketele Woreda* (sub-district) was repudiated and replaced by *Qäbälè* early the military government took power. Similarly, *Ţäqlaye Gezat* (Governorate-general), the name of the highest administrative divisions was renamed as *Keflä*

Hagär (province).²³⁵ The new government changed the imperial administrative system entirely towards the end of its rule in 1987. 236 The Derg established the Institute for the Study of Ethiopian Nationalities in 1983, a body entrusted with the task of studying the ethnic composition of the country and proposing solutions for any problems arising from language and ethnic identity. Unfortunately, its research results were not tested or put into effect before long. The military government tried to apply the research works of the institute afterwards when it introduced a new arrangement on existing political administrative division in 1988. The new reform created 29 administrative regions, of which five of them, Ogaden, Assab, Eritrea, Dire Dawa, and Tigray were designated as autonomous; and Eritrea was given greater autonomy within which three sub-administrative regions were formed in line with the dominant local ethnic groups. The Assab administrative region was formed by combining all Afar inhabited areas of Eritrea, Tigray and Wollo. The formation of Ogaden and Dire Dawa administrative regions passed through a similar pattern of bringing together portion of provinces. Accordingly, the Ogaden autonomous region was formed through amalgamating the Somalis of the Southern Ogaden and Bale. Likewise, the Dire Dawa autonomous region was established through bringing together the area inhabited by the Issa of Dire Dawa and the environs bordering Djibouti. However, this arrangement was short lived and was entirely changed after the downfall of the military government in 1991.

It is worthy of note that although the process of administrative restructuring during the Imperial and the military rule (as some argue) did not deprive the Amhara from power, they did not create

²³⁵The administrative division of *Derg* had dissolved the *Meketele Woreda* (sub-district) administrative division apart from changing the name of Ţäqelaye Gezat (Governorate general) to Keflä Hagär (province), see Mesfin Woldemariam, *Adafenè: Ferehätena Mäkešäfe*, (Addis Ababa: Graphic Publisher, 2007 E.C.), p. 242. ²³⁶Clapham, p. 464.

a self-ruling Amhara political entity; rather they created and maintained a unitary and centralized multi-ethnic nation.

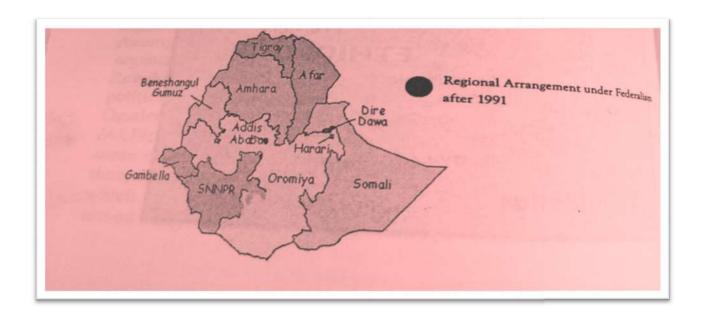
The fifth major historical development is the accession to power of the Ethiopian People Revolutionary Democratic Front (EPRDF) in 1991, an insurgent group that fought the military regime for years. The new government introduced new political administrative arrangement; namely ethnic federalism during the start of its rule, often dubbed as the transition period. The EPRDF created 12 regional administrative states and two city administrations. According to Harriet Allen, the formation of these regions was based on the pre-1987 administrative arrangement and the 1984 language survey. ²³⁷ John Young adds the influence of the research outcomes of the Institute for the Study of Ethiopian Nationalities established in 1983. 238 But, both writers do not clearly indicate how the pre-1987 arrangement of the Institute for the Study of Ethiopian Nationalities affected the new settlement. The regions have been reduced to nine together with some minor adjustments, as seen from the merger of several ethnic and linguistic groups to form a single regional state- the Southern Nations Nationalities and People (SNNP). 239 The political administrative unit of the present Amhara Region, the study area of this thesis, is one of the newly created regional administrations. It has been created by bringing together the four major provinces of the Amhara inhabited areas of Gonder, Gojjam, Wollo and North Shawa. It should be noted that the region encompasses Oromo, Agaw, Awi, and Qemant ethnic groups which have secured their own special administrative zone.

²³⁷Harriet Allen, 'After Mengistu: The Political Geography of Ethiopia since 1991', *Geographical Association*, 78, 4 (October, 1993), pp. 445-446.

²³⁸ John Young, 'Regionalism and Democracy in Ethiopia', *Third World Quarterly*, 19, 2 (Jun, 1998), Taylor & Francis, Ltd., p. 193.

²³⁹Mehret Ayenew, 'Decentralization in Ethiopia: Two Case Studies on Devolution of Power and Responsibilities to Local Authorities', in Bahru Zewde and Siegfried Pausewang (eds.), *Ethiopia: the Challenge of Democracy from Below* (Addis Ababa: United Printers, 2006), p. 135.

Map -3 -Regional States of Federal Ethiopia.



• From Solomon Barnabas, State, Change and Continuity in Ethiopia: Insurgency, Secession and Federalism (Addis Ababa: Lewis Printing Press, 2012).

In its geography, Amhara region is distinguished by rugged terrains, dissected plateaus, mountain chains, canyons, and numerous rivers and streams. Most of the Gojjam, Gonder and Wollo highland areas, known commonly as the north central massif, constitute grandeur ruggedness and the two main gorges of the Tekeze and Abbay rivers which are linked by the Yejju-Wadla Delanta natural bridge. West of the bridge are the Semen, Debre Tabor and the Choqe mountains. In the east there are the massifs of Amba Alage, Lasta and Wollo. The highland stretches from north to south up to the Shawa plateau and even beyond. The Lasta and Semen massifs are surrounded by the Tekeze George as the Choqe is by the Abbay George. The Wollo massif is bounded by three different Georges of the Jema in the south, Abbay in the west and the Beshilo River in the north. In the east it is bordered by the escarpment. The Jema George separated the highland of Shewa from the Wollo Massif. Similarly, the escarpment bordered the

Shewan plateau from the east and northeast. In the main, while the central area of Amhara region is dominated by highlands, the border areas in the east which extends to the escarpment of the rift valley area as well as those in the west bordering the Sudan are lowlands.²⁴⁰

The most striking physical feature and the one which has strong ties with the topic of this study is the drainage or river system. Ethiopia is often referred to as 'the water tower of north eastern Africa'. 241 There are eight major rivers namely: Abbay, Awash, Tekeze-Angereb, Omo-Ghibe, Wabishebele, Baro-Akobo, Genale-Dawa and Mereb-Gash. The drainage system of Amhara region constitutes the three major drainage systems of Abbay, Awash, and Tekeze-Angereb rivers. Besides, there are a great number of tributary rivers and lakes in the region. Despite this, the Amhara region in general experiences surface water deficiency and most parts of the region get sufficient water only for four to six months in a year. Sizeable pocket areas in the region get adequate water only for one to three months.²⁴² This is because most of the tributaries to the major rivers are not perennial in nature. This makes the building of reliable water supply storage system the only option.

History and Historiography of Water Supply Infrastructure Development

The African Scene

With great spatial and temporal variations, Africa gets an average rainfall of 670mm per year. Because of its location near the equator and its hot climate, evaporation is high. Renewable water

²⁴⁰Mesfin Wolde-Maryam, An Introductory Geography of Ethiopia (Addis Ababa: Berhanena Selam Printing Press, 1972), pp. 37, 41.

²⁴¹ Ibid., p. 52.

²⁴²National Archives and Library Agency (Hereafter NALA) Ethiopian Valleys Development Studies Authority, Preliminary Water Resource Development Master Plan for Ethiopia Final Report, Volume IX, Addis Ababa, June, 1990), pp. 6-7.

resource covers only 20 percent of the average total rainfall, which is not evenly distributed. The Sudano-Sahelian and South African regions, for instance, comprise only six and nine percents respectively. 243 Despite temporal variation and the amount of runoff, surface water is low per unit area on the continent.²⁴⁴ Average runoff, for instance, decreases from 20 percent in the wet tropical highland of Ethiopia to about 10 percent in the Sudano-Sahelian region, the area stretching from Senegal to Somalia. 245

Of the total water resource of Africa, ground water constitutes 20 percent. Nevertheless, only 10% of the continent's land is estimated to have high-yielding aquifers. Such geological factor, apart from others, widens the local variations of ground water availability in the continent.²⁴⁶ In Africa ground water is also the main source of domestic consumption on which three quarter of the continent's population have relied on.

Accessing sustainable and adequate drinking water is a serious challenge in the continent.²⁴⁷ Until recently, Africa ranked the lowest in the field of accessing safe drinking water. 248 The water supply coverage in some selected African countries for the period 1988 - 1993 is presented below.

²⁴³ African Minister's Council on Water, Status Report on the Application of Integrated Approaches to Water Resource Management in Africa, 2012, p. 3.

²⁴⁴Asit K. Biswas, 'Water for Food Production in Sub-Saharan Africa', *Geo Journal*, 15, 3 (Springer, October 1987), p. 234. ²⁴⁵Ibid.

²⁴⁶Ibid., p. 235.

²⁴⁷African Ministers' Council on Water, p. 3.

²⁴⁸European Communities and Water Utility Partnership, Better Water and Sanitation for the Urban Poor: Good Practice from Sub-Saharan Africa (Kenya, 2003), p. 9.

Table -1. Percentage of access to safe water in selected African countries

Country	Urban	Rural	Total
Ethiopia	80.0	11.5	19.0
Kenya	61.0	21.0	28.4
Tanzania	75.0	40.4	52.1
Ivory coast	100.0	75.0	82.8
Senegal	85.4	26.0	51.2
Zambia	76.2	42.8	58.9
Zimbabwe	100.0	13.5	35.5

Adapted from Dessalegn Rahmeto, *Water Resource Development in Ethiopia: Issues of Sustainability and Participation* (Forum for Social Studies, Addis Ababa, 1999), p.15.

This table makes clear the disparity between urban and rural water supply infrastructure development. It was too great even in those countries that had encouraging performance in the arena of accessing safe drinking water supply in urban areas. The water supply records of Ethiopia, Senegal and Zimbabwe are indicatives of this anomaly.

A study conducted in East Africa shows that the region was depended on imported technology throughout the 1950s and 1960s. The type of technology being used was appropriate for urban areas to which about 70% of water related financial aid and assistance were invested to solve water problems in urban areas. ²⁴⁹

²⁴⁹McGarry and Schiller, p. 283.

History and Historiography of Water supply Infrastructure Development in Ethiopia

The late 19th and the early 20th centuries had marked the introduction of modern infrastructures in Ethiopia. 250 Drinking water supply was one of the nascent infrastructural development endeavors in the country during this period. Like other modern establishments, drinking water supply in Ethiopia was first introduced by Emperor Menelik II. Emperor Menelik provided his imperial capital, Addis Ababa, with piped drinking water in January, 1893, seven years after its foundation. Despite a century long journey, the problem of drinking water in Ethiopia is still not fully solved. The progress in this area has been sluggish. Paulos mentioned about the absence of extension work in Addis Ababa from 1893 up to the Italian occupation of Ethiopia in 1935/36.²⁵¹ Tekeste indicates a rudimentary water supply infrastructure in Dessie which appeared since 1912.²⁵² Though, Paulos wrote about people's resistance to the early introduction of piped water, he did not talk about the spatial coverage of the water supply infrastructure development. Moreover, both writers do not mention whether the water supply infrastructure development by then was a carefully planned government activity or the work of some enlightened individuals. In fact, there is a gap in the records on the overall progress in this area. The history of the beginning and expansion of drinking water supply infrastructure development has been one of the least studied areas both in Ethiopia and the Amhara region. This has been the result of the shortcomings in the historiography of the country. For a long period of time, Ethiopian historiography has given greater emphasis to the political history of the country. Though recent

²⁵⁰Paulos Gnogno, *Ate Menelik* (London: Hotspur press, 1991), pp. 297-298.; Tekeste Melake, 'The Early History of Dessie' (Senior Essay, Department of History, Addis Ababa University, 1984), p. 13.

²⁵¹Paulos, pp. 297-298.

²⁵²Tekeste, p. 34.

developments witnessed the emergence of economic and social histories as major themes,²⁵³ the history of drinking water supply construction and its socio-economic impact remains one of the largely neglected areas of historical research. The meager studies that have been conducted regarding this theme focus on major urban centers only. Consequently, there is a serious lacuna in our understanding on how the societal, economic, political and cultural ambiance of the post-liberation twentieth century Ethiopia shaped the water supply infrastructure development. Specifically, information is scarce on the level of safe drinking water provision both in the rural and urban areas of the region, the role of stake holders in enhancing access to safe drinking water, the factors that affected the expansion of safe drinking water supply infrastructure development and the socio-economic changes that accompanied the nascent piped drinking water supply.

There are fragmentary written materials about the history of drinking water supply infrastructure development in Amhara region during the Italian occupation period (1936-1941). These sources give us limited information about the introduction of piped water supply infrastructure at Gondar, Kombolcha and Wore-ilu towns as well as an extension works made in Dessie town. The writers have treated the issue of water supply infrastructure development of this period in passing. Mesfin Wolde-Mariam, who accredited the Italians for accelerated urban growth in Ethiopia during the occupation period, does not also mention the expansion of drinking water

²⁵³Bahru Zewde, 'A Century of Ethiopian Historiography', *IES*, XXXIII, 2 (November 2000), pp. 11-15.

²⁵⁴ Solomon Addis, 'A History of the City of Gondar' (M.A. Thesis, Department of History, Addis Ababa University, 1994), p. 122.; Habtai Zarai, 'A Historical Development of the Town of Kombolcha, 1937-1974', (Senior Essay, Department of History, Addis Ababa University, 1987), p. 30.; Abbibi Husain, 'The History of Wärrä-ilu with a Particular Emphasis on the Town from Its Foundation(1870-71 to 1941)' (Senior Essay, Department of History, Addis Ababa University, 1990), p. 53.; Tekeste, p. 34.

supply infrastructure while he addresses the water supply infrastructure development of the postliberation period.²⁵⁵

Studies on the post-liberation imperial period also do not show significant shift regarding safe drinking water supply infrastructure development in Ethiopia. Mesfin-Wolde Mariam and Dassalegn Rahmato have briefly examined the state of safe drinking water supply infrastructure development of the country. While Mesfin discusses the issue of urban safe drinking water supply, Dassalegn deals with rural water supply. Both have confirmed the low level expansion of the water supply infrastructure and the scarcity of safe drinking water provision that accompanied it. Mesfin asserts that the absence of access to safe drinking water supply was a serious problem in urban areas up on which people were traveling long distances day in day out to fetch drinking water. However, Mesfin stresses more on the problem of getting safe drinking water than the burden of travelling long distances. He gives emphasis to the practice of using streams, rivers, ponds and springs for drinking, washing and sewerage disposal. Some households, in fact, had hand-dug wells in their compounds. These sources were largely unprotected and contaminated. Water related health problems remained the major threats of public health. While mentioning the dearth of safe drinking water supply, Mesfin also noted the public's belief towards water. He wrote: 'all water in Ethiopia is like the water of river Ganges-it is sacred and multi-purpose. In fact, there is an Ethiopian proverb which declares that there is no water that is not sacred'. 256 This popular belief seemed to emanate from lack of modern education and awareness. However, people in different localities applied different indigenous methods to uphold water supplies safe. Mesfin does not discuss traditional methods of

²⁵⁵Mesfin Wolde Mariam, 'Problems of Urbanization', *Proceedings of the Third International Conference of Ethiopian Studies*, 3, June 1970), p. 27.

²⁵⁶Ibid.

maintaining water safe in Ethiopia. He does not clearly delineate the border between lack of adequate water supply and absence of safe drinking water.

Dassalegn's brief study on 'Water Resource Development in Ethiopia' reveals the recent introduction and the very slow expansion of the rural water supply infrastructure development in the country. To start with, the beginning of rural water supply goes back to the late 1950s, roughly 70 years after the introduction of piped water supply in Ethiopia. Secondly, the water supply infrastructure development did not bring substantial progress throughout the imperial period. There was no institution responsible for developing water supply infrastructure in rural areas. In fact, the Water Resource Commission, a body entrusted with the planning and development of water resources, had been established during the late imperial period. But, its accomplishments were negligible and by the early 1970s, only one-tenth of the rural population had access to safe drinking water. As Dassalegn noted, absence of modern transport networks, among others, in remote rural areas was a serious impediment for the expansion of safe drinking water supply infrastructure.²⁵⁷

Until now, there is no comprehensive study on the history of safe drinking water supply infrastructure development in the area under investigation. There are actually some locally-focused research works done by Derb Tefera, Abdu Mohammed, Ewunetu Tegegne, Haile Belay, Habtai Zarai, Seletene Seyoum, and Solomon Addis. Derb's, 'A History of Infrastructural Development in South Wollo (1941-1991)', is generally concerned with the introduction and expansion of road, telephone and telegraph, postal service, electric power as well as water supply

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²⁵⁷Dessalegn Rahmeto, *Water Resource Development in Ethiopia*: Issues of Sustainability and Participation (Forum for Social Studies, Addis Ababa, 1999), p. 16.

infrastructure development in South Wollo. 258 Abdu's, 'A History of Dessie Town (1941-1991)', ²⁵⁹ Ewunetu's, 'A History of Debre Markos Town(1941-1991)', ²⁶⁰ Habtai's, 'A Historical Development of the Town of Kombolcha, 1937-1974, ²⁶¹ Seletene's, 'A History of Bahir Dar Town, 1934-1966E.C' 262 and Solomon's, 'A History of the City of Gondar', 263 are mainly focused on the political history of these towns, but all of them have attempted to look at the nature of urban facilities including that of safe drinking water provision. In fact, Haile's, 'Water Supply and Consumption in Dessie^{,264}, deals with the spatial distribution of the water supply infrastructure and the pattern of water consumption in Dessie town.

The above sources have dealt with a limited number of urban centers that had been provided with safe drinking water during the pre-Italians, as well as the Fascist occupation and the postliberation imperial period. Most of these towns got public water supplies during the postliberation imperial period. Bati, Debre Markos, Bahir Dar, Chafa (Woladi), Kuta Ber, Harbu, and Hayq are among those urban centers supplied with drinking water in the imperial period. ²⁶⁵ Dessie, Gondar, and Kombolcha, on the other hand, saw some extension works. ²⁶⁶ The sources clearly indicate the scarcity of safe drinking water provision and the consequent suffering of a great number of town dwellers. The shortage of safe drinking water supply, for instance,

²⁵⁸Derb Tefera, 'A History of Infrastructural Development in South Wollo, 1941-1974' (M.A Thesis, Department of History, Addis Ababa University, 2010), P. II.

²⁵⁹Abdu Mohammed, 'The History of Dessie Town, 1941-1991' (M.A Thesis, Department History, Addis Ababa University, 1997).

²⁶⁰Ewunetu Tegegne, 'A History of Debre Markos Town, 1941-1991' (M.A Thesis, Department History, Addis Ababa University, 2005). ²⁶¹Habtai Zarai, 'A Historical Development of the Town of Kombolcha, 1937- 1974', (Senior Essay, Department of

History, Addis Ababa University 1987).

²⁶²Seletene Seyoum, 'A History of Bahir Dar Town, 1934-1966 E.C' (M.A Thesis, Department of History, Addis Ababa University, 1988).

²⁶³Solomon Addis, 'A History of the City of Gondar' (M.A Thesis, Department of History, Addis Ababa University,

²⁶⁴Haile Belay, 'Water Supply Consumption in Dessie' (Senior Essay, Department of Geography, Addis Ababa University, 1998).

²⁶⁵Derb, p. 19. ; Ewunetu, p. 94. ; Seletene, p. 115.

²⁶⁶Abdu, pp. 111-112. ; Habtai, p. 30. ; Solomon, p. 122.

remained a serious challenge in the towns of Kombolcha and Debre Markos throughout the 1960s and 1970s.²⁶⁷ In 1963, for instance, only 1.5 percent of households had access to piped water supply in Debre Markos.²⁶⁸

The aforementioned writers have unanimously agreed on the slow progress of the water supply infrastructure development and the inadequacy of safe drinking water supply in their respective study areas. They also share the notion that the exponential growth of the population has exacerbated the shortage of water supply. But, all of them do not mention the water consumption or the distribution pattern of the available water sources. These things should be examined carefully because they have significant role in alleviating or aggravating the shortage of safe drinking water supply.

Sources indicate that water supply infrastructure development in Ethiopia was improved during the military rule. The military government, according to contemporary writers, exerted considerable efforts to enhance the volume of safe drinking water provision. To this end, it had taken two major measures. Firstly, it had established in 1981 the Water Supply and Sewerage Authority (WSSA), an autonomous body within the Water Resource Commission, which was in charge of the planning and developing of safe drinking water supply infrastructure in both the rural and urban centers except the capital, Addis Ababa. Secondly, having identified the dearth of safe drinking water provision in the rural areas, the military government paid attention to the implementation of a UN strategy which aimed at enhancing the supply of safe drinking water and sanitation facilities in developing countries as stipulated in the International Drinking Water

²⁶⁷Ewunetu, p. 94. ; Habtai, p. 30.

²⁶⁸Mesfin, p. 27.

²⁶⁹Dassalegn, p. 17.

²⁷⁰Michael G. McGarry and Eric J. Schiller, p. 282.

Supply and Sanitation Decade (1981-1990). The programs that were to be accomplished under the International Drinking Water Supply and Sanitation Decade (1981-1990) in Ethiopia coincided roughly with the ten years (1984-1994) development plan of the government. ²⁷¹ Several projects had been launched to solve the water supply problem of the rural society. The development of springs as a good source of safe drinking water is an excellent example. ²⁷² Though not fully realized, the military government attained significant headway during the International Drinking Water Supply and Sanitation Decade (1984-1994). ²⁷³

Written sources indicate that at the zenith of its power the military government had embarked on bringing scattered settlements of the rural population together through its villagization policy which was mainly intended to create suitable conditions for expanding infrastructural facilities including safe drinking water supply infrastructure in rural areas.²⁷⁴ This was the first organized move to provide the rural masses with safe drinking water. But, since villagization had not been properly planned and executed with adequate resources, ensuring the supply of safe drinking water in rural villages failed to bring the desired results.²⁷⁵

In summary, during the military period safe drinking water supply infrastructure development was relatively expanded both in rural and urban areas. As many of the studies affirm, the military government had offered highest priority and achieved greater success in the field of rural water supply infrastructure development.²⁷⁶ However, Dassalegn Rahmato has remarked on the strong

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²⁷¹Dassalegn, p. 16.

²⁷² Yezichalem Kassa and Feleke Tadele, 'Defining Local Needs: A Community-Based Diagnostic Survey in Ethiopia', 5, 3 (Taylor & Francis, August, 1995), p. 248.

²⁷³Dassalegn, p. 16.

²⁷⁴Helmut Kloos and Aynalem Adugna, 'The Ethiopian Population: Growth and Distribution', *the Geographical Journal*, 155, 1, Wiley-Blackwell (Mar., 1989), p. 35.; Christopher Clapham, p. 178.; Girma Kebbede, 'State Capitalism and Development: The Case of Ethiopia', *The Journal of Developing Areas*, 22, 1, October, 1987), p. 11. ²⁷⁵Clapham, p. 178.; Girma, p. 11.

²⁷⁶Dassalegn, p. 16.

urban bias, low beneficiary participation and meager community management prevailing in the field of rural water supply infrastructure development since the *Derg's* rise to power. He, in fact, stated that the transport network was improved during the *Derg* regime. This must have assisted the government to initiate an extensive water supply infrastructure development to the remote areas as well as to those regions that had been suffering from recurrent drought and a very chronic water supply deficiency.²⁷⁷

The same source indicated that drinking water supply in the rural areas of the Amhara Region was lower than other regional states of the country during the early period of the EPRDF government. In 1997, while only 8.3% of the rural population in the Amhara region had access to safe drinking water, it was 34%, 14.4% and 12.5% in the same year in the Tigray, Oromia, and Southern Nations, Nationalities and Peoples regions respectively.²⁷⁸

Sources consulted so far have overlooked three significant points. The first is concerning the indigenous methods of improving the quality of the available water sources. Traditionally, people have utilized both surface and ground water for drinking purpose putting some modest efforts to make them potable. The most commonly used method was developing water points, such as wells and springs in unreachable areas as well as erecting fences or digging diversion ditches for protecting sources from potential pollutants.²⁷⁹ Such practices, however, differ from locality to locality. The various methods of developing and protecting water sources in different localities and the effectiveness of these methods for keeping the purity of drinking water sources requires a thorough examination.

²⁷⁷Ibid., pp. 16, 18. ²⁷⁸Ibid., p. 14.

²⁷⁹Gabra-Emanuel Tekka, pp. 59-63.

The second point that was not discussed by the aforesaid writers is the place where the burden of transporting water rests. This task was entirely reserved for women and children. Despite some local variations, it has been the norm rather than the exception throughout Ethiopia and even in Africa at large. Governments' effort to expand access to safe drinking water supply, therefore, had a big implication in alleviating the enormous work burden levied upon women and children. This, in turn, assisted children of both sexes to go to school. The fact that not getting sufficient information on the accessibility of safe drinking water in the rural areas of the Amhara region has been a very serious problem. The study will endeavor to answer to what extent women and children had been freed from the burden of transporting drinking water due to the expansion of water supply infrastructures during the period under investigation.

The third point that was not discussed in most of the sources is the environmental impact of the water supply infrastructure development. In the second half of the 20th century, exploitation of both the surface and ground water was increased by more than three-fold. Patty Limerick mentioned the varied and growing interest of the agricultural water users, urban drinking water consumers, recreational water users, fishermen/women, national parks and other users over the limited water resource. He also put emphasis on the confrontation between people living in upstream and downstream areas as the volume of water dwindles and endangers the water demand of the people living near the water source. ²⁸² It is clear that any effort in transporting water from one area to another, no matter how the degree varies, jeopardizes the water volume both in the source and in downstream communities as the case may be. This event inevitably brings a change on the environment. In Ethiopia, the death of Lake Haramaya is attributed to,

²⁸⁰Fasil Gebre-Kiros, Introduction to Rural Development- a Book of Reading (AAU: IDR, 1977), PP. 183, 186.

²⁸¹J. Donald Hughes, pp. 190-191.

²⁸²Patty Limerick, p. 380.

apart from other factors, the unguided exploitation of the lake water by farmers and urban domestic consumers. ²⁸³ Such reckless utilization of water resource has an effect on the wellbeing of the ecosystem as a whole. ²⁸⁴ The following chapters will examine the environmental impact that the water development works have inflicted in different zones of the Amhara Region.

On the whole, there is no comprehensive study on the history of safe drinking water supply infrastructure development and its socio-economic impact in Amhara region. The scholarly works discussed above lacked both coverage and depth. In terms of coverage, the literature uncovers only the history of safe drinking water supply infrastructure development of a few major urban centers in the region. The historical introduction and expansion of safe drinking water supply infrastructure development in most urban centers as well as in the wider rural areas of the region is almost untouched. Regarding depth, the literature on the history of safe drinking water supply infrastructure development in the major urban centers of Ethiopia in general and in Amhara region in particular treats the subject in passing. Many of the sources consulted for this work do not discuss on how the societal, economic, political and cultural developments of the post-liberation 20th century Ethiopia affected the water supply infrastructure development. They do not point out the crucial actors that played vital role in the improvement of access to safe drinking water supply infrastructure, or the obstructing elements to the water development projects, as well as the overall achievements and failures. Furthermore, the sources almost entirely neglect the socio-economic aspect of the water shortage problem and the contribution of improved access to safe drinking water on the quality of life of the people. The motivation to

²⁸³The World Bank Agriculture and Rural Development Department, 'Ethiopia: Managing Water Resources to Maximize Sustainable Growth: A World Bank Water Resources Assistance Strategy for Ethiopia' (Washington, World Bank, 2006), p. 16.

²⁸⁴Dassalegn, p. 1.

undertake this study thus arose from the curiosity to uncover those historical developments and fill the lacuna of existing literature. Furthermore, this study is highly inspired by two paradoxical states of affairs that portray the Amhara region: the region's untapped natural resources and the Amhara people historical position on the one hand and the existential low level development on the other hand. It is in the Amhara Region that the big rivers of Abbay (Blue Nile) and Tekeze and their tributaries originate. The region also has many other big watercourses that drain to the Abbay, Awash and Tekeze River systems. Besides, it is the area where Lake Tana, Lake Zengena, Lake Hayq and the like are found. Historically, the Amhara people were politically dominant since medieval times. Despite the untapped water resource and political centrality of the region, access to safe and adequate drinking water remained a serious problem until very recently.²⁸⁵ Thus, the study will examine how the environmental, societal, political, economical as well as cultural circumstances of the post-liberation Ethiopia influenced the progress of safe drinking water supply infrastructure construction and the accompanied socioeconomic development registered in the region right from 1941 to 2005.

The year 1941 is taken as a landmark for the beginning of this study because it marked the end of the Italian occupation and the restoration to power of the imperial government that attempted to introduce the provision of modern facilities including safe drinking water supply to the wider areas. The year 2005 is taken as the ending point of this study given that it was a period where the EPRDF government started to initiate a number of profound socio-economic reforms.

²⁸⁵The Ministry of Water and Energy, National Water Development Report for Ethiopia (Addis Ababa, 2004), P. 8.

Chapter Three

Water Supply Infrastructure Development, 1941-1974

Introduction

The construction of modern infrastructure in Ethiopia traced its beginning back to the periods of Emperor Menelik II, Empress Zewditu and *Dejach* Teferi Mekonnen (later Haile Selassie I), and the brief Italian occupation period. These periods are accredited for the introduction of modern infrastructures, like road, telephone and telegraph line, electric power supply, and water supply system, etc. Nevertheless, the early infrastructures and amenities were seen in some major urban areas of the country. During the occupation period, for instance, the Italians had improved the water supply system of the town of Dessie and introduced new water supply installations in the towns of Gonder, Kombolcha and Wore-ilu. Yet, these establishments were either destroyed by the war of liberation or outdated due to long time service and stopped functioning in the post-1941 period.

Needless to say, the Italians had disintegrated all the pre-1935 social and political structures²⁸⁸ of Ethiopia. The war of liberation had inflicted greater damage on the physical and social

²⁸⁶Derb, pp. 4-10.

²⁸⁷The water supply system in Kombolcha and Worra-ilu can by no means qualify the standard. In Kombolcha the Italians introduced piped water but, it was serving only in the fascists barracks. In Wärrä ilu they had set up simply a well operated by a hand pump. Dessie and Gonder had relatively better water supply system. The water system in Dessie was first established in 1912 by a man called *Ras* Abate, hence *Ras* Abate Wuha (water). The Italians had expanded it through making additional public system from a place known as *Qurqur* located at the northern edge of the town. In a similar manner, they had established a new public system in Gonder town which was extended from the Ţägè *Mençoch* (springs) whose number was twelve. See Derb, p. 9.; For the case of Gonder see, NALA, Folder, 14.1.15, File, 14.1.15.3, Barsula Sermolo and Solomon Bekele Lä Kätämoch Wuha Na Fesaşe Derejit, 18, Sänè 1971.

²⁸⁸Mesfin Woldemariam, *Adafenè: Ferehätena Mäkešäfe* (Addis Ababa: Graphic Publisher, 2007 E.C.), p. 90.; see also Ashenafi Shiferaw, 'Yä Ekonomi pelan Bä Ityopia Mächä na Enedète Täjämärä?', in Shiferaw Bekele (ed.), *Kä*

infrastructure of the country. 289 Politically, disagreements surfaced in the immediate postliberation period between the emperor and leading patriots, the emperor and local rebels, and the emperor and the British.²⁹⁰ Members of the patriots who saw the exiled emperor as traitor defied his restoration to power. Local based revolt termed as the Wäyanè rebellion broke out in 1943 in eastern Tigray attributable to inefficient administration and corruption. Above all, the British who had helped the Emperor in ousting the fascist force prevented him from exercising full authority in the immediate post-liberation period. They had also threatened Ethiopian territorial integrity through occupying Eritrea and Ogaden. On the whole, these incidents that epitomized the 1940s coerced Emperor Haile Sellassie to spend much of his time to reassert the complete sovereignty of the country and create a centralized government. 291 It is, therefore, logical to discuss in brief the conditions for infrastructure development during the post-liberation imperial period before treating the main concern of the chapter.

Emperor Haile Sellassie embarked on reorganizing the shattered social and political structures as soon as he was restored to the throne. The emperor's primary ventures were re-establishing the political administrative divisions, alienating existing ruling class (the nobility) and collection of taxes. 292 12 Governorate-Generals (Täkelay Gezat in Amharic) and 3 other lower administrative divisions were established in 1942 which included later Eritrea and the province of Harerege (being divided into two) made the number of provinces 14.²⁹³ In that same year, a decree had

Dehenäte Wädä Lemate: Ewugätene Lä Tewulede Masetälaläfe(Addis Ababa: Forum for Social Studies, 2006 e.c.), p. 383. ²⁸⁹Ashenafi, p. 383.

²⁹⁰See Bahru Zewde, A History of Modern Ethiopia, 1855-1991, 2nd Edition (Addis Ababa: Addis Ababa University Press. 2002).

²⁹¹Eshetu Chole, 'Running to Keep the Same Place: Industrialization 1941 – 1974', in Shiferaw Bekele (ed.), An Economic History of Modern Ethiopia: The Imperial Era (1941 - 1974), I (Dakar: CODESIRA, 1995), p. 196.

²⁹²Donald Crummey, Land and Society in the Christian Kingdom of Ethiopia from the 13th to the 20th century, (Urbana: University of Illinois Press, 2000), p. 237. ²⁹³Andargachew, p. 14.

been issued that deprived the traditional leadership right of nobles at their respective provinces.²⁹⁴The intention behind alienating the nobles, as most scholars argued, was the need to create a centralized modern civilian and military bureaucracy.²⁹⁵ It seems that the emperor was successful in this arena. Government offices had begun to be occupied by western educated civil servants.²⁹⁶ Some writers like Warren C. Robinson *et al.*, note that 'most observers credit the emperor with making genuine efforts to modernize the country and improve the lots of the people. He worked to build an effective modern state, by launching education and health programs, establishing a university, and creating planning and statistical office.'²⁹⁷ Secondly, the new elite had replaced the old aristocracy by the 1960s.²⁹⁸ In this regard, Andargachew writes this:

...by 1960, the process of modernization had far advanced and tilted the balance in favor of the new elite as against the old; for all intents and purposes, the age-old aristocracy which had, for centuries, been the backbone of the monarchy had lost its military and administrative functions to the new elite. 299

Marina Ottaway also wrote that by the 1970s 'not only that the old ruling elite, the landed class, was excluded from the government, but also that the new social classes³⁰⁰which were coming into existence were prevented from playing a political role.'

For Emperor Haile Sellassie, the expansion of modern education was the main concern of his restored government. The ultimate goal was to secure trained human resources and transform the

²⁹⁴Crummey, p. 237.

²⁹⁵Mesfin, p. 91.

²⁹⁶Mordechai Abir, 'Education and National Unity in Ethiopia', African *affairs*, 69, 274, Oxford University Press, P.

^{53. &}lt;sup>297</sup>Warren C. Robinson et al., 'Agriculture, Population and Economic Planning in Ethiopia, 1953-1980', The *Journal of Developing Areas*, 20, 3 (April, 1986), p. 328.

²⁹⁸Andargachew, p. 18.

²⁹⁹Ibid.

³⁰⁰The new social classes represent the rural entrepreneurs: the younger and better educated members of the land-holding families and the merchants, see Marina Ottaway, 'Social Classes and Corporate Interests in the Ethiopian Revolution', The Journal of Modern African Studies, 14, 3 (September, 1976), pp. 471-472.

country's administrative system.³⁰¹ Educational institutions both at primary and secondary levels began to be seen in the country with better expansion in Addis Ababa, Shawa and Eritrea. The post-liberation period also witnessed the opening of higher educational institutions: the University College of Addis Ababa, the Engineering and Building College in Addis Ababa, the Agricultural College in Alemaya, and the Public Health College in Gonder.³⁰² Graduates of these colleges were the ones who assumed various posts in government offices.³⁰³

With regard to taxation, four decrees, targeting augmenting the revenue of the state, were proclaimed: the Regulations for the Administration of All Church Lands of 1942, the Proclamation to Provide for a Tax on Land of 1942, the Customs and Export Duties Proclamation of 1943, and the Land Tax Proclamation of 1944. Apart from revenue, the land tax proclamations were geared towards the abolition of *gult*. Accordingly, they ended the longestablished system of using land as a source of income for any office holder, except the church. The government then had managed to collect taxes directly from the tax payers. The method of collecting taxes also had been changed from the old-established system of payment in kind to payment in cash. However, the land tax proclamations had been successfully resisted in Tigray, Gojjam and Begemdir. Partly because of the failure to enforce the tax proclamations in the aforementioned provinces and in part through other reasons perhaps like the low efficiency of collecting tax, these proclamations did not increase government revenue. Consequently, extra

³⁰¹Merera Gudina, *Ethiopia from Autocracy to Revolutionary Democracy*, 1960s-2011(Addis Ababa: Addis Ababa University, 2011), p. 22.

³⁰²Bahru, pp. 180, 220-222.

³⁰³Hussein Ahmed, 'Addis Ababa University Fifty-three Years on an Insider's View', Cahiers d'Ètudes Africaines, 46, 182 (2006), p. 293.

³⁰⁴Crummey, P. 237.

³⁰⁵Ashenafi, p. 384.

taxes namely the education tax in 1947 and the health tax in 1959 were levied on all agricultural land and implemented in all the provinces. 306

Emperor Haile Sellassie confronted with internal contenders since the immediate post-liberation period. In fact, he had eventually surmounted all. The British assisted him not only to liberate the country from Italian rule but also to prevail over internal opposition forces.³⁰⁷ In actual fact, the British worked hard in defending the monarch. The British air raid on the Wäyanè rebels was the manifestation of that. 308 Yet, the Anglo-Ethiopian partnership had been ambivalent. Haile Selassie certainly sought the British assistance to be reinstated on the throne, and remain free of their control.³⁰⁹ The British assisted the liberation struggle in Ethiopia 'for their own global strategic reason[s]³¹⁰ of gaining supremacy and territories. As Bahru expounded, 'while the war was over for Ethiopia, World War II was still ranging'311 and thus it 'required making adequate provisions for allied defence'. 312 Though Emperor Haile Sellassie was restored to his imperial position in 1941, real power remained in the hands of the British to the extent of undermining the sovereignty of the country to the level of a 'British de facto protectorate.' 313 This was consolidated by the Anglo-Ethiopian agreement of 1942. The 1942 agreement seemingly recognized Ethiopia's independence. It affirmed British supremacy over Ethiopia's financial,

³⁰⁶The education tax was intended to cover the expense of primary education. But, it remained insufficient given that access to elementary education expands by far than the static agricultural income tax for the ensuing 20 years. Secondary and higher education had been run by government budget; see Abir, P. 51.; Crummey, pp. 238-240. ³⁰⁷Ibid., p. 237.; see also Teruneh Zena, 'Yä Ityopia Zemänawi Yädiplomasi Ajämamäre na Hidäte', 1933-1966, in

Shiferaw Bekele (ed.), Kä Dehenäte Wädä Lemate: Ewugätene Lä Tewulede Masetälaläfe (Addis Ababa: Forum for Social Studies, 2006 e.c.), p. 165. ³⁰⁸Bahru, p. 215.; Merera, P. 22.

³⁰⁹Bahru, p. 180.

³¹⁰Ibid., p. 179.

³¹¹Bahru Zewde, Society, State and History: Selected Essays (Addis Ababa: Addis Ababa University Press, 2008), p.

³¹²Bahru, 'A History of Modern', p. 179.

³¹³Andargachew, p. 6.; Bahru, 'A History of Modern', p. 179.

administration and territorial integrity.³¹⁴ While the 1944 Anglo-Ethiopian agreement endorsed Ethiopia's autonomy; the British military administration did not relinquish Eritrea and Ogaden to Ethiopia. On the whole, the British domination over Ethiopia which historically came to be called the 'British decade'³¹⁵ extended until the federation of Eritrea with Ethiopia in 1952.

It was Britain's involvement on the war of liberation against Italy that paved the way for her unilateral domination of Ethiopia. After World War II, however, the Emperor's official contact with the Americans grew faster and eventually attracted it as a new partner. Most scholars agree that Ethiopia was in the lead to establishing rapport with the United States of America. The British hidden interest in Ethiopia had frustrated Emperor Haile Sellassie and persuaded him to lean towards the Americans. Haile Sellassie chose America's diplomatic and military support to counteract³¹⁶ Great Britain's imperial ambitions. This is clear from the fact that he sought American diplomatic support and military aid more than anything else. But, America's predilection at the first official contact as well as the later Fellows Mission (named after its leader, Perry Fellows) was to lend a hand in the areas of technical assistance and the development of infrastructure. The Americans had assisted Ethiopia in the area of agriculture, education, health and water resource sectors through the 'point four' program. America believed that 'poverty' may have pushed Ethiopia to the communist bloc. After its strategic interest in the Middle East was threatened by the Egyptian revolution of 1952, 317 America started involving in wide-ranging diplomatic and developmental activities in Ethiopia. 318 Since then, America had

³¹⁴Ibid.

³¹⁵Bahru, 'A History of Modern', p. 179.

³¹⁶ Christopher Clapham, *Transformation and Continuity in Revolutionary Ethiopia* (Cambridge, Cambridge University Press, 1988), p. 221.

³¹⁷Bahru, 'A History of Modern', p. 184.

Andargachew, pp. 18-19.; Asafa Jalata, 'The Ethiopian State: Authoritarianism, Violence and Clandestine Genocide', *Journal of Pan African Studies*, 3, 6, March 2010), p. 165.

fully replaced Britain, and it inaugurated her domination that persisted until the 1974 Ethiopian revolution.

Expansions of infrastructural facilities had not been improved to the required level during the first decade of the post-liberation imperial period. 319 Efforts did not go beyond maintenance. As indicated earlier, the imperial government was busy reinstating its independent rule, regaining its territories: Eritrea and Ogaden, and consolidating its absolute rule. 320 This precarious circumstance prevented the government from engaging in developmental endeavors. The situation began to change since the early 1950s³²¹ and the imperial government started to engage on upgrading the country's infrastructural facilities.

At the beginning the imperial government embarked on establishing independent bodies responsible for planning, construction, and maintenance of infrastructural facilities. Among these the Imperial Highway Authority, the Imperial Board of Telecommunication, the Ethiopian Electric Light and Power Authority and the Department of Water Resource are worth mentioning. The Imperial Highway Authority (IHA), a body which was responsible for the planning, designing, building and maintaining of highways, was established in 1951. 322 This was followed by the establishment of the Imperial Board of Telecommunication (IBT), an independent body, separated from the Ministry of Posts, Telegraph and Telephone in 1952.³²³ Likewise, the Ethiopian Electric Light and Power Authority (EELPA) was established in February 1956.³²⁴ The Department of Water Resource was instituted in 1956 within the Ministry

³¹⁹Shiferaw Jammo, 'An Overview of the Economy, 1941 – 1974', in Shiferaw Bekele (eds.), *An Economic History* of Modern Ethiopia: The Imperial Era (1941 - 1974), I (Dakar: CODESIRA, 1995), p. 5.

³²⁰Crummey, p. 235. ³²¹Shiferaw, p. 5.

³²²Ibid., p. 26.

³²³ Ibid.

³²⁴Ethiopian Electric Light and Power Authority, Yä Ityopiya Èlectrik Hayl Corporation Hamsaña Amät Yä Worg

of Works and Communication and remained functional until a nationwide institute called the National Water Resource Commission (NWRC) was founded in 1971. 325 Similar departments were also formed for other sectors. A sectoral development program extended either for five or ten years as per the nature of the sector had been prepared for much of the aforementioned sectors.³²⁶ The first five year development program for enhancing the country's road network. for instance, was prepared for the period 1952-1956.³²⁷

The political stability and economic recovery that started in the early 1950s continued unabated until the early 1960s. 328 Internal revolts started to decline. The question of sovereignty and territorial integrity were solved following the end of British domination and the federation of Eritrea with Ethiopia and the restoration of Ogaden in 1952 and 1954 respectively. With the proclamation of the second constitution in 1955, the Haile Sellassie government provided a legal base for its absolutist rule.³²⁹ A four five year economic plans had been prepared within the 'framework of a 20 year perspective plan,'330 of which three of them were implemented by the imperial government, while the fourth one was not accomplished due to the 1974 revolution.³³¹ The imperial government befriended America whose interest was securing a military base in Eritrea for promoting its superpower strategic presence in the area. ³³² In 1963 the Organization of African Unity (OAU) was founded making Addis Ababa the seat of the new continental organization. The United Nations Economic Commission for Africa (ECA) was also established.

Eyobèlyu, Special Edition (Addis Ababa: Artistic Printer, April 2005), p. 8.

³²⁵National Archives and Library Agency (Hereafter NALA), Folder, 14.1.30, File, 14.1.30.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, Main Office.

³²⁶Ashenafi, pp. 385-386.

³²⁷Shiferaw, p. 8.

³²⁸Crummey, p. 236.

³²⁹Bahru, 'A History of Modern', p. 206.

³³⁰ Shiferaw, p. 8.

³³¹ Ibid.

³³²Bahru, 'A History of Modern', p. 186.

These developments were followed by the opening of a great number of embassies and consulates in Addis Ababa.³³³ The Development Bank of Africa (ADB) was also established in August 1963 in order to assist infrastructural and economic development of member states.³³⁴ The emergence of these institutions not only demanded modern utilities but also opened up opportunities for or enforced the Ethiopian government to embark on development endeavors. But, this did not last longs partly because the relative peace the imperial government had been enjoying was soon followed by political struggle arising from various opposition groups.

The aborted coup of the 1960 was the first serious challenge to the imperial government. Though it was easily quelled and peace and security was restored, the coup had a long-term impact in undermining the power of the imperial government. It encouraged the mushrooming of sporadic opposition against the imperial government since the mid-1960s. There also were external challenges and natural calamities that hampered developmental activities. The peasant rebellions in Bale and Gojjam, the Eritrean armed struggle, opposition from the Ethiopian student movement, the global oil crisis and the 1973/74 drought and famine were major problems facing the Imperial regime. These problems had certainly engrossed the attention of the imperial regime.

To conclude, the post-liberation imperial period witnessed several historical events which could impede development endeavors in general and that of water supply infrastructure development in particular. Shiferaw explains the destructive impacts of these historical events as: 'such conflicts.....not only absorbed financial resources but also made claims on productive

³³³Crummey, p. 235.

³³⁴NALA, Folder, 63.1.25, File, 63.1.25.06, Qädamawi Emperor Haile Sellassie Lä Şähafè Teizaz Aklilu Habtewold, Nähasè, 1956.

³³⁵Shiferaw, pp. 3-4.

manpower, disrupted economic and social life, and contributed to economic backwardness and a stagnant society. 336 However, there were also opportunities which could be tapped or harnessed for the country's infrastructure and socio-economic development as well. The infiltration of modern ideas following the Italian invasion, 337 the American presence and expansion of modern education played a significant role in changing public perceptions, sharing experiences, etc. Apart from the Italian's contribution, the exiled Ethiopians during the occupation period returned home after liberation with modern education and ideas significant for transforming their country. The American presence, particularly, influenced many aspects of Ethiopian life. They were the ones who founded the Ethiopian Airlines, the Imperial Highway Authority, the Imperial Telecommunication Board; and they also provided support to improve agriculture, health and education through the Point Four Agreement. 338 The establishment of the Department of Water Resource was also strongly tied with the Americans' interest in assisting the Ethiopian government in the study of the country's water potentials, particularly of the Abbay (Blue Nile) river valley.³³⁹ The water supply infrastructure development in Amhara Region in the period under discussion will be examined in the context of the aforementioned economic, socio-cultural, and political milieu.

Institutions, Policies and Strategies

Efforts were made by the imperial government in identifying, managing, and utilizing the country's water resources since the second half of the 1950s. To achieve this, the government had formed a number of institutions entrusted with all-around duties. The earliest was the

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³³⁶Ibid., p. 55.

³³⁷The Italians are accredited for their introduction of modern elements to Ethiopia during the occupation period. From their defeat, Ethiopians had realized the urgency of introducing modern elements. See Abir, P. 48.

³³⁸Bahru, 'Society, State and History.....', p. 178.

³³⁹Bahru, 'A History of Modern', p. 186.

Department of Water Resource which was established in 1956 within the Ministry of Works and Communication with a mission of conducting a preliminary study on the Abbay (Blue Nile) river valley.³⁴⁰ It was expected to accomplish diverse activities pertaining to irrigation, hydropower generation, as well as industrial and community water supply. The mandates given to the department were so huge that it could not carry out all its missions. This brought forth the need for establishing an additional institution. As a result, the Awash Valley Authority was established in 1962 primarily for identifying and utilizing the resources of the valley and prop up its utilization. Like the Department of Water Resource, it was authorized to perform all activities including the provision of drinking water in the Awash valley area.³⁴¹

The two domestic institutions mentioned above were locally confined in mission. The need to modernize the water development, administration and utilization necessitated establishing another organisation working all over the country. In line with this, an ad-hoc committee was set up, comprising educated Ethiopians and experts from the United Nations, to carry out a feasibility study so as to create a national authoritative government body responsible for studying, administering, managing, developing, and properly utilizing the country's water resource. Based on the study result, the National Water Resource Commission (NWRC) was established in October 1971 with a Proclamation No. 75/64. 342 Like its predecessors, the National Water Resource Commission (NWRC) had been conferred with wide-ranging duties.

³⁴⁰Two writers have examined the institutions and policies related to water in Ethiopia but they put different dates regarding the formation of the Department of Water Resource: see Yaqob Arsano, "Ethiopia and the Nile: Dilemmas of National and Regional Hydro-politics", Thesis Presented to the Faculty of Arts of the University of Zurich, 2007), pp. 125, 127.; Tesfaye Tafesse, A Review of Ethiopia's Water Resource Policy, Strategy and Program, in Taye Assefa (eds...) Digest of Ethiopia's National Policies, Strategies and Programs (Addis Ababa: Forum for Social Studies, 2008), p. 314.

³⁴¹Dassalegn Rahmato, Water Resource Development in Ethiopia: Issues of Sustainability and Participation (Addis Ababa, Forum for Social Studies, 1999), p. 16.

342 NALA, Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job

Description, Volume I, p.7; NALA, Folder, 11.1.32, File, 11.1.32.1, Kä Akababi Tena Atäbabäge committee Yäqäräbä Atäqalay Report, Sänè, 24,1967; NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yägäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, p. 5.

And this in turn, among others, had contributed for the organization's inefficient performance. The institute actually succeeded in bolstering its trained human resource on hydrology, law, water resource economics, finance, and drilling wells with the financial aid it secured from the United Nations long after its foundation. The institute actually because of the dearth of finance and trained human resource. The financial shortage is clearly understood from a draft account entitled *Report on Recent Economic Development in Ethiopia and Prospects for 1967*. The document reveals the budget allottments for different sectors. Though government budget in general was not as much of, the capital budget allotted for the water resource development from 1970 to 1974 had been the least as compared to the budgets earmarked to road construction, maritime, air and other communications, or to the industry, tourism, commerce, and agriculture sectors.

The imperial era had also witnessed the birth of another water body called the Water Wells Drilling Agency. It was entirely technical and was put under the National Water Resource Commission (NWRC).³⁴⁵ It was put in motion with a 17.3 million *berr* loan secured from the Japanese government. It was a profit oriented state-affiliated institution established in order to develop wells for industries, urban and rural water supply including for animals, and irrigation purposes with payments from private or government budget as the case may be.³⁴⁶ On one

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³⁴³NALA, Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, p. 7.; NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, pp. 4-5.

³⁴⁴The report period is in Ethiopian calendar; see NALA, Folder, 19.1.32, File, 19.1.32.08, Report on Recent Economic Development in Ethiopia and Prospects for 1967, Addis Ababa, Hedar, 1967.

³⁴⁵NALA, Folder, 11.1.10, File, 11.1.10.1, *Ato* Saleh Hiniq, Lä *Ato* Tekalign Gedamu, Mäskäräm, 18, 1966.

³⁴⁶NALA, Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, pp. 9-10.; NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Ayele Habte Mikael Lä *Ato* Tekeze-Shewa Aytenfesu, Hamle, 19, 1971.

occasion, bearing a name the Ethio-Japanese Water Wells Drilling Project, it was under the administration of the Agriculture and Industry Development Bank.³⁴⁷

This shows that there was no autonomous governmental entity in Ethiopia being entrusted with the production, purification and distribution of drinking water during the imperial period. While rural water provision was the responsibility of Community Water Supply, a sub-department under the National Water Resource Commission (NWRC)³⁴⁸, urban water supply remained the work of *Yä Wuha Kefel* (water unit), a section within the main office of the municipality and its provincial branches throughout the imperial period. Apart from controlling the quality of water, the Ministry of Health was also taking part in developing drinking water for the rural society to a limited extent.³⁴⁹

Sources are too scanty to have a detailed discussion in relation to water policies and strategies. Available ones confirm that the idea of developing a national water resource management policy in Ethiopia has been a recent phenomenon. The first national water resource management policy was enacted in 1999.³⁵⁰ It targeted three sub-sectoral issues,³⁵¹ to be precise, water supply and sanitation, irrigation and hydropower generation. Despite the absence of a well-thought national policy on water, however, these issues remained a nuisance to both the imperial (1941-1974) and

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³⁴⁷NALA, Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, p. 9.; see also NALA, Folder, 14.1.38, File, 14.1.38.2, *Ato* Ayele Habte Mikael Lä *Ato* Tekeze-Shewa Aytenfesu, Ter, 12, 1971.

³⁴⁸NALA, Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, p. 8.

³⁴⁹NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977; NALA, Folder, 11.1.32, File, 11.1.32.1, Kä Akababi Ţèna Aţäbabäqe committee Yäqäräbä Aţäqalay Report, Sänè, 24,1967.

³⁵⁰Yaqob, p. 29. Bezuayehu Tefera, Integrated Watershed Management: A Planning Methodology for Construction of New Dams in Ethiopia, *Journal Compilation* (Blackwell Publishing Asia Pty Ltd, 2007), p. 248. ³⁵¹Tesfaye, p. 316.

the military regime (1974-1991). The imperial government had tried to take advantage of higher hydraulic technology to construct a motor driven borehole both in the urban and rural areas.³⁵²

Urban Water Supply

Though not without challenge, 353 urbanization in Ethiopia, as most scholars argue, is believed to have been a very recent phenomenon. Gamst writes that apart from the ancient Aksum and the medieval Gonder, no urban center or city appeared in the region up until the late nineteenth century. Medieval Ethiopia had witnessed a great number of roving capitals. However, many scholars claim that the medieval roving capitals did not qualify urban or city centers albeit they had been functioning as such.³⁵⁴ The birth of Addis Ababa in 1886 as a capital of the modern empire of Ethiopia was thus a groundbreaking step in this respect and the mushrooming of urban areas in the country. In the 20th century, the railway construction, the Italian occupation and the accompanied road construction as well as the post-liberation developments have been accredited for the rise and growth of many urban centers. 355 But, information is inadequate regarding the number of urban centers and the size of their population as well. Moreover, the available scholarly works show discrepancies in the statistics. Mesfin Wolde-Mariam, for example, has noted the existence of 1300 urban centers in the post-liberation imperial Ethiopia. He has also estimated the entire population to be 3, 000,000, with an average population of a town of 2,307. 356 By contrast, Muhammad Rafiq and Assefa Hailemariam came up with a very small

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³⁵²Dassalegn, p. 16.

³⁵³There are a great number of scholars who support the age-old urbanization in Ethiopia. see Abdussamad H. Ahmad, 'Darita, Begemdir: an Historic Town and its Muslim Population, 1830-1889', *The International Journal of African Historical Studies*, 22, 3 (1989), p. 439.

³⁵⁴Frederick C. Gamst, 'Peasantries and Elites without Urbanism: The Civilization of Ethiopia', *Comparative Studies in Society and History*, 12, 4 (October, 1970), pp. 378-380.

³⁵⁵Ibid., p. 380.; Mesfin Wolde Mariam, 'Problems of Urbanization'. *Proceedings of the Third International Conference of Ethiopian Studies*, 3, June 1970), pp. 20-22.

³⁵⁶Mesfin, 'Problems of', pp. 22-23.

number of urban centers. According to them there were 163 urban centers in the country by 1967 with a population size of 2,000 or more.³⁵⁷ Of these, only 53 urban centers had a population of 5,000 or more. This covers a little more than 32 percent. The majority of it, 62 percent of the urban centers, lie within a population size of 2,000 and 4,999. From the top extreme those which had a population size of 50,000 or more were less than two percent at that same year. A total population of 1,917,000 lived in all of the 163 urban centers in the same period.³⁵⁸

The two sources show irreconcilable figures. However, the second one seems more reliable than the first since all of its statements have been supported by numerical data obtained from the central statistical office and also many scholars are in agreement about the low level urbanization of Ethiopia during this historical period. Robert L. Cooper and Ronald J. Horvath, for instance, brought in to light very much closer figure to the latter. They have identified 195 urban centers existed in the country from 1964 to 1968. Furthermore, an archival document produced half a decade after the downfall of the imperial regime reveals the existence of 251 urban centers in the country from 1964, a figure which is by far nearer to the latter than the former.

When we see the Amhara Region, the study area of this thesis, the towns of Debre Berhan, Debre Tabor and Gonder, for instance, traced their origin as a political center as far back as the medieval period.³⁶¹ Nevertheless, sources once more do not corroborate the urban status of

³⁵⁷ Though there were some initial conceptual difficulties in adopting a uniform definition for urban population, most of the official publication treat settlements of 2,000 or more inhabitants which meet one or more other criteria based on legal status, density and physical proximity of housing units, type of land use, and the like as urban', See Muhammad Rafiq and Assefa Hailemariam, 'Some Structural Aspects of Urbanization in Ethiopia', Universita Degli Studi di Roma "La Sapienza", *Genus*, 43, 3/4 (Luglio-December 1987), pp. 186-195.

³⁵⁸Ibid.

³⁵⁹Robert L. Cooper and Ronald J. Horvath, 'Language, Migration and Urbanization in Ethiopia', *Anthropological Linguistics*, 15, 5 (May, 1973), p. 223.

³⁶⁰NALA, Folder, 14.1.35, File, 14.1.35.5, *Ato* Amhayesus Metaferiya Lä Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Sera Amärare na Masälţäña Mäkanä Ţenate, Ţekemet, 6, 1971.

³⁶¹Concerning the foundation of these towns, see Richard Pankhurst, 'A History of Debre Tabor, Ethiopia', *Bulletin of the School of Oriental and African Studies*, 40, 2, 1977.; Gamst, p. 380.; see also Tadesse Tamrat, *Church and State in Ethiopia*, 1270-1527 (Oxford: Clarendon Press, 1972).

Debre Berhan and Debre Tabor towns at that time. As judged by scholars, only Gonder has been accepted as an urban center.³⁶² Therefore, almost all the present urban centers of the Amhara region either came into sight or met the criteria of being urban during the second half of the 19th and the 20th century. While Dessie, Debre Markos, Wore-ilu came into view in the second half of the 19th century, towns like Kombolcha, Bahir Dar etc. appeared during and after the Italian occupation.³⁶³

In 1967, there were 33 urban centers in Shewa, 9 in Gojjam, 9 in Gonder, and 12 in Wollo province with a population size of 2,000 or more.³⁶⁴ The sum of these figures, nonetheless, does not show us precisely the number of urban centers in the study area. This is for the reason that the aggregate spatial coverage of the imperial provinces of Gojjam, Wollo, Gonder and north Shewa, from which the present Amhara region has been formed, does not exactly fit with the later as the ethnic based administrative division of the EPRDF government left a section of the provinces and some of the respective urban centers out. Concomitantly, the same source has brought in to light the list of those urban centers having a population size of 5,000 or more in 1967. They were 53 in number. 11 of them namely Dessie (40,619), Gonder (36,309), Debre Markos (21,536), Bahir Dar (12,463), Ankober (9,232), Debre Berhan (9,188), Woldiya (8,505), Seqota (7,145), Debre Tabor (6,942), Qobo (6,861), and Bati (6,146), are situated in the present

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³⁶²Gamst, p. 380; Bahru, 'Society, State and History.....', p. 445.

³⁶³For the birth of the towns of the Amhara region see, for examples, Tekeste Melake, 'The Early History of Dessie' (Senior Essay, Department of History, Addis Ababa University, 1984.); Habtai Zarai, 'A Historical Development of the Town of Kombolcha, 1937-1974', (Senior Essay, Department of History, Addis Ababa University, 1987).; Idris Yemam, 'The History of Hayq Town', (Senior Essay, Department of History, Addis Ababa University.); Abibi Hussein, 'A History of Wore-Ilu with a Particular Emphasis on the Town from Its Foundation, 1870-71 to 1941' (Senior Essay, Department of History, Addis Ababa University, 1990.); Seletene Seyoum, 'A History of Bahir Dar Town, 1934-1966 E.C.', (M.A Thesis, Department of History, Addis Ababa University, 1988.); Solomon Addis, 'A History of the City of Gondar', (M.A Thesis, Department of History, Addis Ababa University, 1994.); Ewunetu Tegegne, 'A History of Debre Markos Town, 1941-1991', M.A. Thesis, Department of History, Addis Ababa University, 2005.

³⁶⁴Muhammad and Assefa, p. 200.

Amhara region.³⁶⁵ Of these, only four towns had 10,000 and more inhabitants. The biggest town was Dessie with a population size of 40,619. It was the fifth ranking town at a national level. The three major towns Dessie, Gonder, and Debre Markos grew with 3.05, 3.7 and 3.55 percentage rate from 1967 to 1984 respectively. Highest growth rate was registered in the smaller towns; namely Bahir Dar, Debre Berhan and Debre Tabor. The registered growth rate was 8.55, 5.95 and 4.57 percent respectively. Ankober and Seqota were discerned as declining towns from 1967 onwards.³⁶⁶ On the whole, it is clear that in the period under discussion urbanization in Amhara region had been growing relatively from its infant stage. Did water supply infrastructure extend with a similar pace? The following discussion strives to provide answer to this and related questions.

The urban water infrastructure development in the post-liberation imperial period, with no doubt, began almost from a bare ground. There were no significant achievements registered on the field before and during the occupation period. As available sources indicate, only the towns of Dessie, Gonder, Kombolcha, and Wore-ilu were provided with safe drinking water in the pre-1941 period. If truth be told, only Dessie and Gonder towns had up to standard water system. The public system was first established in Dessie in 1912 by a man called *Ras* Abate, hence *Ras* Abate Wuha (water). It was stretched from Sere *Meneče* (spring) to the palace of Ras Mikael. The Italians had expanded it through making additional public system from a place known as Qurqur located at the northern edge of the town. In a similar manner, the Italians had established a new public system in Gonder town which was extended from the Tägè *Menečoch* (springs) whose number was twelve. However, the water supply system of Kombolcha and Wore-ilu towns can by no means qualify the standard. In Kombolcha the Italians introduced piped water

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366 Ibid.

³⁶⁵The figures in the parentheses are the population size of the respective urban center. Ibid., pp. 201-203.

but, it was serving only in the fascists barracks. In Wore-ilu they had set up simply a well operated by a hand pump. ³⁶⁷ Even worse, the meager public systems installed in these early privileged urban centers were either destroyed by the war of liberation ³⁶⁸ or became obsolete.

Besides, more than 98 percent of the then Ethiopian population was illiterate,³⁷¹ which meant the lesser the initiative on the part of the beneficiaries themselves as well as the lower the pressure

³⁶⁷ See Derb Tefera, 'A History of Infrastructural Development in South Wallo, 1941-1974' (M.A. Thesis, Department of History, Addis Ababa University, 2010), p. 9.; For the case of Gonder see, NALA, Folder, 14.1.15, File, 14.1.15.3, Barsula Sermolo and Solomon Bekele Lä Kätämoch Wuha Na Fesaşe Derejit, 18, Sänè 1971.

³⁶⁸ Gamst, p. 391.

³⁶⁹NALA, Folder, 62.1.12, File, 62.1.12.12, Yä Haya Amät Eremeja, 1933-1953.

³⁷⁰NALA, Folder, 1.2.45, File, 1.2.45.10 የሚኒስተሮች ምክር ቤት የልማት ኮሚቴ ታህሳስ 2/60 የሚ*ኒጋገ*ርባቸው ጉዳዮች.

³⁷¹Crummey, p. 236.

on the government to expand the water infrastructure would be. The government was also suffering from serious financial and trained human resource constraints.³⁷² In contrast, many urban centers were founded in the post-1941 imperial period.³⁷³ Because of such urban center proliferation and extra post-1941 developments, there were increased demands to water and similar other public projects in the post-liberation period. These developments could make the processes of securing access to safe drinking water in the emerging urban centers more difficult and pose a great challenge to the imperial government. True, the government started drinking water supply infrastructure construction not on a firm bases and only late that is in the second half of the 1950s.³⁷⁴

Under the circumstances, only a few towns in the region had gotten access to piped water during the post-liberation imperial period. These were Dessie, Kombolcha, Bati, Hayq, Wuchale, Kuta-Ber, Harbu, Debre Markos, Dangela, Debre Berhan, Bahir Dar, Qobbo, Gonder, Woldiya, Wurgesa, Mersa, Nini Ber and Chafa (Woladi). Construction work in some of these towns, as it is mentioned before, dated back to the pre-Italian and the occupation period. Yet, the majority

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³⁷²Ashenafi, p. 390.

³⁷³Gamst, pp. 380-381.

³⁷⁴Shiferaw, p. 5.

³⁷⁵For the historical introduction of piped water in these towns, see Tekeste Melake. 'The Early History of Dessie' (Senior Essay, Department of History, Addis Ababa University, 1984), p. 13.; Solomon Addis, 'A History of the City of Gondar', M.A Thesis, Department of History, Addis Ababa University, 1994, p. 122.; Habtai, p. 30.; Idris, p.18.; Derb, pp. 19-24.; Seletene, p. 115.; Ewunetu, p. 94.; The exact date of the introduction of water supply in Debre Berhan town is not known but expansion work was under operation in 1971 E.C. see NALA, Folder, 14.1.35, File, 14.1.35,5, Ato Amhayesus Metaferiya Lä Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Yä Kätämoch Wuha na Fesaše Derejit, Tekemet, 6, 1971.; Baher Dar had municipally operated water system since the first half of the 1960s though to a limited areas, see NALA, Folder, 13.1.32, File, 13.1.32,1, The United States Department of the Interior Bureau of Reclamation, Land and Water Resources of the Blue Nile Basin, Appendix III-Hydrology, 1964; There are contradicting sources regarding the water supply establishment of Dangla town. While some traced it back to the imperial period, others put it at the early *Derg* period. See NALA, Folder 14.1.30, File 14.1.30.3, Imperial Ethiopian Government Ministry of Interior Municipalities Department: Eight Towns Water Supply Project, Special and Technical Conditions and Bill of Quantities for Drilling and Debre Markos University Archive Center (Hereafter DMUAC), Folder, 1011, Ato Getachew Tamrat Bä Maekälawi Pelan Yä Behèrawi Komitè Sehefäte Bèt Yä Semen Meserage Ityopya Yä Pelan Oätana Sehefäte Bèt, Hamlè, 19, 1977.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, Fitawrari Mamo Seyoum to Dajazmach Kifle Ergetu, Meskerem, 29, 1957.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, Fitawrari Belay Mersha Lä Wollo Tägelay Gezate Schefäte Bet, Säne, 18, 1954.

of them were able to get piped water supply during the late imperial time. With the exception of Dessie, Debre Markos and Gonder, the three major capitals of Wollo, Gojjam and Gonder provinces respectively,³⁷⁶ the rest urban centers were either *Woreda* (district), *Meketele Woreda* (sub-district) or towns attained no administrative status at all.³⁷⁷ The common element of these towns was their geographic location. All are situated along the main highways. In the contrary, there were more urban centers situated beyond the highways and perhaps having larger size and with similar or higher administrative status but were not provided with modern water supply infrastructure. Seqota, Mekane Selam, Debre Tabor, Wogel Tena, Tenta, Mota, Bechena, Mehal Meda etc. were cases in point.³⁷⁸ This shows that the water supply infrastructure development endeavor did not consider the status and size of the urban centers. So what parameters were employed to extend this modern utility to the selected towns only? Why this was so? An attempt will be made to clarify these issues below.

Sources are not clear on the set of criteria being used to prioritize towns and provide them with water supply service during the imperial period. As pinpointed above, no information whether the role of the town as center of administration, and its population size were used as rating scales to enable towns get piped water supply or not. Industrial establishments were almost absent in

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³⁷⁶Concerning the birth, status and territorial extent of Dessie, Gondar and Debre Markos see for example Tekeste Melake, 'The Early History of Dessie', Senior Essay, Department of History, Addis Ababa University, 1984.; Abdu Mohammed, 'The History of Dessie Town, 1941-1991', M.A Thesis, Department History, Addis Ababa University, 1997.; Solomon Addis, 'A History of the City of Gondar' M.A Thesis, Department of History, Addis Ababa University, 1994.; Ewunetu Tegegne, 'A History of Debre Markos Town, 1941-1991', M.A Thesis, Department of History, Addis Ababa University, 2005.

³⁷⁷There were a great number of towns with a similar or higher status to some of the privileged towns. For further information about the administration role of towns, see Ashenafi Shiferaw, Yä Ekonomi pelan Bä Ityopia Mächä na Enedète Täjämärä?, Shiferaw Bekele(ed.), in Kä Dehenäte Wädä Lemate: Ewuqätene Lä Tewulede Masetälaläfe (Addis Ababa: Forum for Social Studies, 2006 e.c.), p.384.

³⁷⁸Derb, pp. 61-62; A technician who would conduct a geo-physical preliminary study in Debre Tabor town had been asked only later in 1971 e.c., see NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Ayele Habte Mikael Lä Kämaeden Hayel Mamäneča na Yä Wuha Lemate Minisetèr, Hamle, 9, 1971.

most of the towns so as to utilize it for prioritizing.³⁷⁹ The geographical location of the aforementioned urban centers was a single common factor that assisted them to be benefited from water supply service. All of these towns (except Kuta Ber) were located along the main roads connecting Addis Ababa to Maqalle, Addis Ababa to Gonder, and Addis Ababa to Kombolcha-Assab. 380 Kuta Ber too is situated 20km away from Dessie on the Italian built Dessie-Gonder road.

The locational advantage may well be understood from the following facts. Many of the urban centers in the region which did not get access to water supply service were the ones situated far away from the modern highways. With the exception of Dessie and Gonder, road construction works preceded the water supply development projects. 381 So it can be argued that the construction of major highways helped the growth of urban centers and their subsequent access to water supply infrastructure. The road building in fact had a wider impact. For one thing, the road infrastructure facilitated contact among the different urban centers along with the capital, Addis Ababa, and beyond. Such interactions also enhanced the exchange of modern ideas and life styles. 382 People familiarized with the values of modern facilities could play their part in infrastructural developments either in the form of contributing money or supplying construction

³⁷⁹There were only some beginnings in establishing light industries like Sopral meat factory, Tannery factory, soft drink factory, blanket factory etc. appeared in Kombolcha, Dessie, and Debre Berhan, see Derb, p. 35.

³⁸⁰Debre Berhan, Chafa (Woladi), Harbu, Kombolcha, Dessie, Hayq, Wuchale, Wurgesa, Mersa, Woldiya, Nini Ber and Kobbo are located along the Addis Ababa-Maqalle main road. Debre Markos, Dangela, Bahir Dar, and Gonder are situated on the main highway from Addis Ababa to Gonder. Similarly, Bati is placed on the Addis Ababa- Kombolcha-Assab main road.

381 The Addis Ababa-Dessie road was built and construction work was well underway beyond Dessie to Maqalle

towards the 1935/36 Italian invasion almost two decades after Dessie obtained water supply service. In Gonder both water and road infrastructures (the Gonder-Debre Markos-Addis Ababa main road) were extended during the occupation period by the Italians. For further analysis see Richard Pankhurst, "Road-Building during the Italian Fascist Occupation of Ethiopia (1936-1941)", African Quarterly, 3, (January, 1976); Derb Tefera, 'A History of Infrastructural Development in South Wollo, 1941-1974' (M.A Thesis, Department of History, Addis Ababa University, 2010).

³⁸²The Italians who were credited in the building of those highways, for instance, had spent much time while traveling to and from these areas and/or residing in them either as a camp at the time of the road construction or as center of political administration and shared experiences with the local people.

materials and labor power, etc. It is clear, development endeavors during the imperial period was highly centralized. Yet, public participation in development works has become a customary practice at least since the time of Emperor Menelik II. The growth of private investment is also tied with the degree of newly introduced modern ideas and fashions. Secondly, the road infrastructure could also help in easing the burden of transporting construction machineries, technicians and laborers and developing water supply infrastructures. Thirdly, the road infrastructure had stimulated or speeded up the urbanization process which in turn demanded the availability of modern facilities. Urban water supply is crucial among modern facilities as it played a crucial role in providing an adequate amount of water to an increasing number of urban dwellers due to rural-urban or urban-urban migration apart from the natural growth. Sanitation is also a serious problem in urban areas which requires provisions of adequate water supply.

In fact, additional reasons were suggested for the appearance of water supply infrastructure in some of the abovementioned centers. The water supply infrastructure development in Chafa (Woladi), for example, is believed to have been motivated by the establishment in 1953 of a modern farm in the area. Equipping the region's towns having a good potential for tourist attraction with standardized hotels and 24 hours safe water supply was the other rationale. Similarly, scholars highlighted the role of the dearth of water points in nearby areas of Qobbo town vis-a-vis extending drinking water infrastructure to that area. The appearance of those infrastructures is also associated with the role of local influential personalities. However, these

³⁸⁵Mesfin, 'Problems of Urbanization', p. 27.

³⁸³During the Asmara-Addis Ababa telephone and telegraphic construction, the public had covered the costs of labor power. See Aleme Eshete, 'The Construction of the Italo-Ethiopian Telephone and Telegraph Line between Asmara and Addis Ababa 1898-1904' *A Paper presented for the Sixth Eastern African History Conference, March 14-21, 1984.* Bahir Dar.

³⁸⁴An Italian investor named Comandatori Luji Èrtora had established a modern farm at Chafa (Woladi) on a land he secured through lease from the imperial government. He subsequently provided the farm camp with modern infrastructures like water supply, electricity, and telephone and telegraph. See Derb, pp. 17, 22, 31.

reasons do not weight much for changing the argument made before based on the role of access to road because of the following reasons. The Addis Ababa-Dessie highway traversing the area where the modern farm of Chafa (Woledi) was situated could attract the establishment of a modern farm itself, the precursor of the water supply infrastructure. Secondly, if tourism potential had more importance, historic sites in the region such as Lalibela 386 would be prominent as compared to Bahir Dar and Gonder towns. Similarly, absence of water points in the town of Qobbo can by no means be a convincing reason for its privileged access to piped water supply out of the many towns suffering from similar problems.

The three major activities that had been accomplished in relation to water infrastructure development in the post-1941 period were maintenance, expansion and new construction. There were cases in which one or two of these activities were dominant in some selected areas and in the region as a whole. In Dessie and Gonder, for instance, maintenance and expansion works outweighed new construction throughout the period. This is because both Dessie and Gonder had already secured the services prior to the post-liberation period. Therefore, some maintenance works had been carried out in these towns albeit the majority of them proved to be nonfunctional. A steady increase in demand for water appeared in the post-1941 period owing to the rapid population growth and expansion of social institutions compelled concerned bodies to embark on maintaining the old distribution networks and/or start expansion works. In all other urban centers where there were no initial works or where the earliest establishments were getting old or fully destroyed during the war of liberation, new constructions began to take place towards the late imperial period.

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³⁸⁶NALA, Folder, 14.1.14, File, 14.1.14.4, *Ato* Abebe Worku Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegesete Lä maeden Yähayel Mamäneča` na Yä Wuha Habte Minisetèr, Tahesase, 4, 1972.

³⁸⁷NALA, Folder, 17.1.13.03, File, 17.1.13.03.03, *Ato* Wogayehu Sahlu Lä *Guade* Addis Tedla, Nähasè, 18, 1975.

Available evidences confirm that the earliest water supply networks had been extended from nearby springs. The public water supply of Dessie used Sere Meneče (spring) and Qurqur Meneče (spring); the town of Gonder likewise used Tägè Meneče (spring) as its source of water supply. 388 Similar experiences were recorded in Havg and other towns too. 389 Tapping natural springs was the easiest and beneficial method (both economically and technically) in a country with undeveloped water supply systems as the water could easily flow by gravity and without using pumping machine. But, as time went on water from springs became inadequate for supplying the burgeoning towns' population. As records show the volume of spring water declined due to periodic drought and long time exploitation, and the incapacity to supply with gravity of the säfärs /neighborhoods/ at high grounds. 390 This required the use of alternative methods. Installing varied types of pumping machines working with motor engine or manually, drilling deep boreholes and/or constructing dams became inescapable options. All these methods were applied in Amhara region in different times. Dessie and Gonder were among the first towns provided with pumping machines operating with motor engines. Both were provided with it during the occupation period. Hand pumps were utilized both in urban and the rural area. Furthermore, a new technology, windmill, used for pumping water consuming wind power had been under study during the imperial period.³⁹¹ Exactly when drilling the earth for the purpose of extracting drinking water started in Amhara region cannot be established with certainty. Nevertheless, the use of machine for drilling water points was a widespread method in the second half of the twentieth century and drilled boreholes are still the major sources of public

Derb, p. 9.; For the case of Gonder see, NALA, Folder, 14.1.15, File, 14.1.15.5, Ato Barsula Sermolo and Ato Solomon Bekele Lä Kätämoch Wuha Na Fesaşe Derejit, Sänè, 18, 1971.

³⁸⁹The Dessie Town Water Supply and Sewerage Service Office Archive (here after DTWSSSOA), Folder, 12/11,

Ato Mulugeta Abate Lä Hayq Leyu Käfetäña Şehefäte Bèt, Tahesase, 10, 1976.

390 Derb, p. 54.; For the case of Gonder see NALA, Folder, 14.1.15, File, 14.1.15.5, Ato Barsula Sermolo and Ato Solomon Bekele Lä Kätämoch Wuha Na Fesaşe Derejit, Sänè, 18, 1971.

³⁹¹Michael G. McGarry and Eric J. Schiller, 'Manpower development for water and sanitation programs in Africa', A Journal (American Water Works Association), 73, 6 (June 1981), p. 283.

water system in the urban centers. Constructing a dam for supplying public water seems to have been the experience of the post-imperial period.³⁹²

As can be seen from spatial coverage as a whole the water supply infrastructure construction in Amhara region was sluggish in the post-liberation imperial period. The registered success in this respect was inadequate by any standard. Only a handful of urban center (not more than twenty including those that obtained the service before 1941) in the region had been provided with piped water supply in the three and half decades of the imperial government's administration. ³⁹³ In other words, the government had failed to enable at least one urban center get a public water supply per year. This slow-moving expansion of the water supply infrastructure development mainly emanated from financial constraints.³⁹⁴A study by the World Health Organization on the theme Urban Water Supplies in Developing Countries has shown the number of urban population in need of new or extended water supply service in Ethiopia in 1962 and the cost of construction to be conducted from 1962-1977. The document has shown that 590,000 urban dwellers were in need of the service in 1962. By 1977, the population would increase to 1, 040,000. It indicated that a total of 26,000,000 US dollar was required for water construction work from 1962 to 1977.³⁹⁵ The number of the urban population in need of water was not only too large, but also the estimated cost was clearly beyond the capacity of the government.

The imperial government undertook infrastructural construction works mainly with the financial aid or loans it obtained from donor agencies or foreign countries. It was also dependent on the

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³⁹²Only the town of Gonder had a public system extended from a dam constructed on Angereb river; See, The Gonder Town Water Supply and Sewerage Service Office Archive (here after GTWSSSOA), Folder, 38, File, *Φ*·37/217, *Ato* Hailu Tesema Bä Gonder Kefelä Hagär Yä Gonder Kätäma Aţäqalay Yä Kätäma Näwariwoch Mahebär Şehefāte Bèt, Mägabit, 11, 1972.

³⁹³See note 375.

³⁹⁴NALA, Folder, 2.2.79, File, 2.2.79.19 Ministry of Information, General Information, p. 3.

³⁹⁵World Health Organization, 'Urban Water Supplies in Developing Countries', *Journal* (American Water Works Association), 56, 8 (August, 1964), p. 944.

developed nations for acquiring construction materials and technical assistances. 396 This dependency was the result of the financial constraints and technological backwardness on the part of the imperial government and also the theoretical discourse of the time. Modernization theorists, advocates of the dominant view of the time, recommended the potential of the wealthy nations in assisting the backward countries both financially and technically if the latter followed the development path of the former. The developed nations were thus viewed as development partners by the developing countries. In fact, drinking water supply programs were not favored in the 1940s and 1950s at global level. It was only since the early 1960s that instead of backing efforts of economic growth donors shifted their financial and technical assistances to povertyreducing development programs. Accordingly, the period witnessed the involvement of several financial and technical assistance agencies on poverty-related issues. The major ones were the International Development Association (IDA), United Nation Development Program (UNDP), the United Nations Special Fund, International Bank for Reconstruction and Development (IBRD), Inter-American Development Bank, African Development Bank, and the Asian Development Bank.³⁹⁷

It is worth noting that the western nations assisted the backward regions if and only if these relations guaranteed them higher returns. Whatever the case may be, the imperial government of Ethiopia was often compelled to seek the goodwill of international organizations and governments to initiate new projects and/or to complete the ongoing ones. This entailed a couple of problems putting aside the benefits. Firstly, the amount of loans and aid fluctuated in accordance with the good will of donor states and agencies. Secondly, in order to secure the required amount of finance, the government was subject to endorse donors'/creditors' terms and

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³⁹⁶Shiferaw, pp. 49-52.

³⁹⁷ Bakker, pp. 59-60.

conditions of agreements, which, in most cases, exposed it to precarious economic conditions due to debt servicing. Therefore, it deprived the imperial government dependable sources of finance and the freedom to prepare and execute its own development plans by itself.

In addition to loans, the imperial Ethiopian government had also secured aid and assistances from a number of states and non-government organizations for improving drinking water supply both in urban and rural areas. Among donor states and agencies, the US and the Swedish voluntary service are repeatedly mentioned in the archives for their expanded water construction work in Amhara region particularly in the then Wollo province which incorporated both of the present south Wollo and north Wollo.³⁹⁸ The US put its footprints on water work in these areas through its point four program.

The late imperial period also coincided with the emergence of divergent views within modernization thinking. It was during this period that the structuralists detached themselves from advocates of the modernization theory. Unlike their predecessors, the structuralists identified structural problems curbing the development endeavors of the developing countries. They believed that absence of infrastructure facilities were serious setbacks for ensuring industrial development in the developing country and urged states of the undeveloped nations to embark on expanding infrastructural networks. Ethiopia was a typical example of those countries having poor infrastructure facilities. Perhaps influenced by the structuralists view or being cognizant of the gloomy condition of the country's infrastructure, the imperial government of Ethiopia had contemporaneously launched many infrastructural programs, ³⁹⁹ like road, telephone and

³⁹⁸NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, Fitawrari Mamo Seyoum Lä Dajazmach Kifle Ergetu, Meskerem, 29, 1957.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, Fitawrari Mamo Seyoum Lä Kebur Leje Haile-Maryam Kebede, Hedar, 15, 1960.

³⁹⁹Ibid., pp. 26-27.

telegraph, water and electric power supply etc. This was a burdensome task for a country with a precarious financial base. Being capital intensive and very costly, expanding the country's infrastructures remained unfulfilled. The problem with regard to the limited expansion of urban drinking water infrastructure in the research area, in fact, goes beyond financial constraints. It is, therefore, important to examine issues related to policy, management, natural calamity, population growth as well as socio-cultural constraints.

A critical examination on the five-year development plan of the imperial government, for instance, clearly reflects the existing knowledge gap or the minimum attention given to the role of safe and adequate drinking water in promoting socio-economic development. That is why improving infrastructures in areas such as health, education, safe drinking water were seen as having secondary or tertiary importance in the development plan. While the first development plan prioritized the expansion of physical infrastructures, i.e. transport and communication, electricity etc. to spur economic growth, the second development plan put emphasis on improving the agricultural sector. Agriculture was again given priority in the third development plan. Thus, advancing social infrastructure was not a priority in all the three consecutive development plans. Even among the various social infrastructures, education and health got precedence over safe drinking water. This meant that the policy guidelines of the imperial government had overlooked or offered minimal attention to the expansion of safe drinking water supply.

⁴⁰⁰Ibid., pp. 9-13.

⁴⁰¹Ibid., pp. 9-11.

⁴⁰²NALA, Folder, 1.2.45, File, 1.2.45.10 የሚኒስተሮች ምክር ቤት የልማት ኮሚቴ ታህሳስ 2/60 የሚ*ነጋገ*ርባቸው *ጉዳ*ዮች. ⁴⁰³Ibid

Equally important was the approach that the imperial government followed in expanding the water supply infrastructure. Worldwide the municipal hydraulic water supply governance model prevailed over much of the twentieth century. Based on the notion that modern way of life stimulated a much greater demand for water, which was considered as an abundant resource, the municipal hydraulic model expounded the principle of excessive extraction of water using high hydraulic technology. This particular model called for government regulation, government ownership (centralized), together with hierarchical accountability in order to attain fair and equitable provision. 404 The water management system of imperial Ethiopia contained and reflected crucial elements of the Municipal Hydraulic Model. However, the constituent elements in the model could not go along with the political and economic realities of Ethiopia. For one thing, the financial capacity of Ethiopia could not go in conjunction with the expensive hydraulic technology. Secondly, the undeveloped transport and communication infrastructure of the country in tandem with the then semi-feudal administrative structure and its archaic state machinery would not allow the water supply development in a top-down (centralized) approach, 405 a preferable approach to introduce and make use of modern technology and the available trained human resources properly. 406 If truth be told, the approach was problematic to reach inaccessible frontier areas and achieve good results. The fact that all the planning, construction as well as maintenance of a single water project was to be accomplished with the supervision of the central office, it was not conducive to evaluating and monitoring the overall construction, operation and maintenance works of such projects situated in remote areas. Consequently, these drawbacks obviously incurred extra expenses, construction delays and suspension of projects or failure of public infrastructure development undertakings.

⁴⁰⁴Bakker, pp. 31-32.

⁴⁰⁵Shiferaw, pp. 49-54. ⁴⁰⁶Gupta, p. 107.

Many urban centers reported the breaking down of the water supply system and requested for maintenance shortly after the completion of a project.⁴⁰⁷ The reasons for these problems seem to have emanated from lack of skilled technicians or operators⁴⁰⁸ and defective preliminary studies.

Almost all public water systems were run by unskilled operators who had very little or no technical skill to take care of and maintain the pumping machines. In a study entitled *Manpower Development for Water and Sanitation Program in Africa*, Michael G. McGarry and Eric J. Schiller note that 'it is common to find at least fifty percent of the installation in developing countries lying idle in despair soon after construction'. The authors attributed the problem to the scarcity of professional, technical and semiskilled human resource.

As modern education in Ethiopia was at its infancy during the imperial period, getting adequate skilled human resource with a required level of technical knowhow was a serious challenge. This problem, in fact, haunted not only the office of the National Water Resource Commission (NWRC) but also all government institutions. Sources confirm that the greater number of civil servants had no more than primary school or some church education. 410

Absence of a well done preliminary study based on reliable data regarding the actual potential of the available water sources, population size and shortage of technically qualified units for running the water supply infrastructure and management body often led to erratic water supply system. Getting accurate data on population size was a cumbersome task as the tradition of

⁴⁰⁷The Kombolcha Town Water Supply and Sewerage Service Office Archive (hereafter KTWSSSOA), Folder, 32, Alemu Tesera, Lä Ityopia Giziyawi Wotadärawi Mängesete Bä Agäre Asetädadäre Ministèr Yä Mazägaja Bètoch Wana Mäseriya Bèt, Ţere, 22, 1967.

⁴⁰⁸ NALA, Folder, 11.1.32, File, 11.1.32.1, Kä Akababi Ţèna Aţäbabäqe committee Yäqäräbä Aţäqalay Report, Sänè, 24, 1967.

⁴⁰⁹ McGarry and Schiller, p. 282.

⁴¹⁰Andargachew, p. 10.

conducting population census is a recent origin.⁴¹¹ As a result, the capacity of the water system that had been installed could not satisfy the water need of the targeted population. It is also possible to suggest that water supply infrastructure construction work had been done as a result of officials' instigation. They called for the introduction of modern machinery as a show of image building, or as a response to popular demand for drinking water.

Equally important was the absence of institution running the urban water development. Throughout the imperial period, urban water supply and sewerage service had been running by *Yä Wuha Kefel* (water unit), a section within the main office of the municipality and its provincial branches. The shortage of skilled machinist/s working in the water distribution section exacerbated the problem. Whenever a system failure occurred, water shortage and a request for maintenance or new installations followed. This situation obliged municipalities to look for extra budget either to change existing sites and begin expansion work or initiate new projects.

Delays in construction or suspension of projects were frequently seen in urban water infrastructure development. In most cases, constructions started late or were not executed according to the schedule. Improper project management both in the technical and financial arenas were often cited as major obstacles. As the water supply development work was centralized, every minute issue required the decision and directive of the central body. The bureaucratic bottleneck and the lack of modern communications systems prevented responsible officials to offer quick solutions. If we see the budget utilization, provincial government offices did not have the power to spend the allocated money as they saw fit. Abir has this to say:

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⁴¹¹The first population census in Ethiopia was conducted in 1984. For further information see John Markakis, Nationalities and the State in Ethiopia, *Third World Quarterly*, 11, 4 (October, 1989), Taylor& Francis, Ltd., p. 118. ⁴¹²Dassalegn, p. 34.

The allocations....are channeled through the provincial treasuries (Bejuronds) and these do their best to delay payments and allocations. This is mainly caused by the fact that since it is not possible to carry forward an unspent part of the budget from one budgetary year to another, the efficiency of the Bejuronds is measured by their superiors by their ability to save the Treasury as much as possible from the approved budget of most government offices. 413

Such management related dilemmas no doubt caused a great deal of delay, interruption or even the suspension of envisaged or ongoing projects.

The failure or exhaustion of a public system within a short time was at times attributed to natural causes. Climatic changes may trigger water degradation. A water table could depreciate before or after a public system was developed. Water shortage recorded after construction work accomplished if it were made without undertaking preliminary studies. Here it is important to show to what extent the decline of water volume affected the already established public systems and curbed their progress in the Amhara region. Ethiopia had been struck by drought in the 1950s, 1960s and 1970s. 414 Many parts of the Amhara region were victims of recurrent droughts. The droughts brought about a steady decline of the water table. Thus, both springs and boreholes from which a public system was developed failed to deliver the required volume of water at the time of construction. This had been commonly observed in all the drought prone areas of the Amhara region. In areas like Dessie, 415 diminishing of the water volume and the drying up of springs and boreholes were reported following repeated droughts. The municipality was thus forced to search for alternative solutions i.e. digging boreholes in other sites. 416 However, this does not mean that the dearth of fresh water in Amhara region had restrained the water supply infrastructure development. Despite the depreciation of water tables in the already established

⁴¹³Abir, p. 51.

⁴¹⁴Edward Kissi, The Politics of Famine in US Relation with Ethiopia, 1950-1970, the International Journal of *African Historical Studies*, 33, 1(2000), pp. 117, 130. ⁴¹⁵Derb, p. 54.

⁴¹⁶Ibid.

public systems of the aforesaid towns, one could find excess ground water in nearby areas. 417
The problem arose from the failure of conducting a meaningful preliminary study at the time of site selection. Or else, it emanated from a propensity of constructing cost-effective but temporary public systems. The earlier public systems in most towns were extensions from springs. In the towns of Dessie and Gonder, for instance, public systems were extended mainly from springs flowing from the foothill of nearby mountains as understood from Sere *Meneče* (spring) and Qurqur *Meneče* (spring) in Dessie, and the Tägè *Menečoch* (springs) in Gonder. 418 This was because the spring waters flow by gravity without fixing pumping machines. Though incidental climatic change in due course began to affect the water volume of these water points, shortage of fresh water was not a problem in the history of water supply infrastructure development in Amhara region until recently 419 let alone in the early period.

The post-liberation imperial period was marked by a steady growth of literacy in urban areas. But, the great majority of the Ethiopian public remained illiterate. So the idea of considering water as being a precious resource has not been entrenched in the minds of the Ethiopian people for long. Population growth coupled with injudicious consumption and pathetic conservation methods had greatly affected the expansion of urban facilities, like access to adequate and safe drinking water supply and other development works.

Few written sources also registered problems related to land ownership in the area where water points were located. In urban centers like Dessie, for instance, individuals fenced springs and

⁴¹⁷NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, p. 43.

⁴¹⁸Derb, p. 9. ; For the case of Gonder see, NALA, Folder, 14.1.15, File, 14.1.15.5, *Ato* Barsula Sermolo and *Ato* Solomon Bekele Lä Kätämoch Wuha Na Fesaše Derejit, Sänè, 18, 1971.

⁴¹⁹NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, p. 43. ⁴²⁰Crummey, p. 236.

prohibited the surrounding people from accessing them; and the municipality was well aware of this problem. The following letter written by the head of the Dessie municipality confirms this. It reads:

በቦታቸው ላይ ያለ አንዳች ድካም የመነጨ ውሃ ያሰባቸው ሰዎች ሁሉ ውሃው የመንግስት ሕንጂ የነሱ አስመሆኑን ባስመረዳት የሚያደርጉት ጭቅጭቅ የስራ ጊዜ የሚፈጅ ስለሆነ ከአሁን በፊት ያለ ድካም የመነጨው ውሃ በቦታቸው ላይ የሚገኝና ውሃ ያለበት ቦታ ሆኖ ማዘ*ጋ*ጃ ቤት ሊያሰራው ሲያስብ ባለቦታዎች የዚህ በጎ ተግባር ተቃዋሚ ሕንዳይሆኑ ከልዑልነትዎ አንድ ትሕዛዝ ሰጠቅላይ ግዛቱና ሰፍርድ ቤት *እንዲተ*ሳሰፍልን የልዑልነት*ዎን መ*ልካም ፈቃድ *እ*ሰምናሰሁ።⁴²¹

All individuals who have naturally flowing water on their land did not understand that the water they claimed without doing anything is the property of the government, not theirs. Arguing with them is time consuming; so we beg His Excellency the Crown Prince to order the governor-general and the court to inform those claiming ownership of the naturally flowing or other water resourceful areas not to resist the municipality whenever it starts exploiting them.

It is worth mentioning that the 1960 Civil Code of Ethiopia clearly stipulates the right and obligations of water use. As clearly seen in Article 1228, sub-article 1 and 2: 'the community shall have priority in the use of all running and still water, and such water shall be controlled and protected by the competent authority.' And article 1237 also stipulates about giving priority for domestic use. 422 Therefore, the question of ownership resulted from lack of knowledge or the misreading of the existing laws. In any case, such bickering led to delays and/or suspension of construction works until solutions were offered by higher authorities.

On the whole, lack of finance, the nonexistence of well organized water institution, absence of preliminary studies and decentralized management system, population increase, recurrent

⁴²¹NALA, Folder, 62.1.12, File, 62.1.12.12, Head of the Dessie municipality Lä prince Asfawosen Haile Sellassie, 6, Yäkatite, 1942. ⁴²²Yacob, pp. 112-113.

droughts, lack of awareness among the society and skilled technicians hampered the development of water infrastructure in the urban centers of the study area.

Rural Water Supply

Rural water supply infrastructure development in Ethiopia had been initiated in the late 1950s but there was very little practical move on the field before 1971. First and foremost, the program did not have a body responsible for running its overall activities prior to the establishment of the National Water Resource Commission in the same year. In fact, the Department of Water Resource and the Awash Valley Authority had been entrusted with a similar duty of ensuring community water supply. But these institutions, as indicated above, not only carried a locally confined mission but also were primarily designed to undertake a preliminary study on the water resource of the two river valleys. Consequently, they executed not as much of on the field. The only achievement was the one accomplished in collaboration with the United States Operation Mission in line with the Point Four Program. Under this joint venture, several wells were dug throughout the country. Regarding the study area, the Point Four Program engaged on drilling deep boreholes particularly in the present eastern Amhara. Apple 1971.

The National Water Resource Commission also did not accomplish much to change existing situation. In relation to this, the major drawback emanated from the government's inability to make use of appropriate technology. Available sources indicate that the imperial government had greatly relied on a motor driven boreholes construction method. But, the financial, technological and infrastructure base of the country did not allow procuring up to date machineries. The only

⁴²³NALA, Folder, 2.2.79, File, 2.2.79.19 Ministry of Information, General Information, p. 3.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, *Ato* Yohannes Haile-Selassie to prince Asfawosen Haile-Selassie, Ţekemet, 29, 1942.

⁴²⁴NALA, Folder, 17.1.12.03, File, 17.1.12.03.02, *Ato* Yohannes Haile-Selassie to prince Asfawosen Haile-Selassie, Ţekemet, 29, 1942.

option left was to engage in constructing hand-dug well working with or without a hand pump, protection of springs, and/or preparing artificial ponds. These techniques were believed to have been preferable to other methods to reach rural villages. ⁴²⁵ The question here is why the imperial government preferred motor driven water supply technology to other alternative methods? The possible answer for this question is the ideological and technological influence of the Americans. During the post-liberation period, the modernization paradigm that had been dominant here in Ethiopia and at the global level was to emulate the technological achievements of the developed nations. Hence, American influence in Ethiopia cannot be overlooked since almost all infrastructural works including water supply construction schemes were accomplished with the support of the United States of America. 426 The inclination of the imperial government to motor driven borehole construction methods was in large part inspired by this large-scale American influence. Similarly, the hydraulic municipal model which the imperial government tried to adopt was an approach widely used by the developed nations.

Partly because of such a strategy fault, water supply infrastructures were not seen in the wider rural areas of the imperial period. Thus, the traditional approach of developing drinking water sources by the local community on individual bases epitomized the imperial period.

Socio-economic Impacts

The water supply infrastructure construction in Amhara Region discussed so far was marked by a limited spatial coverage. The beneficiaries were a few urban centers, not the rural areas. Yet, it had some observable impacts. So it is vital to explore the nature and extent of changes being registered in the socio-economic arena on account of access to safe drinking water supply.

⁴²⁵Dassalegn, p. 16.

⁴²⁶ Shiferaw, p. 50.

In Amhara culture there are proverbs on peoples' attitude regarding the value of safe drinking water hitherto. Mesfin Wolde-Mariam documents a long-held maxim which says: 'there is no water that is not sacred'. 427 It is also common to hear people in Amhara region and beyond saying: 'Po-45' Ph5' Pho-90'428 (Lit: "Water and mothers are always untainted"). These sayings may help us to discern about the popular perceptions that permeated Amhara society since the remote past. And such perceptions no doubt encouraged the practice of extracting water from any water points indiscriminately and using it for a variety of purposes. As Mesfin aptly put it: 'all water in Ethiopia is like the water of river Ganges-it is sacred and multi- purpose.' In point of fact, it was customary to use rivers, streams, ponds and springs for drinking including animals as well as for washing and sewerage disposal. Disregarding quality, the main concern for consumers was just getting water. It remained so until very recently.

There are additional sayings worth looking at. The proverb "77C? hħሩ ውዣ? hፕሩ" (Lit: It is best to grasp ideas and water from their source') is a good example. This adage, in contrast to the above sayings, gives attention to the significance of extracting water from a protected point. Thus, it can be argued that the notion of using safe drinking water has been a well entrenched idea among the Amhara people. The traditional ways of keeping water sources safe came from such locally grown rational ideas. The most commonly used methods were protecting wells and springs from various pollutant agents. Erecting fences or building diversion ditches for protecting water sources from possible impurities were a very common practice. Around water points, indigenous trees like Šolla (Ficus Sycomorus) were mostly found. These trees were often

⁴²⁷Mesfin Wolde – Mariam, 'Problems of......', p. 27.

⁴²⁸It has been a popular speech among the Amhara people since ancient times.

⁴²⁹Mesfin Wolde – Mariam, "Problems of, p. 27.

⁴³⁰Ibid

⁴³¹It has been a popular speech among the Amhara people since ancient times.

protected, not destroyed. 432 In addition to ensuring the continual flow of water, the availability of these trees helped the purity of water points from contaminants that could be transported by an agent of wind or flood. In terms of impact, however, the maxims of the first group had preeminence over the later one. It was only after the introduction of modern water supply that the balance tilted in favor of the later. Indiscriminate local water harvesting methods began to be discouraged and seen as injurious to health. In this regard, people having access to safe water supply with modern infrastructures were in the forefront to disentangle themselves from those indigenous views and experiences. Undoubtedly, this change in public attitude was the result of the introduction and expansion, albeit limited in extent, of the water supply infrastructure development.

The other impact has to do with public health and sanitation. A study on the Blue Nile basin reveals the prevalence of water-washed and water-borne diseases due to the absence of safe drinking water supply. 433 The same document also mentions about the correlation between the dearth of adequate safe drinking water supply and the increase in human illnesses owing to the low level of personal hygiene and lack of sanitation measures. In the first two decades after the end of World War II, more attention was given to controlling vector-borne diseases, chemotherapy and immunology than making efforts to ensure safe water supply for domestic use and sanitation purposes at a global level. 434 The post-liberation imperial regime during the same period had very little capacity to change this situation. Therefore, the predicaments found out in the Nile basin region continued to exist for long even after the start of water infrastructure development. Even with, the reduction of large-scale outbreaks of water borne diseases in some

⁴³²Gabra-Emanuel Tekka, *Water Supply-Ethiopia: An Introduction to Environmental Health Practice (Addis Ababa:* AAU Press, 1977), pp. 59-63.

⁴³³NALA, Folder, 13.1.29, File, 13.1.29.1, United States Department of the Interior Bureau of Reclamation, Land and Water Resources of the Blue Nile Basin, Ethiopia, 1964), p. 109. ⁴³⁴Feachem, p. 15.

areas that had been provided with a rudimentary water supply infrastructure was undeniable fact. True, the better water is being accessible to consumers, the greater the initiative to use it for sanitation purposes. As a result of these limited, but important steps, the imperial period is believed to have brought some degree of improvement in diminishing the occurrence of waterwashed and water-borne outbreaks and augmenting the practice of personal hygiene.

Minimizing the distance and the time needed for fetching water are the other expected positive impacts. Women and children in particular used to travel long distances and spent longer hours to obtain drinking water for families' daily consumption. The presence of water infrastructure in nearby areas minimized the distance travelled and the health hazards attributable to drinking water from unsafe sources. The modern water supply service, above all, reduced the work burden of women and children given that it was the ones who shouldered the arduous task of fetching water.435

Until recently, ensuring access to safe drinking water so as to enhance economic development has not given its proper place. Several studies show that Ethiopia's economic growth was arrested by factors such as war, natural disasters, unfavorable terms of trade, and flawed policies. 436 But, these studies do not talk about the lack of safe water and its impacts. This emanates largely from the imbalance Ethiopian historiography. 437 Bearing this in mind, it is important to examine the degree of influence (either negative or positive) that the dearth of the water supply infrastructure had on the economic development of the study area.

The water supply infrastructure of the imperial period had not been expanded to help promote the economic development. This can be understood by looking at the consecutive five year

⁴³⁵Fasil Gebre-Kiros, Introduction to Rural Development- a Book of Reading (AAU: IDR, 1977), PP. 183, 186.

⁴³⁶Alemayehu Geda and Befekadu Degfe, Explaining African Economic Growth Performance: A Case of Ethiopia, African Economic Research Consortium Working Paper (Nairobi, Kenya, may 2005), pp. 2-6. ⁴³⁷ Bahru, 'A Century of Ethiopian Historiography', pp. 11-15.

economic plans of the imperial government. As noted before, these plans did not offer the right place to the water supply infrastructure development as part and parcel of the social affair sector was not given priority. This situation requires a closer look on the economic growth registered during the imperial period so as to understand the extent of the water supply influence on the said economic development. Sources are lacking on the study area, and available sources contain general information on the economic development at a national level. A book entitled *An Economic History of Ethiopia: The Imperial Era, 1941-1974*, has in particular registered the overall economic growth of the country in the 1950s and the 1960s. Though undocumented, the alleged economic growth must have been the sum total of several contributing elements or variables including the limited access to safe drinking water supply infrastructure. Hence, the contribution of water supply infrastructure on the registered economic development can by no means be underestimated.

Environmental Impact

As argued in the literature review, the unwise exploitation of both surface and ground water has an impact on the environment in general. A comprehensive discussion on the degree of impact the water infrastructure development inflicted on the environment in the Amhara region is not possible due to the paucity of sources. This could be partly because of the inadequate nature of the water supply infrastructure development and the minimal impact it had in threatening the wellbeing of the environment. The dwindling of the volume of water as well as the drying up of springs being recorded in some areas of the region⁴⁴⁰ appeared following the natural calamities

⁴³⁸Shiferaw, pp. 9-13.

⁴³⁹Shiferaw, p. 53.; Eshetu, pp. 220-221.

⁴⁴⁰Derb, p. 54.

that struck the region one after the other. Basically, there was no shortage of fresh water in the region resulted from the water supply infrastructure development. The drying of those point sources was not due to the excessive exploitation of both ground and surface water and the consequent diminishing of the volume of water from these sources. The possible reason was lack of preliminary study on the water potential of point sources and the population growth rate of urban centers. So, public systems were established without considering the greater mismatch between the carrying capacity of the point sources and actual as well as potential population size.

Water Consumption and Conservation Pattern

Consumption of water differs according to the level of development of a society together with the degree of its accessibility to water. In urban areas, it serves for drinking, preparing food, personal hygiene and sanitation, and for processing goods in factories and watering gardens and taking care of domestic animals. Such uses have been often associated with the degree of urbanization and the type and/or capacity of the public water system being used. While flushing toilets and industrial consumptions are usually put into effect in towns having high urban character, the use of water only for domestic consumption is common in less urban areas. These diverse water functions are non-existent in small towns and rural areas, areas that are often inaccessible or have only little access to water that is to be utilized for basic purposes i.e. domestic consumption. Thus, the volume of water to be collected is by far very small, that is, less than 20 liters per capita per day. The use of water for maintaining personal hygiene and sanitation has been insignificant in Ethiopia including the study area until recent times.

Societies differ not only in their use of water for a variety of purposes but also in their consumption level. This emanates from a difference in education, culture and access to water. Usually, in literate societies with privileged access to water supply, people consume larger volumes of water per day per person. Their lifestyle encourages personal hygiene which commonly leads to greater consumption of water. The reality of Amhara region during the imperial period did not reflect these developments. 441 Consequently, the water consumption level of the societies of the study area in the period under discussion was very low, much below the standards, in every respect all through the imperial period when evaluated by the abovementioned criteria.

Equally important is the contradiction pertaining to water shortage and conservation practice. People in the research area did not encourage water conservation. It appears paradoxical as can be understood from the saying 'A[P]\omegai' \text{ m-C hho::'} (Lit: "Wasting water is a transgression").\frac{442}{442} Water was viewed as an infinite natural resource; and even a person living in urban area and having better exposure to the value of water would not seek for an immediate solution whenever he/she noticed leaking pipes.\frac{443}{443} Such indifference may clearly show the degree of negligence, if not absolute ignorance. The society was not oblivious about the value of conserving water. The popular saying 'P\omegai' \text{m-C PLLA TITT Phama (Lit: "An abuse of water may one day be exposed to drinking the urine of a horse") is indicative of this concealed awareness.

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⁴⁴¹Crummey, p. 236.

⁴⁴²Tilahun Berehane Selassie, Yä Häyañaw Kefelä Zämän Ityopia, 1900-1966 (Addis Ababa: Artistic Printer, 1996), p. 310.

¹⁴³ Ibid.

⁴⁴⁴It is commonly spoken by the Amhara people.

Conclusion

The post-1941 imperial government embarked on expanding water supply infrastructure and other development projects without creating appropriate political, economic and technological bases. The state did not create conducive politico-economic environment for developmental undertakings, because it was confronted with multi-dimensional military conflicts and burgeoning social unrest here and there. Most of all, the government did not have dependable economic base to make it free from foreign financial aid and loans. Technological advancement was at its lowest mark. As the great majority of the Ethiopian societies were non-literate, it created an indomitable barrier for the infiltration of modern technological ideas and technical skills. All these setbacks had hindered the water supply infrastructure development. Thus, it is possible to surmise that expansion of water supply infrastructure development in Amhara region had just kicked off during the imperial period. And this crucial and mammoth task was relayed to the regime that succeeded it.

Chapter Four

Water Supply Infrastructure Development, 1974-1991

Introduction

The year 1974 marked a revolutionary political change in Ethiopia which brought about the demise of the feudal regime and the ascendancy of the military rule. A survey on the aftermath of the revolution and the changes that had been registered during this time is crucial to evaluate whether there was a favorable environment for development endeavors or not during the military period. This section, therefore, aims to address the conditions for development in Ethiopia including the study area during the 17 years rule of the military government.

In most cases, greater transformations have been expected to be registered after a revolution or a regime change. The Ethiopian public had similar expectations following the 1974 revolution. They had been waiting for so long to see major transformation in the economic, social, political and cultural spheres. But, available sources confirm that the overall success registered in the period was not as expected. Bahru substantiates this point:

For much of the west the year 1974-1991 marked one long period of unqualified disaster. For many Ethiopians, too, the blood and tears born of the terror and the civil war that attended it have overshadowed any positive achievements the revolution might have registered'. Even on sober reflection, one is hard put to single out with confidence any unequivocal benefits that could have ensued after nearly two decades of social mobilization and economic remodeling. 445

Several political, economic, and/or social factors can be mentioned in relation to the inability of the military government in fulfilling the expectations of the people after the revolution. As

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⁴⁴⁵Bahru Zewde, 'A History of Modern.....', p. 229.

Christopher Clapham writes 'revolution inevitably threatens and involves the international as well as domestic political order. 446 It seems that the 1974 Ethiopian revolution had acted likewise. Domestic politics, for instance, had been characterized by wide-ranging instability. One cannot be blamed for exaggeration if he/she argues that the military government had been confronted with all walks of life and struggled throughout its lifetime in power against those who opposed it. Civil associations (the Confederation of Ethiopian Labor Union (CELU), the Ethiopian Teachers Association, and the Student Union); the military units particularly the Engineer unit, the Army Aviation and the First Division (Bodyguard); civilian political parties as, for instance, the Ethiopian People Revolutionary Party (EPRP) and All Ethiopian Socialist Party (an Amharic acronym: Mei'son); the pro-self rule groups of the Eritrean People Liberation Front (EPLF), the Oromo Liberation Front (OLF) and Tigray People Liberation Front (TPLF), the Ethiopian People Democratic Movement (EPDM), Ethiopian Democratic Union (EDU) and also local rebels challenged the military government since its accession into power. 447 In fact, Derg had defeated 448 some of them in the early hours. But, some others had resisted and continued to fight forming a front as was the cases with the Ethiopian People Democratic Movement (EPDM) and Tigray People Liberation Front (TPLF) or a defensive and offensive alliance such as the Eritrean People Liberation Front (EPLF) and Tigray People Liberation Front (TPLF), until they attained victory after 17 years. The Eritrean People Liberation Front (EPLF), Tigray People Liberation Front (TPLF) and the Ethiopian People Democratic Movement (EPDM) were among the successful and leading political parties.

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⁴⁴⁶ Christopher Clapham, *Transformation and Continuity in Revolutionary Ethiopia* (Cambridge, Cambridge University Press, 1988), p. 220.

⁴⁴⁷Andargachew, pp. 73-75.

⁴⁴⁸Bahru Zewde, *Society, State and History: Selected Essays* (Addis Ababa: Addis Ababa University Press, 2008), pp. 434-440.

The regional politics too deserve mention. The horn politics had not been stable beginning from the imperial period. 449 During the imperial time, Ethio-Sudan relation was characterized by both peaceful and hostile interaction. Hostility developed due to the interference of the one in the internal affairs of the other through giving protection for secessionist groups. Conflicts had continued throughout the military period. In the east, some degrees of occasional skirmishes were there during the imperial time between the governments of Ethiopia and Somalia which had roots in the latter's irredentist question. The acrimonious relation of Ethiopia and Somalia turned to an all out state war not long after the *Derg's* rise to power. The Somalis succeeded to invade the Ethiopian territory and occupied a significant portion in 1977 taking advantage of the revolution's turmoil. Yet, the invader was defeated and forced to fully evacuate in 1978. 450 Afterwards, a rising tension was recorded in the horn partly on account of conflicting ideologies adopted by each state. While Sudan and Somalia adopted the western ideology and approached the US, the military government of Ethiopia welcomed the USSR and activities of member states of the socialist block. Regional groupings formed enfolding Ethiopia, Libya and Yemen on the one hand and Sudan, Somalia and Egypt on the other. Such ideological based division no doubt further aggravated existing tension and friction in the horn. 451 Scholars also maintain that the cold war tension resulted in division and strife among *Derg* members. Among the leading *Derg* members, who were believed to have a propensity towards the United States of America were Captain Sisay Habte, Brigadier General Teferi Bante and L. Colonel Atnafu Abate. 452

⁴⁴⁹Peter Woodward, *The Horn of Africa: State Politics and International Relations* (London, I.B. Tauris Publishers, 1996), pp. 119-129.

⁴⁵⁰Clapham, p. 61.

⁴⁵¹Woodward, pp. 119-129.

⁴⁵²By Special Correspondent, Revolution and Counter Revolution in Ethiopia, *Economic and Political Weekly*, 13, 9 (March 4, 1978), p. 471.

Like the political tumult, recurring natural calamity became a great challenge. Ethiopia was struck by repeated drought and famine since the 1950s. Fortunately or unfortunately, the military government took power at the time when the 1973/74 famine struck the country. Similar famine conditions had ravaged the country ten years after. Apart from political and social unrest, the 1984/85 drought and famine aggravated the already fragile economic situation of the military government. These developments put the military regime in a precarious situation. The fact that the post-revolution Ethiopian crisis did not have similar strength or degree throughout the period under study; scholars have looked at the military rule in to two outwardly separated but interrelated phases.

The first phase was from 1974 to 1978. This period was generally a period of traumatic chaos characterized by the infamous Red Terror, the war with the Eritrean dissident groups and the Somalian invasion of Ethiopia. The debacles recorded during this period were fuelled by the oil crisis, the decline of the coffee price on the world market and, of course, the aftermath of the 1973/74 drought and famine. 453 The government was preoccupied by clarifying its philosophy of 'Ethiopian Tikdem' (Ethiopia First) for the Ethiopian masses and introducing a new economic policy. 454 These predicaments thus inflicted enormous, economic material and social devastation. The sharp economic decline was so daunting that it became the hallmark of the government.⁴⁵⁵ The prevailing political instability coupled with the shaky economy jeopardized all the development endeavors of the state.

⁴⁵³Ibid., pp. 101-102.

⁴⁵⁴Teferra Haile-Selassie, The Ethiopian Revolution, 1974-1991- From a Monarchical Autocracy to a Military *Oligarchy* (London: Kegan Paul International, 1997), p. 136. ⁴⁵⁵Clapham, pp. 115-116.

The second period comprised 1978 to 1991. Yet, scholars divided it into two: 1978 to 1984 and 1984 to the downfall of the military government in 1991. The years from 1978 to 1984 witnessed relative stability 456 in which the government, apart from the conflict in Eritrea and Tigray provinces, tried to strengthen its grip on power. It had thus initiated rural development programs by launching a successive Annual National Revolutionary Production and Cultural Development Campaign in 1978. 457 Major development programs of the government include agriculture collectivization, resettlement, literacy campaign, and villagization. 458 Dessalegn has listed down more or less similar activities of the military government namely: collectivization, grain requisitioning, resettlement, famine relief and villagization. He mentions that the rural policies were elements of the socialization of agriculture. The military government was busy implementing the aforementioned policies in the 1980s. 459 The realization of these programs necessitated the development of infrastructures such as water supply facilities. However, since the government commenced these programs without an adequate economic base and popular consent, they were not implemented with the exception of the literacy campaign. Even worse, agriculture collectivization, resettlement, and villagization programs brought about friction between the government and the rural community. 460

The next phase started on the inauguration year in 1984 of the Workers Party of Ethiopia (WPE). The Ten years economic plan of 1984 to 1994 was also launched in the same year. But, there was no economic growth registered in the first two years. The fact that the country was struck by the

⁴⁵⁶Christopher Clapham, 'Revolutionary Socialist Development in Ethiopia', African affairs, 86, 343 (April, 1987), pp. 151-156.
⁴⁵⁷Ibid.

⁴⁵⁸Clapham, 'Transformation and Continuity', p. 116.

⁴⁵⁹Dessalegn Rahmeto, 'Agrarian Change and Agrarian Crisis: State and Peasantry in Post-Revolutionary Ethiopia', Journal of International African Institute, 63, 1 (1993), pp. 37-38.

⁴⁶⁰Adrian P. Wood, 'Rural Development and National Integration in Ethiopia', *African affairs*, 82, 329 (October, 1983), pp. 537-539.

1984 drought and famine, the government mobilized all the available economic resources for mitigating the crisis. The next three years extending from 1986 to 1989 were relatively conducive to implement the plans. Despite the government's weak control over the insurgentoccupied and less productive areas, it had attained success in crop production in the agricultural riches provinces of Shewa, Gojjam and Arsi as well as coffee producing areas like Sidamo, Gamo Gofa and Keffa. After 1989, confrontations with the insurgents in the north had been intensified, making economic development almost stagnant. 461 Over all, the above mentioned developments tell us the existing unfavorable condition for development endeavors in Amhara region during the *Derg* period. The government emphasized dealing with political issues more than socio-economic matters. 462 However, there were also encouraging situations which will be raised in this chapter.

Institutions, Policies, and Strategies

Prior to the revolution, the National Water Resource Commission was the first countrywide and the highest organ that had been entrusted with the responsibility of studying, administering, managing, developing, and properly utilizing the country's water resource. Below it and having a specific concern on drinking water supply were Yä Wuha Kefel (water unit), a department formed within the municipality in charge of producing, purifying and distributing water in urban areas as well as the community water supply which executed drinking water supply infrastructure development in the rural areas. The Water Wells Drilling Agency was the other institute established in order to develop wells for industries, urban and rural water supply including for animals, and irrigation purposes. It worked with payment in private or from the

 ⁴⁶¹ Clapham, 'Revolutionary Socialist Development in Ethiopia', pp. 151-156.
 462 Alex De Waal, 'Ethiopia: Transitional to What?' World Policy Journal, 9, 4 (fall-winter, 1992), p. 734.

government coffer. All these institutions were not well organized and that they did not accomplish much.⁴⁶³

In the early post-revolution period, professional suggestions underscored the importance of having a strong and efficient government institution first arguing that it was after founding such a body enacting and successfully implementing a national water policy, national water plan and national water law could be possible. 464 In contrast, the new government embarked on downgrading the authority of the National Water Resource Commission including renaming through a program of structural readjustment of institutions. In 1976, the Ministry of Mines was upgraded and became the Ministry of Mines, Energy and Water Resource Development. Then, the National Water Resource Commission was renamed the Ethiopian Water Development Agency and was made the branch of the Ministry of Mines, Energy and Water Resource Development. Once again, the Ethiopian Water Resource Development Agency was renamed the Ethiopian Water Resource Development Authority in the same year. The Authority comprised five organizations that had been working since the imperial period bearing similar or different name. These were the Urban Water Service Agency, Rural Water Development Agency, Land and Water Studies Agency, Wells Drilling Agency, and Metrology Service Agency. 465 This structural change integrated similar service giving organizations. It was thought to create favorable working conditions under a single higher organ. 466

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⁴⁶³NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, p. i.

⁴⁶⁴NALA, Folder 14.1.45, File 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, p. 1.

⁴⁶⁵ NALA, Folder, 14.1.38, File, 14.1.38.2, *Ato* Alem Alazar Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegesete Lä Yähezebe Asetädadäre Mäkanä Tenate, Hamelè, 28, 1969. ; Folder, 14.1.31, File, 14.1.31.3, Ethiopian Water Resources Authority Organization Chart and Job Description, Volume I, date, Hedar 30, 1970, pp. 7-11.

⁴⁶⁶NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, pp. 1-10.

However, the reform that dissolved the Water Resource Commission and put its descendant under the Ministry of Mines, Energy and Water Resource Development was strongly criticized. A document entitled 'ከማዕድን የጎይል ማመንጫና የውሃ ልማት ሚኒስቴር የቀረቡ ዉሃ ነክ ረቂቅ አዋጅችና ደንቦች' (Water Related Draft Declarations and Regulations Presented by the Ministry of Mines, Energy and Water Resource Development) contains the following statement:

ኮሚቪት ቀድሞውንም ቢሆን ራሱን የቻለ መሆት ቀርቶ በማዕድን የዛይል ማመንጫና የውን ልማት ሚኒስቴር ስር እንዲደረግ አስተዳደራዊ ውሳኔ ሲሰጥ ከዚህ በሳይ የተገለፀውን ኮሚቪት ራሱን ችሎ እንዲቋቋም የተደረገበትን ምክንያት በመዘን*ጋት* የተሰጠ ውሳኔ ይመስላል።⁴⁶⁷

The administrative decision that deprived the autonomy of the Water Resource Development Commission and put it under the Ministry of Mines, Energy and Water Resource Development seems to have emanated from failing to recognize the above mentioned reasons as to why the commission had initially been instituted as an independent entity.

The decision took place while the commission was focusing on operational activities. It is not because operational activities were its primary duties but it is because the commission failed to address the latter. Hence, the misunderstandings that the commission was doing major activities for which it was established might serve as the basic reason for dissolving it and placing the water authority under the aforesaid ministry. The commission's primary duties were those which did not win attentions at that point in time like studying, coordinating, guiding and monitoring water related activities, enacting water plans and polices with special focus on trans-boundary rivers. These can by no means be ignored and/or handled by a subordinate institution. 468 Therefore, draft declarations and regulations were issued in March 1979 to put in place once

⁴⁶⁷NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, p. 5.

⁴⁶⁸NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, pp. 5-6.

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more the commission as well as other water related authorities and agencies. The draft laws⁴⁶⁹ of 1/71, 5/71, 6/71 talk of the need for reestablishing the Ethiopian National Water Resource Commission, and establishing the Ethiopian Water Supply and Sewerage Authority, and the Ethiopian Water Resource Law respectively. Similarly the draft regulations for establishing the Urban Water and Sewerage Service Agency, Rural Water Development Agency, Water Wells Construction Agency were authorized by the draft laws of 2/71, 4/71 and 3/71 in that order.

Details were given in the introductory part clarifying the duties and responsibilities of the different organs. As usual, designing policies and planning issues were made the commission's undertakings while administering the Urban Water and Sewerage Service Agency, and the Rural Water Development Agency was transferred to the Ethiopian Water Supply and Sewerage Authority. To avoid confusion, operational tasks were completely omitted in the draft declaration of 1/71 (the declaration of the commission's re-establishment). In terms of organization, the commission was supposed to embrace the Ethiopian Water Supply and Sewerage Service Authority and the Water and Land Studies Agency.⁴⁷⁰

After a lapse of three years, the draft declaration was ratified and the National Water Resource commission was re-established with a declaration number of 217/1974.⁴⁷¹ It encompassed three authorities and one agency namely: the Water Resource Development Authority, the Ethiopian Water Works Construction Authority, the Water Supply and Sewerage Authority, and the National Metrology Service Agency. ⁴⁷² The Water Resource Development Authority was

⁴⁶⁹The draft declaration and regulation laws are written in Ethiopian calendar.

⁴⁷⁰NALA, Folder, 14.1.45, File, 14.1.45.6, Kämaeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr Yäqäräbu Wuha Näke Räqiqe Awajoch na Däneboch, Yäkatite, 26, 1971, p. 8.

⁴⁷¹NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, p. i.

⁴⁷²NALA, Folder, 8.1.29, File, 8.1.29.1, Yä Behèrawi Wuha Habete Komişine Derejitawi mäwaqere Yä sera Mämäriya na Yä Sewe Hayel Deledele, Mäsekäräm, 1974.

initially formed by combining the Land and Water Studies Agency, and the Valleys Development Studies Authority. 473

There were two well drilling agencies operating during the military regime. These were the Water Well Drilling Agency and the National Boring Agency. 474 The foundation of the Water Wells Drilling Agency is well discussed in the previous chapter. But, there is no information regarding the founding date of the National Boring Agency. Available sources simply talk about overlapping duties of the two agencies and the confusions created consequently.

In the view of solving complex bureaucratic procedures, the military government had attempted to decentralize development institutions. Consequently, a number of branch offices had been opened at the provinces. 475 These provincial water offices were known by the name Qäţana Sehefäte Bèt 476 (regional office) and instituted in the different areas of the country one after the other. The first Qäţana Şehefäte Bètoch (regional offices) were established in Harer, Wollo and Eritrea. In 1976 and 1977 additional Qäţana Şehefäte Bètoch (regional offices) were opened in the remaining provinces. 477 All in all, Eight *Qätanas* (regions) were established throughout the country with centers at: Dire Dawa, Hawasa, Jimma, Bahir Dar, Asmara, Maqalle, Kombolcha and Addis Ababa. 478 A Oätana Sehefäte Bèt (regional office) was intended to serve a province or two provinces as the case may be. The North Western and North Eastern Qäţanas (regions) with their headquarters at Bahir Dar and Kombolcha respectively had been entrusted with the water

⁴⁷³NALA, Folder, 8.1.29, File, 8.1.29.3, Bä Behèrawi Wuha Habete Komişine, Yä Wuha Habete Lemate Balä Seleţan Derejitawi Mäwaqere Yä Sera Mämäriya na Yäsäw Hayel Deledele, Mäsekäräm, 1977.

⁴⁷⁴NALA, Folder, 14.1.44, File, 14.1.44.3, Ato Beru Etisa Lä Maeden Yä Haile Mamäneča na Yä Wuha Lemate Minister, Miyaziya, 26, 1971.

⁴⁷⁵ NALA, Folder, 8,1,29, File, 8,1,29,4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, pp.

⁴⁷⁶NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, pp.

⁴⁷⁷ NALA, Folder, 14.1.41, File, 14.1.41.1, *Ato* Shiferaw Bizuneh Lä Gänezäbe Miniseter, Tahesase, 4, 1968.

⁴⁷⁸NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabite, 1972.

supply work of the now Amhara region. However, the central *Qäţana Şehefāte Bèt* (regional office) with its center at Addis Ababa was also functioning for part of northern Shewa, a part of the Amhara region today. *Qäṭana Şehefāte Bèt* (regional office) had been serving as a liaison between the central water institution and the lower water work offices that is the Urban Water Supply and Sewerage Service Agency, and the Rural Water Development Agency. So it was in charge of planning, organizing, coordinating and monitoring the undertakings of both of these agencies.⁴⁷⁹

A Qäṭana Ṣehefäte Bèt (regional office) had different sections: የአካባቢ ሀብረተሰብ ተሳትፎ (local community participation), የአስተዳደር አንልግሎት (administrative service), የቴክኒክ አንልግሎት (technical service), የመሳሪያዎችና ዕቃ አንልግሎት (equipments and tools service), and የከተማና የንጠር መጠጥ ውሃ አፕሬሽንና ጥንና አንልግሎት (urban and rural water operation and maintenance service). As a whole, the military government tried to enhance the spatial accessibility of water institutions by organizing them in accordance with their duties and responsibilities.

Internal and external factors seem to have contributed to the restructuring and consolidation of the water institution. Internally, the military government sought to get rid of the imperial institutions and restructure them in a new form.⁴⁸¹ Externally, the years 1977-1980 had been a period of preparation for launching the International Water Supply and Sanitation Decade (1980-1990).⁴⁸² Since the water decade was put in effect in Ethiopia coinciding with the ten-year

⁴⁷⁹NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, pp. viii-ix.

⁴⁸⁰Ibid.

⁴⁸¹NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, p. II. ⁴⁸²NALA, Folder, 11.1.32, File, 11.1.32.1, Yä Hayejine na Akababi Ţèna Agälegelote Wana Kefele, Yä Akababi Ţèna Agälegelote Tägebare Bämimäläkäte Bä 1973 Bäyäkefelatä Hagäre Yätädärägäwune Gubenete na Yäsera Kenewene Yämigäletse Aţäqalay report.

development plan (1984-1994),⁴⁸³ similar ground works were taking place in the early 1980s. The establishment and consolidation of the various water institutions were cases in point. Thus, the declaration of the International Drinking Water Supply and Sanitation Decade (1981-1990) seems to have reinforced the foundation and structural readjustment of the abovementioned water institutions. The successful execution of the programs of the water decade actually demanded the existence of such institutions in Ethiopia. The following extract substantiates this point:

የመጠጥ ውዛና ፍሳሽ አገልግሎት ባለስልጣን ከተቋቋመበት አዋጅ ሕንደሚታየው የሀገሪቱን የአስር ዓመት ዕቅድና የተባበሩት መንግስታትን የመጠጥ ውዛና የሳኒቴሽን የአስር ዓመት የድርጊት ፕሮግራም ተግባራዊ ለማድረግ ቃል በተገባው መሰረት የመጠጥ ውዛና ፍሳሽ አገልግሎቶችን ለከተማና ለገጠር ሀዝብ ለመዘር ጋትና ለማዳረስ የተጣለበት ብሔራዊ ዓላማና ተግባር በጣም ክፍተኛ ነው።

As it is seen from the declaration of its foundation, the national aim and task conferred upon the Water Supply and Sewerage Service Authority in expanding and ensuring access to drinking water and sanitation services to both the urban and rural public in line with the objectives of the ten-year development plan [1981-1990] of the country and the implementation program of the International Drinking Water Supply and Sanitation Decade [1984-1994] are extremely high.

As shown in chapter three, the initiative for developing a national water resource management policy was enacted only in 1999. But, a water resource master plan was prepared by the military government towards its demise. The master plan imparts information about existing development capacity, water exploitation priorities and engineering works. For the next 15 years since 1990,

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⁴⁸³Dassalegn Rahmeto, 'Water Resource Development in Ethiopia', p. 16.

⁴⁸⁴NALA, Folder, 8.1.29, File, 8.1.29.4, Yä Ityopya Sera Amärare Institute, Addis Ababa, Mäsekäräm, 1977, pp. viii-i.

the water consumption level of irrigation, industry, urban, rural and animals was presented as being 50.4%, 36%, 8.8%, 3.9% and 0.9% respectively.⁴⁸⁵

Relatively speaking, the military period witnessed a pragmatic drinking water development policy and strategies. The military government pursued a policy of accessing safe drinking water and sanitation services to both the urban and rural areas as quickly as possible. To achieve this, it designed two strategies: decentralizing institutions and exploiting both ground and surface water. The authority embarked on performing several activities, like building dam; drilling deep boreholes; doing hand well construction; spring protection and pond construction at the grass roots level. Besides, the program of villagization had been initiated, apart from others as a strategy so as to create favorable conditions for extending access to infrastructures including water supply infrastructure among the rural masses. An extract from one archival document reads as:

በስታቲስቲክስ ጠቅላይ ጽ / ቤት እ.ኤ.አ በ1983 በተደረገው ጥናት እንደተመለከተው በንጠሩ አካባቢ ንጹህ ውሃ የሚያገኙ ቤተሰብ 6% ብቻ ናቸው፡፡ ስለዚህ በንጠር አካባቢ ንጹህ ውሃ ለማስገኘት የሚደረገው ጥረት ያለው አዝማሚያ በቂ አይደለም፡፡ ሆኖም

⁴⁸⁵ NALA, Folder, 13.1.1, Ethiopian Valleys Development Studies Authority, Preliminary Water Resource Development Master Plan for Ethiopia, Final Report, Volume I, June 1990.

⁴⁸⁶ NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Authority, Bä Kätämoch Wuha na Fesaşe Derejete Bä projäketoch Mälek Yaletäyazu Yä leyu leyu Kätämoch Yä Mäţäţe Wuha Agälegelote Derejetoch Serawoch; NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seleţan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972; NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Ţeraze Huläte, Addis Ababa.

⁴⁸⁷NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Authority, Bä Kätämoch Wuha na Fesaşe Derejete Bä projäketoch Mälek Yaletäyazu Yä leyu leyu Kätämoch Yä Mäţäţe Wuha Agälegelote Derejetoch Serawoch; NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seleţan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972; NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Ţeraze Huläte, Addis Ababa.

⁴⁸⁸ Christopher Clapham, *Transformation and Continuity in Revolutionary Ethiopia* (Cambridge, Cambridge University Press, 1988), pp. 175, 178.

የመንደር ምስረታ በተስፋፋ ቁጥር ሁኔታው እየተሻሻለ እንደሚሄድና የህብረተሰቡ ተሳትፎም ክፍ እያለ እንደሚሄድ ይታመናል፡፡⁴⁸⁹

As it was indicated in the central statistics office study of 1983, the rural families who obtained safe water were only six percent. Thus, the trend in getting access to safe water in the rural area is far from satisfactory. Yet, it is hoped that as villagization expands the situation improves and public participation increases.

Though, it was not primarily motivated by the need to expand public utilities, the resettlement program too was seen as an interesting opportunity for easing the process of infrastructure expansion including water supply infrastructure. Available sources mention it among the criteria listed for the purpose of prioritizing areas and giving them access to drinking water supply.⁴⁹⁰

Urban Water Supply

A dossier of the early *Derg* period reveals the existence of 251 urban centers in Ethiopia.⁴⁹¹ However, the majority of them did not meet the criteria of being urban if it is seen from the vantage point of an agreed urban character. This is because they lacked many of the urban elements. Of the total urban centers mentioned above, for instance, only 212 of them had a municipality.⁴⁹² Access to modern water supply system too had been lacking among most of them. By October 1978, just 105 towns had piped water supply services. Of these, those who had adequate and safe water supplies were only 16. The water supply system of 89 urban centers, as confirmed by research based information, was in a dreadful state and in need of immediate

⁴⁹⁰NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Alem Alazar Lä Itopya Wuha Lemate Baläseleţan, Miyaziya 15, 1971.

⁴⁸⁹NALA, Folder, 11.1.23, File, 11.1.23.1, Bä 1977 na 1978 Yätaqädute na Yätäkänawonute Yämäţäţe Wuha Menčoch na Gudegwadoch.

⁴⁹¹NALA, Folder, 14.1.35, File, 14.1.35.5, *Ato* Amhayesus Metaferiya Lä Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Sera Amärare na Masältägna Mäkanä Tenate, Tekemet, 6, 1971.

⁴⁹² NALA, Folder, 14.1.35, File, 14.1.35.5, Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Yäkätämoch Wuha na Fesaše Derejet Lä *Ato* Seyoum Mahmoud, Nähäsè, 26, 1970.

reconstruction work by 1978. The remaining 146, the majority of the towns, did not have a modern public system at all. 493

Information is scarce about the number of urban centers in Amhara region. The exact number of towns in the region is difficult to know. 494 But, almost all towns in the region lacked significant elements of an urban character during the early *Derg* period. An archival document based on personal observation about the town of Dessie reads as follows:

ደሴ ሰማኒያ አምስት ሽ. ህዝብ የሚኖርበት ከተማ ነው። በኢትዮጵያ ከሚ*ገኙት* ትላልቅና ከፍተኛ ከተሞች አንዱ ነው።አርባ በመቶው የዚህ ከተማ ህዝብ በየአካባቢው ከሚገኙት ትናንሽ ምንጮችና ጉድጓዶች ያልተጣራና ለጤና ጠንቅ የሆነ ውሃ ያገኛል። ስሳሳ በመቶው የከተማ ህዝብ ውሃ የሚያገኘው ከማማሽ ሰዓት እስከ ሁለት ሰዓት የሚወስድ መንገድ በመጓዝ ውሃው በሴቶች ጀርባ ወይንም በአህያ እየተቀዳ ነው። ሀያ አምስት በመቶ የሚሆነው ህዝብ በከተማው ውስጥ ከሚገኙ - ቤርካዎች እየቀዳ ሴላው አምስት በመቶ ብቻ የሚሆነው የከበርቴ መደብ በየቤቱ የቧ3ቧ ውሃ በማስንባት ይጠቀማል፡፡ይህ ስታቲስቲካዊ የከተማ ገጽታ የሚያሳየው የከተማው ባህሪ ገጠራዊና አንድ ላይ ሰፍረው ስለሚኖሩበት ብቻ እንጂ በውዛም ሆነ በሌሎች ጎላጎላ ባሉ የከተማ አንልግሎቶች መኖራቸው ወይም አለመኖራቸው ሲታይ ከከተጣነት ባህሪው ይልቅ የገጠርነት ባህሪው ይበልጥ ጎልቶ ይታያል።⁴⁹⁵

Dessie is a town with 85,000 urban dwellers. It is one of the largest and developed towns in Ethiopia. 40 percent of the town dwellers harvested health threatening impure water from nearby springs (Menečoch) and wells. 30 percent got water after travelling for half to two hour's distance using women or donkeys as carriers. While 25 percent fetched water from the town's standing pipes, the rest 5 percent or the well-to-do alone used a connected system. This statistics clearly shows the town's mixed rural and urban feature. It is called urban due to its dense settlement of people, otherwise, in terms of the availability or unavailability of water and other major urban services, it has more of rural than urban character.

However, changes have been registered on the growth of urban centers both in number and urban character since the post-1974 period. The post-revolution developments made a significant

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⁴⁹³NALA, Folder, 14.1.35, File, 14.1.35,5, *Ato* Amhayesus Metaferiya Lä Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Sera Amärare na Masältägna Mäkanä Tenate, Tekemet, 6, 1971.

⁴⁹⁴The exact number of urban centers is difficult to know given that the current administrative division left out some of the territories of the imperial and *Derg* periods Shewa, Wollo, Gojjam and Gonder. ⁴⁹⁵NALA, Folder, 14.1.14, File, 14.1.14.4, *Ato* Haile Giyorgis Lä Guade Asefa Ţelahun Mägabite 14, 1970.

contribution. One of these developments was the restructuring of the political administrative units dating back to the imperial era. The military government reshuffled the pre-revolution political administrative entities. ⁴⁹⁶ The new administrative arrangement dissolved the imperial time *Meketele Woredawoch* (sub-districts) and created new extra *Woredawoch* (districts) and *Awrajjawoch* (sub-provinces). In line with this, a greater number of the imperial period rural towns, centers of the then *Meketele Woredawoch* (sub- districts) were designated as *Woreda* (district) centers. Some of the former *Woreda* (district) centers were upgraded into *Awrajja* (sub-province) capitals. The administrative role of towns, together with other post-revolution developments, the expansion of access to road for example, increased peoples' interaction and trade. ⁴⁹⁷ Besides, the post-revolution period witnessed the expansion of modern public institutions, ⁴⁹⁸ like secondary schools, banks, health centers and the like beyond provincial capital. The appearance of such institutions, in turn, had stimulated urban growth in both dimensions as well as the demand to urban facilities.

Urban population had increased in the Amhara region and in the country as a whole during the military regime. According to the 1984 population and housing census, the population size of Bahir Dar, Debre Markos, Gonder, Dessie and Debre Berhan towns was, for instance, 54,773; 41,138; 80,675; 71,565 and 25,637 respectively. The population size of each of these towns

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⁴⁹⁶ The new political administrative arrangement includes renaming, dissolving the old and forming new administrative units. The imperial time *Täqelay Gezat* (governorate General) was renamed *Kefelä Hagäre*. The old *Meketele Woreda* (vice District) was dissolved and instead *Qäbälè* (lower/ local administrative unit) was formed below *Woreda* (district). See Mesfin Woldemariam, *Adafenè: Ferehätena Mäkešäfe*, (Addis Ababa: Graphic Publisher, 2007 E.C.), p. 242.

⁴⁹⁷A great number of towns in the region traced their origin to the early *Derg* period. Some of them evolved from the road construction camp. Equally important was the growth of urban character in many towns of the region due to a similar factor as well as their role as administrative center.

⁴⁹⁸Daniel Kindie, 'The Cause of the Failure of the Present Regime in Ethiopia', *International Journal of Ethiopian Studies*, 1, 1 (summer/fall 2003), P. 186.

⁴⁹⁹Central Statistical Authority, *The 1984 Population and Housing Census of Ethiopia: Analytical Report at National Level* (Addis Ababa, December, 1991), P.11. The restructuring includes renaming, dissolving the old and forming new administrative units. The previous *Ţäqelay Gezate* (governorate- General) was renamed *Kefelä Hagäre*

grew more than twofold compared to the 1967 population size. Such population growth demanded huge expansion work in those towns having a limited number of safe drinking water supply sources previously. Similarly, appeals for new water supply installation works became a pressing issue in a number of newly founded *Woreda* and *Awrajja* towns.

The water supply infrastructure development during the *Derg* period was conducted in a relatively planned and systematized way. One manifestation element was the modus operandi used to grade urban centers so as to provide with water supply service in a particular budgeting year. Now it was done in a methodical way. A set of criteria were formulated to be used for ranking urban centers. Two major categories of criteria can be distinguished: the criterion used to select towns with in a province and the criterion used to select towns at country level keeping the distribution fair among each province. The population size of the town, access to water in the town in terms of quantity, quality, and distance, the socio-economic role of the town, the level of road infrastructure, and the availability of technical information related to water works were grouped under the first set of criteria. But, these criteria could favor urban centers of some provinces and disfavor others. So, steps were taken to make use of extra criteria to maintain impartiality in the process of rating towns in provinces. The second group of criteria was developed with this intention. These included the areal coverage of the province, population size, number of towns in the province, urban population size of the provinces, the number of urban centers having no modern public system and policy issues to expand water into the fourteen provinces. These criteria were computed in comparison with the country's areal coverage,

(province). The imperial time *Meketele Woreda* (sub-district) was dissolved. Instead new administrative unit namely *Qäbälè* (local/lowest administrative unit) was formed. The old *Woreda* (district) administrative unit continued to function with a status below *Awrajja* (sub-province) and above *Qäbälè* (local/lowest administrative unit).

population size, etc. 500 Despite procedural setbacks, the availability of such criteria was a stepforward movement by itself for making a fair and reasonable distribution of the water service. However, there were cases in which the aforesaid laws were violated. An archival document provides evidence for this:

... የጉድንድ ቁፋሮው ስራ ከዛገሪቱ የኢኮኖሚ ልማትና የሶሻል እድገት ፣እንድሁም ከጦር ሰፈሮች ዕቅድ ጋር እንዲቀናጅ ቢደረግ በይበልጥ እንደሚጠቅም ስለተገመተ የጉድጓድ ቁፋሮው ስራ ስለሚካሄድበት ስፍራ ቅደም ተከተል በጠቅላይ መምሪያው በኩል ሁኔታው እየተመዛዘነ በሚወሰነው መሰረት እንዲከናወን ስለታዘዘ በዚሁ መሰረት ሕንዲፈጸም አስታው*ቃ*ስሁ።⁵⁰¹

The borehole drilling work is anticipated to be more beneficial, if it is integrated with the plans of the military camps, and the country's economic progress and social development; so I inform you that the borehole drilling work must be carried out in accordance with the assessment on the ranking of sites put forth by the central department.

This extract makes clear that the government was aware enough about the role of the water supply infrastructure development in enhancing the country's socio-economic development. It also stressed the need to integrate the water works with the expansion of military camps. The necessity of providing clean drinking water in every areas of the country is not debatable. But, the fact that reaching the whole country at the time was impossible, selection would thus become a binding way out. Under the circumstance of meager financial capacity, it is not rational to give priority to the military camps. It is because military camps were situated around the border or uninhabited areas of having a small population size, dispersed settlements and lacked the characteristics of being permanently inhabited. This extract informs us that the situation did not allow accomplishing the water supply works based on the criteria set by the water institution.

⁵⁰⁰NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Agency Lä Behèrawi Abiwotawi Yä Meret Zämächa na Yä Maekälawi pelan Ţäqelay Mämeriya, Ţere 15, 1971.

501 NALA, Folder, 14.1.22, File, 14.1.22. 8 *Ato* Hailu Yimenu, Lä Enginer Tekezeshewa Aytenfsu, Hamelè 24, 1971.

Conducting a preliminary water study is the other pivotal point in making the water infrastructure development a planned and systematized agenda. Standards were set to determine the adequacy or inadequacy of the water volume in a proposed site of a certain urban center before construction work started. The first was the population size and settlement pattern. This criterion incorporated the initial population size and the projected growth rate in the next 30 years, and the expected annual net population growth for a similar time span. A master plan showing residential houses and development infrastructures planned to be constructed in that particular town with in the coming 30 years was also used. ⁵⁰² Critical investigation based on these criteria would help to avoid potential risks: the failure of getting water after accomplishing a good deal of construction work, the drying of water points and the closing of a public system attributable to the inadequacy or diminishing of water volume within a short period of the inauguration of a public system.

People in urban centers were well aware of the value of having clean and adequate drinking water. Thus, several requests for new water supply infrastructure construction, maintenance and expansion works were flowing to the Water Supply and Sewerage Service Authority via the province administrative offices. The petitions reiterated the suffering of the people due to the lack of drinking water of whatever quality. In the Amhara region, for example, such requests were presented repeatedly from the towns of Bure, Mota, Fenote Selam, Debre Markos in the province of Gojjam; ⁵⁰³ from the towns of Gonder, Gorgora, Debre Tabor, Chewahit, Qola Diba,

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⁵⁰²NALA, Folder, 20.1.52, File, 20.1.52.1, Yä Mäţäţe Wuha na Fesaşe Agälegelot Baläseleţane Lä Behèrawi Yäkätämoch Pelan Institute, Pagumè, 01, 1980.

⁵⁰³NALA, Folder, 17.1.12.03, File, 17.1.12.03. 01, Ato Ayalew Asres Lä Qola Däga Damot Awrajja Astädadär Şehefäte Bèt, Ţere 17, 1968: Ato Mengesha Worqneh Lä Kebur Fitawerari Meharene Minda, Mägabit, 16, 1968. ; Yä Mäto Aläqa Basaznew Gebeyehu Lä Kebur Doctor Asmelash Beyene, Miyaziya, 8, 1968.

Kokora Maryam, and Aykel, to name a few towns in the province of Gonder;⁵⁰⁴ and from the towns of Dessie, Kombolcha, Woldiya, Wore-Babu, Tenta and the like from the province of Wollo.⁵⁰⁵ Petitions were flooding starting from the early *Derg* period. The Gonder provincial administrative office, for example, wrote nine application letters from June, 1978 to May, 1980 mentioning the serious water problem of Gondar town.⁵⁰⁶ These questions were, in fact, beyond the then government's financial, human resource and material capacity. A lot of archival documents indicate numerous complaints on the suspension and interruption of approved water projects.⁵⁰⁷

Available sources also reveal new construction, expansion and maintenance works that were carried out in the Amhara region since the rise of *Derg* to power. During the early *Derg* period, new construction works were undertaken in the towns of Dejen, Bechena, Debre Sina, Fenote Selam and Bure. Dejen and Bechena got such a service for the first time in 1974. The water supply system of Debre Sina was operative by 1977 while construction work was ongoing at Fenote Selam in that same year. The water supply construction work in Bure town was interrupted at the borehole drilling stage by 1974. In the towns of Bahir Dar, Dessie, Debre Berhan, and Bati maintenance and expansion works were conducted. In Bahir Dar town both of

⁵⁰⁴NALA, Folder, 14.1.30, File, 14.1.30.3, *Ato* Beru Etisa Lä Gonder Awrajja Asetädadäre Şehefäte Bèt, Tahesase 19, 1969. ; The Gonder Town Water Supply and Sewerage Service Authority office archive (hereafter GTWSSSAOA), Folder, λη38 File, ω· 37/217, *Ato* Kende Wase Bä Ityopia Wuha Lemate Baläselţan Yä Kätämoch Wuha na Fesaŝe Derejete Lä Sämèn Meseraqe Yä operèŝene na Yä Tegäna Wana Kefelä, Hedare, 13, 1970.

⁵⁰⁵NALA, Folder, 14.1.14, File, 14.1.14.4, *Ato* Haile Giyorgis Lä Guade Asefa Ţelahun Mägabite 14, 1970.; *Ato* Haile-Giyorgis Tassew Lä Bähebräsäbawite Ityopia Giziyawi Wotadädärawi Mänegeste Yä Ityopia Wuha Lemate Baläseleţan, Mägabite, 11, 1970.; *Ato* Tebebu Beyene Lä engineer Tekezeshewa Aytenfsu, Ţekemet, 22, 1972.; Kombolča Water Supply and Sewerage Service Archive (here after K.W.S.S.S.A), *Ato* Tefera Eshete, Lä Behèrawi Wuha Habte Komiŝin Yä Mäţāţe Wuha na Fesaŝe Agälegelote Baläseleţan, Mäsekäräm, 29, 1977.; NALA, Folder 17.1.12.03, File 17.1.12.03.02, Dawit Kefle Lä Wollo Wuha Habte Lemate *Şehefäte Bète*, Hedar, 9, 1967.

⁵⁰⁶NALA, Folder, 14.1.15, File, 14.1.15.5, Ŝaläqa Melaku Tefera, Lä Guade Lètänal Kolonèle Hadis Tedla Yämerete Zämächa na Maekälawi Pelane Ţägelaye Mämeriya, Genbot, 27, 1972.

⁵⁰⁷NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seleţan Yä 1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.; NALA, Folder, 14.1.22, File, 14.1.22.8, Request for Assistance from the Government of Italy for Rural Water Supply Development in Central Region Annex page 1 and page 2, Bahir Dar and Jimma Regions summary of work for 1973 and 1974 e.c.

these endeavors were in progress by 1978. In the rest of urban centers both works were in full swing in 1979. While the cost of construction in most of these towns was covered by the municipalities, the costs for Dessie and Debre Berhan were covered jointly by the municipality and the Urban Water and Sewerage Service Agency. In addition, the Urban Water and Sewerage Service Agency covered the entire maintenance as well as expansion outlay required for Bahir Dar town. ⁵⁰⁸

A delegation of 16 members' ad-hoc committee visited the province of Gojjam in 1976. The committee had identified the need for drinking water in many towns of the province and it recommended Mota, Fenote Selam, Denbecha, Gemja Bet, Amanuel, Lumame, Debre Worq, Abechekle, Adet, Merawi, and Yejube to be primarily provided with water supply services. Shortage or absence of drinking water was a widespread problem in the country; however, the numbers of appeals written from urban centers in the Amhara region are indicative of the seriousness of the problem. Despite this, the Urban Water and Sewerage Service Agency was not doing as expected. In the two budgeting years, 1978 and 1979, the agency planned to extend a water supply system only for 36 towns throughout the country. The 1980 work plan of the

⁵⁰⁸NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Agency, Bä Kätämoch Wuha na Fesaše Derejete Bä projäketoch Mälek Yaletäyazu Yä leyu leyu Kätämoch Yä Mäţāţe Wuha Agälegelote Derejetoch Serawoch.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, *Ato* Ayalew Asres Lä Qola Däga Damote *Awrajja* Astädadäre Şehefāte Bèt, Ţere, 12, 1968.

⁵⁰⁹NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, Asmelash Beyene(Dr.) Lä Yä Ityopia Wuha Lemate Derejete, Addis Ababa, Miyaziya 16, 1968.

Sehefäte Bèt, Tere 17, 1968.; Ato Mengesha Worqneh Lä Kebur Fitawerari Meharene Minda, Mägabit, 16, 1968.; Yä Mäto Aläqa Basaznew Gebeyehu Lä Kebur Doctor Asmelash Beyene, Miyaziya, 8, 1968.; NALA, Folder, 14.1.30, File, 14.1.30,3, Ato Beru Etisa Lä Gonder Awrajja Asetädadäre Şehefäte Bèt, Tahesase 19, 1969.; NALA, Folder, 14.1.14, File, 14.1.14.4, Ato Haile Giyorgis Lä Guade Asefa Ţelahun Mägabite 14, 1970.; Ato Haile-Giyorgis Tassew Lä Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Yä Ityopia Wuha Lemate Baläseleţan, Mägabite, 11, 1970.; Tebebu Beyene Lä engineer Tekezeshewa Aytenfsu, Ţekemet, 22, 1972.; Kombolcha Water Supply and Sewerage Service Archive,(here after KWSSSA), Ato Tefera Eshete, Lä Behèrawi Wuha Habte Komišine Yä Mäţäţe Wuha na Fesaše Agälegelote Baläseleţan, Mäsekäräm, 29, 1977.

⁵¹¹NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969., p. 4.

agency too did not show increment.⁵¹² This tells us the existing mismatch between the increasing popular demands and the agency's capacity to respond to those demands. The fact that the urban water supply and sewerage service agency was at its infancy during this period; the growing demand for clean drinking water in the emerging urban centers made the agency's burden even more cumbersome.

Having understood the agency's problem, the Water Supply and Sewerage Service Authority had devised temporary solutions. It decided the Urban Water and Sewerage Service Agency to execute only the water supply works putting aside the sewerage tasks for the time being. That means some of its duties were reduced. Once more, some extra duties of the agency were abridged and offered to the Rural Water Development Agency. According to this arrangement, the Rural Water Development Agency was entrusted in 1977 with an extra responsibility of working on drinking water for urban centers whose population size was below 5,000. The water supply works of those towns having a population size between 5,000 and 10,000 was to be accomplished either by the rural or urban water agency as the case may be. The Urban Water Supply and Sewerage Service Agency was exclusively entrusted with the task of supplying water to urban centers having a population size of 10,000 and above.⁵¹³

The Rural Water Development Agency embarked on drilling deep boreholes in urban centers as of 1977 based on the new arrangement. The work progress report of the agency for the period from July, 1976 to April, 1977 confirms this. It had drilled deep boreholes, for instance, in the towns of Woldiya, Alamata, Senbete, and maintained the public system of Wurgesa, Mersa,

⁵¹²NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁵¹³NALA, Folder, 14.1.30, File, 14.1.30.1, Bä Ityopya Wuha Lemate Baläseletan, Yä Kätämoch Wuha na Fesaše Derejete Yä 1969 Yä Sera Report na Yä Miqätelute Huläte Amätate Eqede, Addis Ababa, Genbot, 1969.

Kemise, and Bistima. 514 A critical examination on the population size of these urban centers tells us that the rural water development agency had participated on water works irrespective of the actual number of inhabitants it was supposed to serve. This is because the population size of Woldiya town, for instance, could be surely above 10,000 by 1977, as it was 8, 505 a decade before.⁵¹⁵

It appears that the Rural Water Development Agency was in a much better position than the Urban Water Supply and Sewerage Service Agency with the new adjustment to carry out the work burden bestowed upon it. Otherwise, the work burden of the Rural Water Development Agency would not be easier if it were to solve the water problems of the vast majority of the region's rural public. By then, the number of urban centers having a population size falling between 2,000 and 5,000 was much greater. Irrespective of this reality, the new arrangement brought the Rural Water Development Agency to work in urban centers having 5,000 to 10,000 population sizes in cooperation with the Urban Water Supply and Sewerage Service Agency. So, how could it manage to surmount this additional burden? Had the arrangement of working in urban areas been done by shifting its focus and/or at the expense of the rural water development? These questions will be dealt with in the rural water development section discussed below.

In February 1979, the Urban Water and Sewerage Service Agency disclosed list of urban centers that had been placed in the different drinking water construction projects. These projects were either under operation or at a planning stage. The projects are known as the two towns' drinking water construction project, the eight towns' drinking water construction project, the twelve towns' drinking water construction project, the ten towns' drinking water construction project,

⁵¹⁴NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969. 515 Muhammad and Assefa, pp. 201-203.

the three towns' drinking water construction project, the seven towns' drinking water construction project (two projects), the twenty five towns' drinking water construction project, and the Assab town drinking water construction project. 516 Of the total 75 urban centers embraced in all these water construction projects, 13 were in the present day Amhara region. This number would surely increase if urban centers in north Shewa were included in the project document. The 13 urban centers were from the three provinces of Gojjam, Wollo and Gonder. These were Dangela, Debre Markos, Bure, Bahir Dar, Fenote Selam, Gonder, Addis Zemen, Dabat, Debre Tabor, Oobbo, Kombolcha, Dessie, and Woldiva. 517 Those towns incorporated in the 25 towns' drinking water construction project were Woldiya, Debre Tabor, Dabat, Addis Zemen, and Fenote Selam. Except for Fenote Selam and Woldiya, sources are silent regarding the actual progress of construction work in the remaining three towns. The water supply work in Fenote Selam commenced in 1977 while the Woldiya town water project was still under study. The towns of Dangela and Qobbo were incorporated in the eight towns' drinking water construction project. Construction had been completed and by 1977 the water network was providing services in both towns. The twelve towns' drinking water construction project incorporated two towns from Amhara region: Kombolcha and Debre Markos. Here a preliminary study was well underway by 1977. The quest for extension work in Dessie town was incorporated in the three towns' drinking water construction project, and in both⁵¹⁸ of the seven

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⁵¹⁶The term 'water project', 'water study project', and 'water construction project', differs in their operational meaning. 'Water project' refers to water studies and other works of the Water Service Agency of the town or towns. While the 'water study project' denotes the study and searching of fund for the town or towns, 'water construction project' allude to water project whose study is completed and budget is approved.; see NALA, Folder, 14.1.30, File, 14.1.30.1, Bä Ityopya Wuha Lemate Balä Seleţan Yä Kätämoch Wuha na Fesaše Derejete Yä 1969 Yä Sera report na Yä Miqäţelut Huläte Amäte Eqede, Addis Ababa, Genbot, 1969.

⁵¹⁷NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Authority, Bä leyu leyu Yä Mäţäţe Wuha projäketoch Yä Tädälädälu Kätämoch Zerezere, Addis Ababa, Yäkatite 8, 1971.

⁵¹⁸ There were two different projects with the name 'the seven towns' water project.'

towns' drinking water construction projects. A preliminary study of the three towns' drinking water construction project was programmed to be completed by 1978.⁵¹⁹

For giving lasting solution, the Gonder town water supply work had been incorporated in the seven towns' drinking water construction project. The authority planned to use the aid the Canadian government promised to render to resolving the water problem of four provincial capitals including Gonder. In line with this, a new project namely the four towns' drinking water construction project comprising Gonder (being a critical one), Jimma, Magalle, and Dessie got underway in 1980 in that order. 520 The project did not mention what type of water source was going to be developed for Gonder though a letter written a month before indicated about building a dam on the Angereb River. 521

Along with new constructions, maintenance and expansion works had been accomplished in few towns of the region. The Dissele Engine, electric motors, water pumps, and Dissel generators of the water networks of Bati, Debre Berhan, Bechena, Qola Diba, Debre Markos, Dessie, and Woldiya were maintained by 1979. Expansion work was also accomplished for the towns of Dejen, Debre Berhan, and Dessie. 522

As indicated above, the military government had designed strategies of decentralizing institutions and exploiting both ground and surface water so as to ensure access to safe drinking water supply. It executed varied activities namely: building dam, drilling deep borehole,

⁵¹⁹NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969. 520NALA, Folder, 14.1.15, File, 14.1.15.5, *Ato* Beyene Wolde Gebriel, Lä Maeden Yä Hayle Mamäneča na Yä

Wuha Lemate Minister, Miyaziya, 15, 1972.

⁵²¹GTWSSSAOA, Folder, 7h38 File, @ 37/217, Ato Hailu Tessema, Lä Kefelä Hagäru Asetädadäre Şehefäte Bèt, Mägabit 1, 1972.

⁵²²NALA, Folder, 14.1.30, File, 14.1.30.1, Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969.

developing hand-dug well, protecting springs and constructing ponds. These activities were marshaled to offer long-lasting as well as temporary solutions. The building of dam, drilling deep borehole and developing springs working with a Diesel engine machine or a hand pump offered long-lasting solutions; improving and clearing of springs and hand-dug wells had temporary effects in most cases. Yet, the critical water shortage in many towns of the current Amhara region had been tackled through both means. The Urban Water and Sewerage Service Agency, for instance, planned to solve the problems of seven towns temporarily by 1980. These were Addis Zemen, Dejen, Debre Tabor, Woreta, Ayekel, Mota, and Dembecha. Last the same time, the water supply construction works thought to bring lasting solutions in some of these towns were being launched. The site selection, borehole drilling and designing of the Woreta water project was completed before mid-1979. However, it did not start functioning by January 1980. The Addis Zemen water project proceeded at a similar pace with the Woreta project except the designing part. By 1980, the Aykel water project was at a designing stage and waiting for borehole drilling work. Last the same time, and the work of the work of the water project was at a designing stage and waiting for borehole drilling work.

In 1980, the Rural Water Development Agency had a plan to get involved in a wide ranging water construction work based on the earlier settlement. The plan included building one of the three water sources: drilling deep borehole, constructing hand-dug well or Yä Meneče Ţäräga (protection/development of springs) in many urban centers of the region. These were *Awrajja* (sub-province) and *Woreda* (district) capitals or *Yä Gäţäre Kätämoch* (rural towns). Drilling borehole was planned for the towns of Qola deba, Chewahit, Tekele Dengay, Mota, Dembecha,

⁵²³NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Authority, Bä Kätämoch Wuha na Fesaşe Derejete Bä projäketoch Mälek Yaletäyazu Yä leyu leyu Kätämoch Yä Mäţäţe Wuha Agälegelote Derejetoch Serawoch.

⁵²⁴GTWSSSAOA, Folder, ³th38, File, *ω* 37/217, *Ato* Leulseged Mesfin, Lä *Ato* Hailu Woldesemayat, Ţere, 17, 1972.

Durbete, Debre Worq, Degan, Gerba, Wore-ilu, Kabe, Dereq Amba (now Woyin Amba), Lalibela town, Lalibela Air Port, Tenta, Mekane Selam, and Mehal Meda. Hand-dug wells were to be built in Nefas Mewča, Zenzelma, Amanuel, Enjibara, and Enewari. The third task *yä Meneče Ţäräga* (protection/development of springs) work was scheduled for the towns of Areb Gebeya, Merawi, Addis Qedam, Agaw Gemja Bet, Yajiga *Menečoch* (Yajiga springs), Felege Berhan, Wogel Tena, Seqota, and Ankober. There is no information on the practicality of the projects. However, the reincorporation of some of these towns in the 1981 and 1982 annual plan gives us a clue on the postponement of the projects. The 1981 work plan of the north western *Qäţana Şehefāte Bète* (regional office), for instance, incorporated once more Mota, Debre Worq, Denbecha, and Chewahit along with new projects approved for Addet, Chagni, Gorgora, Debarq, Debat, Azezo, Essetie, and Amba Giyorgis. The document also shows an additional plan endorsed for drilling borehole for 13 extra towns by 1982.

As a whole, a modern water supply system (dam, deep borehole and springs working with pumping machine or hand pumps) had been installed, or at least planed to be installed, in a number of *Kefelä Hagäre* (Province), *Awrajja* (sub-province) or *Woreda* (district) capitals in the region in the period between 1974 and 1982. If we see the number of towns⁵²⁷ in Gojjam province, they were 13: Dejen, Bichena, Fenote Selam, Bure, Bahir Dar, Mota, Denbecha, Debre Worq, Adet, Dangela, Debre Markos, Durbete and Chagni. 18 towns namely: Dessie, Kombolcha, Bati, Woldiya, Alamata, Wurgesa, Mersa, Kemise, Bistima, Qobo, Degan, Garba, Wore-ilu, Kabe, Dereq Amba(now Woyn Amba), Lalibella, Tenta, and Mekane Selam were

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⁵²⁵NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁵²⁶NALA, Folder, 14.1.22, File, 14.1.22.8, Request for Assistance from the Government of Italy for Rural Water Supply Development in Central Region Annex page 1 and page 2, Bahir Dar and Jimma Regions summary of work for 1973 and 1974 e.c.

⁵²⁷The list of towns includes only those provided or planned to be provided with piped water supply system working with pumping machine and hand pump.

from Wollo. Those from Gonder were 14: Gonder, Addis Zemen, Dabat, Debre Tabor, Qola Diba, Chewahit, Tekel Dengay, Ayekel, Woreta, Gorgora, Debarq, Azezo, Essetie, and Amba Giyorgis. In north Shewa only a small number of urban centers got or planned to be provided with water supply service. These were Debre Sina, Debre Berhan, Senbete, and Mehal Meda. This figure did not include those urban centers which had been supplied with safe drinking water during the imperial period and whose water system was neither maintained nor expanded during the *Derg* period.

Closer examination of the water supply work that had been done in Amhara region so far indicates a focus on ground water exploitation. This was not in line with the government strategies of exploiting both surface and ground water through building dam, drilling borehole, digging hand-dug wells, protecting springs and constructing small ponds. An archival document produced in 1975 E.C. reveals the existence of dam (along with ten boreholes) which was supplying water to the town of Gonder. But, its name, location and construction time is not mentioned. The document simply emphasized the severity of the water problem of Gonder town despite the availability of the dam and the ten boreholes. And suggestions had been forwarded to give a lasting solution for the existential problem. The suggested solutions incorporated constructing an extra dam on Angereb or Mägäče River, stretching a line from Lake Tana or drilling extra boreholes. 528 The dam, which was the second one in the history of Gonder and the Amhara region water construction as well, was built on the Angereb River. It supplies pure drinking water to the town of Gonder. But, information is lacking as to the implementation of building a dam on the Mägäče River. Similarly, reports do not mention the construction of ponds to supply drinking water for urban centers. Almost the whole water construction work thus

⁵²⁸NALA, Folder, 17.1.13.03, File, 17.1.13.03.03, *Ato* Wogayehu Sahlu Lä *Guade* Addis Tedla, Nähasè, 18, 1975.

essentially revolved around drilling deep boreholes, hand-dug wells, and protecting springs.

Thus, the use of surface water for similar purpose remained untouched.

Secondly, the water supply system surfaced so far in all Kefelä Hagäre (province), Awrajja (sub-province) and *Woreda* (district) centers of Amhara region was dominated by point sources. The pipeline extension to individual dwellings had been rare particularly at Awrajja (subprovince) and Woreda (district) levels. Even in provincial capitals and some major towns of the region, a house to house connection system progressed slowly. For example, from 1978 to 1983, the number of private customers in Dessie town grew by 893. In the first two years that is 1979 and 1980, a private line was extended for 200 and 250 new customers respectively. Achievements had become low even in the years after 1980. 529 In 1984, for instance, new private lines were provided only for 40 customers.⁵³⁰ Available sources indirectly indicate the limited expansion of pipeline to individual houses or an interconnected public system in other urban centers of the region, too. The number of public water distribution points, which were erected in a town, reinforces this assertion. There were 65 distribution points in Gonder town by 1983. ⁵³¹ This means that almost all the urban dwellers obtained water from standing distribution points. It is also clear from this fact that the water supply work focused more on producing distribution point by far than extending house to house connections.

One of the problems mentioned in providing a house to house connection was a shortage of water-gauges used for measuring the volumes of water consumed and collecting service charges from customers. Unlike public distribution points, installing water-gauges was a necessity to collect a service charge from a connected water system. In distribution points, a fixed amount of

⁵²⁹DWSSSO, Folder, 1/16, Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

⁵³⁰DWSSSO, Folder, 1/16, Yä Dessie Kätäma Wuha Agälegelote Yä 1976 Amäte Meheräte Riporete.

⁵³¹NALA, Folder, 17.1.13.03, File, 17.1.13.03.03, *Ato* Wogayehu Sahlu Lä *Guade* Addis Tedla, Nähasè, 18, 1975.

money was charged based on the size of a water container. Furthermore, there was a practice of paying a fixed amount of money per month from households in the late 1984. ⁵³² In fact, information is scarce about the implementation of this system for long time and in a wider area. Such service charge collecting methods were not beneficial to both the organisation and its clients. The requested prices lacked standard measurements for most locally used water containers. This created a room for abuse.

The urban water infrastructure development went a step-forward during the *Derg* period. Although all the projects were not executed as scheduled, the water supply work in large part got underway in many areas. Attempts were made to execute the endorsed plans. Even if the water supply work was characterized by inconsistency, the achievements in the first half of the *Derg* regime were reasonable. The encouraging drinking water infrastructure development recorded during the second half of the 1970s, however, did not continue with similar pace in the 1980s. Archival sources show a limited number of new urban water projects endorsed since the mid-1980s. Several reasons can be forwarded as to why this happened. First of all, since the urban water supply work was a joint venture of the Urban Water Supply and Sewerage Service and the Rural Water Supply Development Agencies, ambitious plans were prepared by both groups to reach several places being qualified as urban centers. But, both agencies did not execute the projects on time. Such delays in construction might entail postponement or interruption of projects. Under these circumstances, both agencies could not develop new projects before completing the previous ones. It may be for this reason that the Urban Water Construction Agency remained busy finishing the already approved and uncompleted projects for more than a decade. The water construction work of the towns of Kombolcha, Dessie, Gonder, and Debre

⁵³²DWSSSOA, Folder, 12/11, *Ato* Mulugeta Abate Lä Hayqe Leyu Käfetäña *Ş*ehefäte Bèt, Tahesase, 10, 1976.

Markos, just to name a few, being initiated in the late $1970s^{533}$ was near completion in 1987 and 1988^{534}

Overall, the urban water supply infrastructure development in Amhara region was destined to undergo more than half a century of hardship. Despite the longstanding efforts of Ethiopian governments in this area, they did not bring about the required progress. Residents of both big and small urban centers did not stop collecting drinking water from nearby rivers, streams, ponds, etc. until the late *Derg* period. 535 This predicament emanated principally from the inadequacy of the water infrastructure development, as well as the occasional failures of the water system. The water supply infrastructure development, though it showed improvement, was not advancing in a scale of solving the water problem on a permanent basis due to several intertwined flaws. Construction works consumed more time. Existing water systems occasionally failed. These failures often required extra expenses to carry out maintenance or expansion works.

The urban water supply system, forget the rural, did not go beyond covering its operation and maintenance cost during the military regime.⁵³⁶As a rule, expenses incurred in water project construction works came from the government coffer. Archival sources also attest the presence of public contributions, both in labor and money, to help speed up the extension of water services.⁵³⁷ People often assisted water work projects through fund raising programs prepared in

⁵³³NALA, Folder, 14.1.30, File, 14.1.30.1, Bä Ityopya Wuha Lemate Balä Seleţan Yä Kätämoch Wuha na Fesaše Derejete Yä 1969 Yä Sera report na Yä Miqäţelut Huläte Amäte Eqede, Addis Ababa, Genbot, 1969.; NALA, Folder, 14.1.35, File, 14.1.35.5, Urban Water and Sewerage Authority, Bä leyu leyu Yä Mäţäţe Wuha projäketoch Yä Tädälädälu Kätämoch Zerezere, Addis Ababa, Yäkatite 8, 1971.

⁵³⁴KWSSSA, Folder, 32, File, 2/4, *Ato* Seid Aragaw Bä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan Lä Sämène Meseraqe Qäţana Şehefäte Bèt, Miyaziya 24, 1980.

⁵³⁵NALA, Folder, 14.1.14, File, 14.1.14.4, *Ato* Haile Giyorgis Lä Guade Asefa Telahun, Mägabite 14, 1970.

⁵³⁶NALA, Folder, 17.1.13.03, File, 17.1.13.03.03, *Ato* Wogayehu Sahlu Lä *Guade* Addis Tedla, Nähasè, 18, 1975.

⁵³⁷GTWSSSAOA, Folder, 7h38, File, & 37/217, Ato Ayele Habte-Mikael Lä Gonder Kefelä Hagäre Asetädadäre Sehefäte Bèt, Tahesase, 26, 1970.; NALA, Folder, 14.1.14, File, 14.1.14.4, Ato Haile Giyorgis Lä Guade Asefa Telahun Mägabite 14, 1970.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, Ato Demetse Gebre-Medihin Lä

different urban centers. 538 These programs, however, could not raise the needed finance to fund the projects. The military government itself did not have dependable sources of funding. Most water projects were thus commenced with the financial aid or loans the water authority solicited from donor agencies. For example, out of the 20,000,000 berr invested to accomplish the eight towns' water construction project 14,700,000 berr was obtained through loans. Similarly, 33,000,000 berr of the 40,000,000 berr required to realize the twelve towns' water construction project was planned to be covered through loans anticipated from the Federal Government of Germany. 539 The problem was that the more the reliance on loans and aids, the lesser were the chances of getting the required amount. The processes of requesting loans were very complicated. Loan donors wanted to see two things from loan request proposals: how the loan would be repaid after the project work was completed, and how the water supply service could be managed. 540 The fact that Ethiopia's ability in debt servicing was at its lowest ebb and the urban water supply and sewerage service agency was not staffed by the required skilled human resource that could effectively manage the water supply; it seemed that loan proposals did not fulfill the requirements of potential loan donor.

There were also policy related obstacles in the process of securing foreign aid. As coincidence, the 1980s was a period in which the International Water Supply and Sanitation Decade (1981-

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Behèrawi Abeyotawi Yämerete na Yä bahele Edegäte Zämächa Ţäqelaye Mämeriya Yä Gojjam Kefelä Hagäre Zärefe Şehefäte Bèt, Mägabite, 19, 1975.

⁵³⁸NALA, Folder, 17.1.13.03, File, 17.1.13.03.03, *Ato* Wogayehu Sahlu Lä *Guade* Addis Tedla, Nähasè, 18, 1975.

⁵³⁹NALA, Folder, 14.1.35, File, 14.1.35.5, Ato Amhayesus Metaferiya Bä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Sera Amärare na Masältäña Mäkanä Ţenate, Ţekemet, 6, 1971.; DWSSSOA, Ato Barsula Sermolo Bähebräsäbawite Ityopia Giziyawi Wotadädärawi Mänegeste Bä Ineduseteri Minisetère Lä Behèrawi Çäreqaçäreqe Derejete, Tahesase, 28, 1972.

1990) was launched. The water decade placed due emphasis on rural water development.⁵⁴¹ So did aid and donor agencies. The following extract substantiates this point:

ኢትዮጵያ ለውሃ ልማት ክልዩ ልዩ ሀገሮች እርዳታ አግኝታለች፣ በማገኘትም ላይ ነች። አብዛኛዎቹ የውጭ ሀገር እርዳታ ሰጪ ድርጅቶች የሚሰጡት እርዳታ በገጠር ልማት ላይ እንዲውል የሚያተኩር ፖሊሲ ስላሳቸው ክእርዳታቸው አብዛኛው የሚያተኩረው በገጠሩ ውሃ ልማት በኩል ነው።.... ከውጭ ሀገር ብድር እና እርዳታ በሚጠየቅበት ጊዜ ጥያቄው ለከተሞች እየተባለ ሲቀርብ በውጭ ሀገር ያሉት አብዛኛዎቹ እርዳታ ሰጪዎች እነዚህን እኛ አርባን እያልን የምንጠቅሳቸውን ከተሞች (ሳይወዱ በአስተሳሰብና በዘልማድ) እንደራሳቸው ከተሞች (urban centers) እየተመለከቷቸው ለነዚህ ስፍራዎች እርዳታ መስጠትን እንደቅንጦት በመቁጠር እርዳታውን ለመስጠት ይጨነቃሉ። አይሰጡምም። 542

For water development, Ethiopia has obtained and is getting aid from different countries. Most foreign aid donor organizations have a policy that the aid they offer must be invested on rural development; eventually, the largest part of their aid is targeting rural water development. ... When aid and loans are requested from foreign countries in the name of urban centers, donors consider them as a luxury because they perceive our urban areas in a par with their own urban centers, so they are worried to release aid to us, and will never do so.

Yet, Ethiopia secured better development aid during the *Derg* period than it had been before. According to Alex De Waal, the flow of foreign aid had grown tenfold during the lifetime of the military government.⁵⁴³ It obtained assistance from the socialist and capitalist countries. Even though it was a socialist state, the majority of the aid came from the European community and the World Bank. This was commensurate with the policies and strategies donor nations and agencies pursued in relation to aid. In the 1980s aid was rendered primarily on humanitarian grounds. Accordingly, both the capitalist and socialist states extended humanitarian assistance irrespective of ideology. It should be noted that Ethiopia was still the aid receiver with a low ranking, 45th among the recipient countries.⁵⁴⁴

⁵⁴¹Feachem, p. 15.

⁵⁴²GTWSSSAOA, Folder, 7h38, File, & 37/217, Ato Beyene Wolde Gebriel, Lä Ato Seyoum Mahmud, Nähasè, 26, 1970.

⁵⁴³Alex De Waal, p. 734.

⁵⁴⁴Clapham, 'Revolutionary Socialist Development.....', pp. 158-159.

The meager domestic financial capacity of the government too was threatened by multifarious factors. The political confusion in the country significantly affected the economic stability of the military government throughout its rule. Separatist fighters and insurgents in the north were advancing to the center in the second half of the 1980s. The government was forced to mobilize huge material and human resource to the war front, a condition that incapacitated it to generate revenue and to deal with the domestic economic crisis. This was exacerbated by the 1984 widespread famine. The ongoing civil war together with the 1984 famine had paralyzed the economic stamina of the military government. Thus, the yearly government budget allotted for development activities greatly dwindled. Since the government and the insurgent forces were fighting around most urban centers of Wollo, Shewa and Gonder, the damage inflicted on the already established water supply systems too incurred significant maintenance costs. The absence of peace and stability thus thwarted the expansion of water infrastructure works in most parts of Amhara region in the late *Derg* period.

The progress of the water supply infrastructure development in Amhara region in the period under discussion was also obstructed by the absence of an appropriate management system. Despite the rhetoric on institutional decentralization, a top-down approach dominated the water supply work. This is clear from the day to day communication conducted between the authoritative body and the beneficiaries. To start with, there are no significant archival documents showing written correspondence between local area water supply claimants and the *Qäţana Şehefäte Bètoch* (regional offices). The majority petitions addressed to the National Water Resource Commission or the Water Supply and Sewerage Service Authority. And all

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⁵⁴⁵Alex De Waal, p. 734.

⁵⁴⁶Adhana Haile, 'Peasant Response to Famine in Ethiopia, 1975-1985', Ambio, 20, 5 (August, 1991), p. 186.

water construction projects discussed above were approved by the central institutions. ⁵⁴⁷ Financial matters in particular had been entirely allotted by the central institution. ⁵⁴⁸ This makes clear that the attempt on decentralizing institutions remained largely on paper. There was no full empowerment conferred up on *Qäṭana Şehefāte Bètoch* (regional offices). Until July 1984, the northwestern *Qäṭana Şehefāte Bèt* (regional office), for instance, was not allowed to administer the operational and maintenance work of the rural water supply development. ⁵⁴⁹ As a whole, the main actors of the water supply infrastructure development were the state and institutions at the center; they were not local institutions and the community. Why empowering decentralized institutions was not put in place? It was partially due to the fact that *Qäṭana Şehefāte Bètoch* (regional offices) were not well organized in the late 1970s and the early 1980s. They lacked both the material and human resource. ⁵⁵⁰

The other manifestation of the centralized system was the absence of maintenance center at provincial and lower administrative units. So whenever a diesel engine, pumping machines and/ or an automobile failed, operations were interrupted and the defective equipment/vehicle would be sent to Addis Ababa. Maintenances were often delayed due to the work burden of technicians in Addis Ababa. Sources confirm the absence of maintenance units in the provinces until

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⁵⁴⁷NALA, Folder, 14.1.30, File, 14.1.30.1, Bä Ityopya Wuha Lemate Balä Seleţan Yä Kätämoch Wuha na Fesaše Derejete Yä 1969 Yä Sera report na Yä Miqäţelut Huläte Amäte Eqede, Addis Ababa, Genbot, 1969.

⁵⁴⁸NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969.

⁵⁴⁹ DMUAC, Folder, 1011, *Ato* Getachew Tamrat Bä Maekälawi Pelan Yä Behèrawi Komitè Şehefäte Bèt Yä Semen Meseraqe Ityopya Yä Pelan Qäṭana Şehefäte Bèt, Hamlè, 19, 1977.

⁵⁵⁰NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Ţeraze Huläte, Addis Ababa, Sänè, 11, 1969.

³⁵¹ DWSSSOA, Folder, 1/37, *Ato* Berhe Gebreyesus, Bä Mäţäţe Wuha na Fesaše Agälegelote Baläselţan Yä Sämèn Meseraqe Qäţana Şehefäte Bèt, Tahesase, 10, 1979. ; *Ato* Hezeqeyas Alemu Lä Sämèn Meseraqe Qäţana Şehefäte Bèt, Ţeqemete, 8, 1981.

1989.⁵⁵² In fact, attempts had been made to solve the problem by establishing a mobile garage. Yet, it had an insignificant impact.⁵⁵³ Thus, the management problem that appeared due to prolonged bureaucracy seems to have continued unabated despite the attempt to decentralize institutions.

Shortage of skilled human resource was the other problem thwarting the successful management of the water supply infrastructure development. All the water institutions from the highest to the lowest level lacked well-trained human resource. Until recently, all the designing, preliminary and/or feasibility studies on water projects were carried out by foreigners. And these foreign experts were not dependable ones. Due to this reason, most water works had been carried out based on practitioners' proposals, without a detailed preliminary or any other study at all. Looking at workers' profile clearly confirms the dearth of skilled human resource. The Dessie town Water Supply and Sewerage Service Agency report for 1971-1975 E.C budget year, for instance, reveals the number of workers and their educational qualification across work units. Of the 21 workers assigned in the technical department, there was only one employee with 12+1 academic certification. While 18 employees had grade one to grade six educations, the remaining two were grade seven and eight completes. Undoubtedly, these workers were literate in terms of writing and reading but they had very little or no technical knowhow. The failure of boreholes

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 $^{^{552}}$ DWSSSOA, Folder, 1/37, Ato Mesele Mengesha Lä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan, Ţere 13, 1981.

 $^{^{553}}$ DWSSSOA, Folder, 1/37, Ato Berhe Gebre-Eyesus Lä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan, Ţere 14,1978.

⁵⁵⁴NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Asefa Tilahun Bä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Negede na Geberena Minisetèr, Miyaziya, 16, 1971.; GTWSSSAOA, Folder, 37/217, *Ato* Kefeyalew Achamyeleh Bä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Gonder Kefelä Hagäre Asetädadäre Şehefäte Bèt, Hedare 25, 1971.

⁵⁵⁵DWSSSOA, Folder, 1/16, *Ato* Berhe Gebreyesus, Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

to provide water after the completion of the drilling work as reported from some sites⁵⁵⁶ must have been attributed to the shortage of skilled human resource.

The failure of the Gonder town water supply construction work for a long time is a good manifestation of the lack of skilled human resource. Available sources since the early Derg period indicate the efforts made to solve the dearth of drinking water in the town of Gonder. The town's water project, as discussed before, had been incorporated first in the seven towns', and then in the four towns' water construction projects with particular authorization. The severity of the water shortage drew the attention of higher authorities. But, no significant progress was seen even after a decade. In May 1980, to offer both temporary and lasting solutions, drilling additional boreholes and conducting new studies were proposed. 557 Despite these steps, the water predicament continued until 1985. As available documents show, the survey study had been carried out by foreign professionals⁵⁵⁸ with questionable expertise. Foreign professionals could not be dependable both in terms of access and know-how as there was no established system of verifying their proficiency in Ethiopia. The repeated failure in solving the Gonder town water problem clearly demonstrated this. The transfer of the mandate of administering the Gonder town water service to the National Water Resource Commission in January 1985 was partly due to the lack of skilled human resource. In this regard, the National Water Resource Commission had better access to acquire the needed expertise and professionals than regional offices. The power transfer was chosen as a remedial solution before the water service system entirely collapsed. A letter written to the National Water Resource Commission provides the following information:

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⁵⁵⁶NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä1972 Amätä Meheräte Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁵⁵⁷NALA, Folder, 14.1.15, File, 14.1.15.5, Hailu Yimenu Lä Maeden Yä hayel Mamäneča na Yä Wuha Lemate Minisetèr, Genbot, 28, 1972.

⁵⁵⁸NALA, Folder, 14.1.15, File, 14.1.15.5, *Ato* Beyene Wolde-Gebriel Bä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Maeden Yä Hayel Mamäneča na Yä Wuha Lemate Minisetèr, Miyaziya, 15, 1972.

...ከዚህ በኋላ ርክክቡን ማዘማየት የውሃውን አንልግሎት ሁኔታ ይበልጥ በማባባስ አንልግሎት የማይሰጥበት ደረጃ ላይ የሚያደርስ በመሆኑ፤ ይህ ደብዳቤ ከተፃፈበት ቀን አንስቶ የውሃ ሃብት ኮሚሽን የጎንደር ከተማን የመጠጥ ውሃ ክፍል ተረክቦ እንዲያስተዳድር የተወሰነ *መሆኑን እየገለፅን*....⁵⁵⁹

Delaying the transfer may exacerbate further the existing condition of the water service to complete failure; thus we would like to inform you the decision that the administration of the Gonder drinking water department is given to the National Water Resource Commission beginning from the date this letter is written.

As indicated before, the dearth of finance beleaguered the agency's effort to sustain the water supply infrastructure development. This problem partly had its roots in the inability of the Urban Water Supply and Sewerage Service Agency to generate a sufficient income of its own. Basically, water had been provided with a modicum of service charges. As reports indicated, there was a serious shortage of water-gauges and the agency could not effectively collect service charges. The fact that the water system of the *Derg* period was dominated by public taps, watergauges were not installed. The agency used to collect approximate service charges from users. The government also insisted that distribution of water for hospitals and health centers should be free of charge. This regulation was, in fact, first enacted by the imperial government Yä Šehefäte Minister (Ministry of Pen) and was in use during the early Derg period. 560 Yet, the glaring setback was the lack of modern management capable of developing a viable system of collecting service charges on a regular basis and reinvesting the income for maintaining and expanding the water infrastructure. 561 This situation made the agency weak financially, dependent on government coffer as well as foreign loans and aid.

⁵⁵⁹ GTWSSSAOA, Folder, 7h38, File, & 37/217, Akelilu Afeworq, Bä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Behèrawi Wuha Habete Komišine, Ţere 07, 1977.

⁵⁶⁰DWSSSOA, Folder, 1/16, Grazmach Mamo Yegezu, Lä Wollo Kefelä Hagär Asetädadäre Şehefäte Bèt,

Teqemete, 11, 1968. ⁵⁶¹NALA, Folder, 14.1.35, File, 14.1.35.5, *Ato* Amhayesus Metaferiya Lä Yä Hebrätäsäbeawite Ityopia Giziyawi Wotadärawi Mängesete Lä Sera Amärare na Masältäña Mäkanä Tenate, Tekemet, 6, 1971.; NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969.

The occasional interruption of the service delivery had also exacerbated the water supply shortage in several towns of the region for long. These interruptions were caused either due to technical failure of pumping machines, lack of reserve pumping machine, power interruption, lack of spare parts or a break on pipelines and other mechanical failures. ⁵⁶² And all these problems remained unresolved chronic challenges of the water supply service for a long period of time.

Towards the end of the *Derg* period, severe water shortage was particularly reported from urban centers whose water infrastructures had been well established. Enormous archival collections talk of the shortage of water supply in big towns like Dessie, Gonder, Kombolcha, Bati, and Hayq. The critical water shortage recorded in these towns in the late *Derg* period had more to do with security problems than lack of access to water infrastructure. This is because the ongoing civil war compelled a great number of people to migrate from *Awrajjas* (sub-provinces) and *Woredas* (districts), and even from the neighboring *Keflä Hagär* (province), like Tigray and Eritrea and settle in government occupied urban centers of Dessie, Gonder, Kombolcha, Bati, Debre Tabor, Hayq and the like, doubling the towns' population. The presence of a huge number of army units in and around these towns accentuated the problem. Maximum exploitation of available sources also endangered the carrying capacity of the water points. The problem demanded doubling the actual volume of water being produced. Expanding the water infrastructure was not a feasible option while short term solutions were implemented. As a short-

⁵⁶²DWSSSOA, Folder, 1/37, *Ato* Mesele Mengesha Lä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan, Ţere 13, 1981.; *Ato* Hezeqeyas Alemu Bä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan Lä Semen Meseraqe Qäţana Şehefäte Bèt, Sänè 20, 1981.; *Ato* Kiros Tsegaye Lä Guade Beru Etisa Yä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan Wana Sera Asekiyaje, Miyaziya, 8, 1982.; NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, *Ato* Demetse Gebre-Medihin Lä Behèrawi Abeyotawi Yämerete na Yä Bahele Edegäte Zämächa Ţäqelaye Mämeriya Yä Gojjam Kefelä Hagäre Zärefe Şehefāte Bèt, Mägabite, 19, 1975.

⁵⁶³DWSSSOA, Folder, 39, *Ato* Ebrahim Habib Lä Däbub Wollo Asetädadäre Akababi Yä Mäţäţe Wuha na Fesaše Agälegelote, Yäkatite, 6, 1983. ; *Ato* Hizeqiyas Alemu Lä Däbub Wollo Asetädadäre Akababi Šängo Sera Asefäşami Şehefäte Bèt, Yäkatite, 6, 1983.

term solution, the available water was distributed in a shift system. Transporting water for the army contingents stationed in the environs of the towns from the nearby rural *Meneçoch* (springs) was also put in place. As a long term solution, the agency began to undertake a preliminary study for expansion work.⁵⁶⁴ Information is scarce as to what extent this plan was implemented and the water problem of these urban centers was solved. If it had been implemented, it would have surely created an infrastructural imbalance among urban centers later on. This impact could be seen after the end of the war and the return of the displaced people to their original places. So an attempt will be made to examine this issue in some detail in the next chapter.

The water work of the *Derg* period was carried on in an institutionalized manner. The successes and failures of the water supply works were identified with names of public institutions. It was not uncommon to disregard the contribution of individuals in such ventures. Perhaps because of this that archives do not talk about the success of water projects through individual efforts. Yet, two personalities are mentioned with great acknowledgement for their spectacular contribution. Both of them had occupied higher government offices in Dessie town. These were Shimelis Alemu and Tesema Belay who were members of the organizing committee of the Workers Party of Ethiopia. 565

Rural Water Supply

Rural water supply construction has been one of the most neglected fields of development endeavors in Ethiopian history. Though it was initiated in the mid 1950s, the rural water supply

⁵⁶⁴DWSSSOA, Folder, 39, *Ato* Hizeqiyas Alemu Lä Däbub Wollo Asetädadäre Akababi Šängo Sera Asefäşami Şehefäte Bèt, Yäkatite 6, 1983.

⁵⁶⁵DWSSSOA, Folder, 1/16, *Qès* Tsegaye Bishaw Lä Wollo Kefelä Hagäre Astädadäre Şehefäte, Bèt, Genbot 2, 1976. ; *Ato* Berhe *Gebre-Iyesus Lä Dese Aţäqalaye Mekere Bèt, Sänè, 1, 1980.*

work did not stride much by the end of the imperial rule. The fact that there had been favorable situations in the post-revolution period meant that some progress was anticipated. Internationally, ensuring access to rural water supply became the major concern of member states of global organisations such as the United Nations. The declaration of the International Water Supply and Sanitation Decade (1980-1990) was a good example. The water decade was vital to realizing the motto 'Health for all by 1993'. ⁵⁶⁶ Donor agencies and governments of the developed nations wholeheartedly supported the efforts on rural water development. Governments of the developing countries expressed their commitment for making it a major component of their development agenda.

Internally, in line with this global initiative, the Military government began to take measures on rural water development. As has been mentioned before, regional offices had been established in an attempt to decentralize institutions and to help facilitate the activities of the Rural Water Development Agency. The rural water development agency had prepared a one year water scheme in 1977. It had also endorsed a five-year development plan extended from 1978 to 1982. The water decade also was endorsed for implementation from 1984-1994. A research on producing hand pumps locally had been initiated and was well underway by 1980. The first products had been installed in Yerer and Kereyu, and Haykoch and Butajira *Awrajjawoch* (sub-

⁵⁶⁶NALA, Folder, 11.1.32, File, 11.1.32.1, Yä Hayejine na Akababi Ţèna Agälegelote Wana Kefele, Yä Akababi Ţèna Agälegelote Tägebare Bämimälakäte Bä 1973 Bäyäkefelatä Hagäre Yä Tädärägäwune Gubeňete na Yäsera Kenewene Yämigäleşe Aţäqalay report.

⁵⁶⁷NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seleţan Yä1972 Amätä Meheräte Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁵⁶⁸Dassalegn, 'Water Resource.....', p. 16.

⁵⁶⁹NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Beru Etisa Lä Behèrawi Abeyotawi Yämerete Zämächa na Yämaekälawi pelan Ţäqelay Mämeriya, Ţere, 14, 1972.

provinces) in Shewa and in Asosa *Awrajja* (sub-province) in Wollega.⁵⁷⁰ A feasibility study on setting up windmill plants in Ethiopia was also started.⁵⁷¹

The drive behind installing locally produced hand pump and developing windmill manufacturing plants could have been rooted in the theoretical discourse of the period. In the 1970s and beyond, the theory of dependency had gained attention. As mentioned in the conceptual and theoretical framework section, dependency theory advocated that relations between the developed and the developing states were exploitative in nature. The backward countries were thus advised to establish industrial plants in order to undercut their dependency on the developed nations. It seems that the military government had inclined to establish water supply construction instrument manufacturing plants for reducing its dependency on the western nations in particular and the developed nations in general.

Many developments bolstered society's perceptions on the value of having access to safe drinking water. In this regard, the contribution of university and high school students' campaign called *Yä Edegäte Bäheberäte Zämächa* (Development through Cooperation Campaign) in augmenting public awareness was significant. ⁵⁷² The literacy campaign in particular needs mentioning. It was through it that the society of Amhara region and the society of the country for that matter were well acquainted with basic sanitation and health education. The lessons from the 1973 / 1974 drought and famine as well as the deficiency of water infrastructure of the imperial

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⁵⁷⁰NALA, Folder, 14.1.44, File, 14.1.44.3, Engineer Tekezeshewa Aytenfsu Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Hezebe na Lä Hagär Dähenenäte Ţebäqa Ministèr, Mäsekäräm, 14, 1972.

⁵⁷¹These research works were conducted with a fund obtained from International Development Research Center of the government of Canada and United Nations Development Program (UNDP), see, NALA, Folder, 14.1.38, File, 14.1.38.2, Yä minisetèroch Meker Bèt Tahesase 4, 1970 Bäadärägäw Sebsäba Bäeje Selämisäru Yä Wuha Mäsabiya Mäsariyawoch Ţenate Perojèkte Tänägagero Yätäsäţä Wusanè, Tahesase 4, 1970; NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Addis Aneteneh, Lä Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Yä Ityopia Wuha Lemate Baläseleţan, Pagumè, 1, 1970.; *Ato* Alem Alazar, Lä Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Yä Ityopia Wuha Lemate Baläseleţan, Ţere, 21, 1972.

⁵⁷²Bahru Zewde, 'A History of Modern', pp. 239-240.

period seemed to have motivated the Military government to embark on rural water supply development programs.

The annual plans of the Rural Water Development Agency show the number of boreholes, handdug wells and spring protection to be accomplished in each province and in a given fiscal year. There is no information as to how the standards were set in order to decide the number of boreholes, hand-dug wells and springs intended to be built in each province or region. But, critical examination of the available archival sources indicates the presence of some set of decision-making mechanisms. It is interesting to see the 1977 annual plan of the Rural Water Development Agency. The number of boreholes planned to be drilled in Harerege, Hawasa (Sidamo, Bale and Gamogofa), Jimma (Keffa, Illubabor and west Wollega), Bahir Dar (Gojjam and Gonder), Eritrea, Tigray, Wollo and the central (Shewa, Arsi and east Wollega) regions was 20, 16, 0, 0, 8, 16, 33, and 21 respectively, while the actual number of drilled boreholes was 21, 14, 0, 0, 0, 18, 41 and 24. It is clear that the annual plan did not incorporate regions where water insufficiency was less severe. Some sections of Harerege, Hawasa (Sidamo, Bale and Gamogofa)), Eritrea (even if it was not at all implemented), Tigray, Wollo and the central (Shewa, Arsi and east Wollega) regions were and still are known as drought-prone areas. So, the water scarcity history of some regions seems to have served them as a rationale to get priority over others. Though it is not clearly shown, the water potential of the regions must have been considered in order to decide the number of water points to be constructed in any one province /region. In other words, the authority's decision was correlated with the water scarcity of provinces or regions. The realities at a provincial or local level substantiate this historical fact. In a letter written to the Ethiopian Water Development Authority, provincial administrative offices (together with other developmental and public organizations) were requested to select localities

that would qualify for water supplies by taking due consideration to the severity of the water problem, population size, developmental activities and resettlement program being undertaken, the availability of road networks, etc.⁵⁷³ So these same standards appear to have been used at a national level. But, as argued earlier, the water supply infrastructures were not consistently carried out based on a definite set of rules and regulations. The following extract starkly demonstrates the intervention of political figures. It reads:

ንድ መንግስቱ ጎይስማሪያም የጊዚያዊ ወታደራዊ አስተዳደር ደርግና የኢሥፓአካ ሊቀመንበር፣ የአብዮታዊ ጦር ጠቅላይ አዛዥ በቅርቡ በጎጃምና በጎንደር ክፍስ ሃገራት የስራ ጉብኝት ባደረጉበት ወቅት የገጠር የመጠጥ ውሃን በሚመለክት ጉዳይ ለገበሬዎች አምራ/ ⅓ ች የህብረት ስራ ማህበራት ቅድሚያ እንዲሰጥ ትእዛዝ የተላሰፌ ስለሆነ ይህንጉ ተግባራዊ ለማድረግ በጎንደር ክፍለ ሃገር በአምራቾች የህብረት ስራ ማህበር የተደራጁትን የገበሬ ማህበራት ስምና አድራሻ በአስቸኳይ እንድታሳውቁን።⁵⁷⁴

When Comrade Mengistu Haile-maryam, Chairman of the Provisional Military Government of the *Derg* and the Organizing Committee of the Workers' Party of Ethiopia, [and] Commander-in-Chief of the Revolutionary Army paid a working visit to the provinces of Gojjam and Gonder, he ordered to have farmers' cooperatives the priority to get access to drinking water supply. To implement this order let you inform us straight away the lists and addresses of organized farmers' cooperatives in Gonder province.

Unlike the imperial regime which relied on hydraulic technology, the military government designed wide-ranging activities to run the rural water supply work. These included drilling deep boreholes, doing hand-dug wells working with or without hand pumps, protecting/developing springs, and constructing ponds. This was a much better approach to reach far-off villages. Did the military government successfully exploit all these methods? An attempt will be made to answer this question below.

We have seen the 1977 annual plan and its achievements. Of the total 114 deep boreholes envisaged to be drilled in the country, 33 were found in the Amhara region. The actual number

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⁵⁷³NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Alem Alazar Lä Itopya Wuha Lemate Baläseleţan, Miyaziya 15,

⁵⁷⁴NALA, Folder, 14.1.15, File, 14.1.15.5, *Ato* Beru Etisa Lä Geberena Minisetère, Genbot, 25, 1973.

of boreholes planned and drilled in Amhara region, in fact, exceeded this figure. First of all, the plan incorporated the two provinces of Wollo and north Shewa. But, those in Shewa were not included. Since the figure given for Shewa was part of the central region encompassing Shewa, Arsi and east Wollega, the exact number of projects allotted for north Shewa, a zone in the current Amhara region, is difficult to know. Second, registered achievement exceeded the plan. The borehole drilling work in Wollo had been executed 24 percent more than it was set on the plan. 575

Information is crude about the 1978 and 1979 budgeting years. Nothing is mentioned not only about how much was achieved but also the list of those *Qāṭanas* (regions) which the plan of action had incorporated. But, achievements are expected to excel the 1977 program for the simple reason that the plans show greater increment. While 223 boreholes were planned to be drilled in the 1978 fiscal year, those for the 1979 were 309. Similarly, the number of planned hand-dug wells was 360 for each year. Regarding spring development, it was 3 for 1978 and 51 for 1979 budgeting year. ⁵⁷⁶ Complete information is available regarding the 1980 budgeting year. Unlike in 1977, the plan now incorporated all regions of the country. But, there are two archives with differing figures. While the first discloses 209 bore holes, the second one indicates 254. ⁵⁷⁷ In the same way, differences have been observed regarding the number of hand-dug wells and springs. Nevertheless, the first figure seems reliable. This is because not only the document was produced while the project was going on but also because it disclosed both what was planned and executed. Thus, it is preferable to use it for assessing what was done in the study

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⁵⁷⁵NALA, Folder, 14.1.30, File, 14.1.30.1 Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969. We do not get all these water points in the current Amhara region given that a portion of the then Wollo Province is demarcated within now Afar region. ⁵⁷⁶Ibid.

⁵⁷⁷NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seleţan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.; NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Alem Alazar Lä Ityopya Wuha Lemate Baläseleţan, Miyaziya 15, 1971.

area. Of the total 209 boreholes, 53 were in Amhara region. This number once again does not include the projects in north Shewa due to a similar reason mentioned above. Of the remaining two Qäţanas (regions), the Kombolcha *Qäţana Şehefäte Bèt* (regional office) took the largest part, that is, 46. Only 7 boreholes were planned and drilled under the Bahir Dar *Qäţana Şehefäte Bèt* (regional office). The hand-dug wells were 14 in the north western *Qäţana* (region) and 8 in the north eastern *Qäţana* (region). ⁵⁷⁸

The rural water construction accomplished so far placed due emphasis to the north eastern *Qäţana* (region) and now north Shewa zone. Unless there is a gap in the sources, the trend seems to have shifted to the north western *Qäţana* (region) since 1981. The Bahir Dar *Qäţana Şehefäte Bèt* (regional office) disclosed digging 12 and 13 boreholes, doing 60 and 65 hand-dug wells, and developing 22 and 10 springs in the 1981 and 1982 budgeting years respectively. ⁵⁷⁹

The year 1984/85 was a period in which Ethiopia was struck by drought and famine after a lapse of ten years. The drought and famine was followed by a cholera epidemic. To control the spread of the disease, additional water and sanitation works had been initiated. Information is scarce about drilled boreholes working with a hand pump. But, greater achievement had been registered on springs and hand-dug wells development using both concrete and local materials. The following table shows the number of springs and hand-dug wells planned and constructed either by cement or local materials in the 1985 and 1986 budget years.

⁵⁷⁸NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁵⁷⁹NALA, Folder, 14.1.22, File, 14.1.22.8, Request for Assistance from the Government of Italy for Rural Water Supply Development in Central Region Annex page 1 and page 2, Bahir Dar and Jimma Regions summary of work for 1973 and 1974 e.c.

Table - 2. Springs and boreholes construction in Wollo, Gojjam and Gonder, 1985-1986.

	1985					1986			
Province	Springs planned	Constructed By cement	Constructed by local materials		Springs	Constructed	Constructed by local materials		
			springs	Hand-dug wells		planned	By cement	springs	Hand-dug wells
Wollo	233	-	187	69		230	10	208	111
Gojjam	190	16	1125	1518		190	16	122	271
Gonder	217	5	1176	500		217	5	102	254

^{*}Adapted from NALA, Folder 14.1.31, File 14.1.31.4, Bä 1977 na 1978 Yätaqädu na Yätäkänawonute Yämäţäţe Wuha Menčoch na Gudgwadoch (Wells).

As can be seen on the table, there was no significant difference among provinces in terms of planned and developed springs with concrete in the two budget years. Yet, Gojjam attained better than the rest. Visible difference was there on the development of springs and hand-dug wells from local materials. Once again Gojjam excelled followed by Gonder. The achievement in Wollo was dismal. If we see across the periods, 1985 was much better in all aspects.

There is no information why the performance of Wollo province remained low both in 1985 and 1986 budgeting years. The possible explanation is that the strategies adopted during these times were inappropriate. The fact that the drought was severe in Wollo, getting water within a short depth could be so difficult. The alternative means was drilling deep boreholes for which sources are lacking.

The rural water supply infrastructure development during the military period was marked by multiple stakeholder participation. These actors involved in donating financial and technical

assistances, or physically participating on the water construction. Sources indicate the flow of these assistances from the United Nations Development Program (UNDP), the United Nation International Children's Emergency Fund (UNICEF), the European Economic Commission (EEC), and the governments of Canada, Sweden, Britain, Japan, the Democratic Republic of Germany, and the Federal Republic of Germany. These organisations and governments rendered financial and technical assistances or physically involved in water construction works in two or more regions or fields of activity. While the United Nations Development Program (UNDP) was supporting in the planning, hydrometeorology engineering for strengthening the Ethiopian Water Resource Authority head office and hydrogeology and engineering for the Wollo regional office, the United Nation International Children's Emergency Fund (UNICEF) participated on the borehole drilling work projects in Wollo and hand-dug well construction scheme in two other regions. The European Economic Commission (EEC) assisted the establishment of the Jimma and Bahir Dar regional offices. The rural water supply of the southern region was supported by Canada. Moreover, Canada released funds for the production of hand pumps locally. Similarly, Sweden supported the Harerege region both financially and technically. 580 Britain involved in the central region through supplying both financial and technical assistance.⁵⁸¹ While the Federal Republic of Germany assisted the program of training water technicians in Ethiopia, the

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⁵⁸⁰Ibid.; NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Beru Etisa Lä Behèrawi Abeyotawi Yämerete Zämächa na Yämaekälawi pelan Täqelay Mämeriya, Tere, 14, 1972.; *Ato* Alem Alazar Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Wuha Lemate Baläseleţane, Genbot 20, 1972.; *Ato* Assefa Tilahun Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Behèrawi Abeyotawi Yämerete Zämächa na Yämaekälawi pelan Täqelaye Mämeriya, Mäsekäräm, 29, 1972.; *Ato* Assefa Tilahun Lä Wuha Gudguwad Qufaro Derejete, Teqemete, 11, 1972.; *Ato* Addis Anteneh Bähebräsäbawite Ityopia GiziYawi Wotadärawi Mänegeste Lä Ityopia Wuha Lemate Baläselţan, Pagumè, 1, 1970.

⁵⁸¹NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Beru Etisa Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Maeden Yähayel Mamäneča na Yä Wuha Lemate Minisetèr, Hedare 19, 1972.; engineer Tekezeshewa Aytenfsu Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Behèrawi Abeyotawi Yämerete Zämächa na Yämaekälawi pelan Ţäqelaye Mämeriya, Lä Faynanese na Bejäte Mämeriya, Mäsekäräm, 1, 1972.

democratic republic of Germany provided technical assistants.⁵⁸² In so doing, the assistance of donor organizations and governments impinged on the water supply work of the study area.

In a net shell, a great deal of achievements had been registered in the field of rural water development in the Amhara region during the Military period. If it is seen in comparison with existing favorable conditions, however, the progress was slow and the spatial coverage inadequate. As mentioned before, circumstances were suitable for doing additional rural water development works. In spite of that, accomplished activities were minimal and temporary solutions in nature. The drilling of deep boreholes working with hand pumps fixed on them had not been practiced to the required degree. Instead, greater attention was given to springs protection and hand-dug wells development working without pumps. The failures were deeprooted having to do with flawed implementation and management strategies as well as infrastructural problems. Besides, it could partially be the result of the global influence over domestic development policies. During the military rule, modernization theory which dominating the imperial period and expounding the principle of attaining highest level of development by using the western model had begun losing its previous ascendancy due to the critics it faced particularly from the dependency proponents. Among the new thoughts of the 1970s, the International Labor Office's pronouncement of 'redistribution with growth' in 1972, and the World Bank's theory of meeting 'basic needs' in 1973 are worthy of note. 583 The focus of the military government on cost-effective safe drinking water projects seem to have been driven by the desire to meet the basic needs of the rural masses. Such approaches were pertinent to easing

⁵⁸²NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Alem Alazar Bäheberäsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Wuha Lemate Baläseleţane, Genbot 20, 1972. ; *Ato* Assefa Tilahun Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Behèrawi Abeyotawi Yämerete Zämächa na Yämaekälawi pelan Ţäqelaye Mämeriya, Mäsekäräm, 29, 1972.

⁵⁸³Leys, pp. 11-12.

the water problem of the rural masses. But, they did not bring lasting solutions even when additional wells were dug every year. The strategies also add no up to date experience to the water infrastructure development. In point of fact, local communities used both methods for long. It would have been better if the military government had given due emphasis to drilling deep boreholes working with machines or hand pumps. The financial problem that curbed the progress of the rural water supply work of the imperial period on account of its emphasis to hydraulic technology was now relaxed because obtaining aid and loans in the name of expanding rural water supply development had become easier during the period of the military rule. The following extract substantiates this:

በተለይም በአሁት ጊዜ ለንጠር ውሃ ልማት የተገኘው ዕርዳታ ከፍተኛ ሆኖ የመጠቀም አቅማችን በጣም ውስን በሆነበት ወቅትና ከተፈለንም ተጨማሪ እርዳታ በቀላሱ ለማግኘት በሚቻልበት ጊዜ በክሬዲት መጠቀም የሚያስፈልግበት ሁኔታ አይታየንም።⁵⁸⁴

At this Particular time when the amount of aid we obtain for rural water development is soaring and getting extra aid is much easier, our consumption ability is so low that the use of credit appears to be not feasible.

The production of locally made hand pumps and windmills with the support of foreign governments was a good beginning. This too supports the argument that the Military government, as compared to its predecessor, was in a better position to employ a hydraulic technology.

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⁵⁸⁴NALA, Folder, 14.1.22, File, 14.1.22.8, *Ato* Alem Alazar, Bähebräsäbawite Ityopia Giziyawi Wotadädärawi Mänegeste Lä Ityopya Wuha Lemate Balä Seletan, Tekemete, 15, 1972.

Picture - 1. A ruined wind mill plant



Picture No. 1:- Source-A photo taken by the author, November, 2016.

This wrecked windmill plant is found in the present South Wollo Administrative Zone, Jamma Woreda about 105 kilometers on the highway from Dessie to the town of Degolo via Wore-ilu, at a particular place called Wolle. It was erected in 1985.

Picture - 2- A deep borehole working with hand pumps and commonly installed in several rural areas of Amhara region.



Picture No. 2:- Source-A photo taken by the author, 14, April, 2017.

It is problematic to argue that the military government did not utilize the huge foreign assistances and loans opportunities available for the rural water development programs. Rather it would be acceptable to say that it had transferred them for expanding urban water supply infrastructure. The urban bias that was seen in the authority's decision of entrusting the Rural Water Development Agency with the responsibility of planning and constructing urban water supply is indicative of this notion of unfairness. At that point in time, the Rural Water Development Agency was not in a position to carry out both tasks concurrently. The human resources were insufficient in number and lacked expertise. So the decision was urban biased in its nature and implemented at the expense of the rural water development.

Clearly the water infrastructure development was managed with a more centralized approach. Despite attempts to decentralize the water institution, all activities right from planning to drilling and pumping installation had been accomplished by a centrally set top-down approach. 585 A letter written by the Ethiopian Water Resource Authority has this to say:

ከአውሮፓ የኢኮኖሚ ኮሚሽን ለውሃ ልማት ስራ በተገኘው የቴክኒክ ሕርዳታ የገጠር ውሃ ልጣትን ስራ በጎንደርና በጎጃም ክፍለ ዛገራት ለማስራት እ.ኤ.አ ኦከቶበር 6 ቀን 1978 ዓ.ም ጆን ቴሰር እና ልጆቹ ከተባሰው አ*ማ*ካሪ መዛንዲስ ድርጅት *ጋ*ር ውል ተፈራርመናል። በዚሁ ውል መሰረት ከዚህ በታች የተመለከቱት ኤክስፐርቶችና አማካሪዎች ከኢትዮጵያ ዉዛ ልማት ባለስለጣን *ጋ*ር በመተባበር በጎንደር ክፍለ ዛ*ገ*ር በልዩ ልዩ ስፍራዎች እየተዘዋዎሩ የወሃ ልማት ስራ ለማከናዎን በህዳር ወር 1971 ዓ.ም ስራ ጀምረዋል።⁵⁸⁶

We signed an agreement in October 1978 with an engineering consultant agency named Jon Taylor and his sons to accomplish rural water development in the provinces of Gonder and Gojjam with the technical assistance obtained from the European Economic Commission. Based on the aforementioned agreement, the experts and consultants listed down in collaboration with the Ethiopian Water

⁵⁸⁵NALA, Folder, 14.1.44, File, 14.1.44.3, *Ato* Alem Alazar Lä Itopya Wuha Lemate Baläseleţan, Miyaziya 15,

⁵⁸⁶GTWSSSAOA, Folder, 7h38, File, @ 37/217 Ato Kefeyalew Achamyeleh Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Gonder Keflä Hager Astädadäre Sehefäte Bète, Hidar, 25, 1971.

Development Authority had started their work in November 1978 by travelling to the different areas in Gonder province.

The budget was approved and released to Oätana Sehefäte Bèt (regional office) by the central institution. The former had to get the good will of the latter. 587 This top-down approach could at times be advantageous for acquiring higher technology and expertise. It could also assist to properly use the meager skilled human resource and equipment in a scheduled manner. However, for Amhara region, where most water works were focused on spring protection and hand-dug well development, a decentralized approach or community-run management system was preferable. Such works did not need skilled human resource partly because communities using their own local knowledge, experience and skill could construct better and more water points than those individuals assigned by the government in every village. So the government intervention had to be providing locally unavailable materials, like drilling machine, pumping machines and organizing technical trainings for operators. The government had to work vigorously on the manufacturing of hand pumps and windmills within. The lack of sustainability in this regard had greatly affected the rural water infrastructure development of Amhara region.

Most water works that had been accomplished by drilling machine were found in areas where there was access to road infrastructure. And as most places in the study area did not have modern road network and inaccessible particularly during the early *Derg* period, the water infrastructure expansion could not show much progress. 588

⁵⁸⁷NALA, Folder, 14.1.30, File, 14.1.30.1, Ethiopian Water Resource Authority, Yä 1969 Yä Sera Eremeja Report, Teraze Huläte, Addis Ababa, Sänè, 11, 1969.

Teraze Huläte, Addis Ababa, Sänè, 11, 1969.

The South Wollo Rural Road Construction Office Achieve (here after, SWRRCOA), File, 104, *Ato* Tesfaye

Yimer, Lä Sämèn Meseraqe Ityopia Pelane Qätana Šehefäte Bèt, Mägabite, 11, 1978.

Socio-economic Impact

The socio-economic progress expected to come by the physical accessibility of the water infrastructure necessitates ensuring the availability of safe drinking water both in quantity and quality, the service reliability (continuity), as well as the required level of consumption and affordability. The absence of water treatment plants and laboratories endanger its quality and impedes socio-economic development. Poor service delivery, high tariffs and low consumption level also negatively affect socio-economic growth. Taking all these elements into consideration it would be vital to examine the impact of the water infrastructure expansion on the nature and extent of the socio-economic development in the study area.

The primary motives behind the water supply infrastructure development were aimed at tackling the dearth of drinking water, reducing water-washed and water-borne diseases so as to improve the health status of the society, shortening the time and the travelling distance to fetch drinking water, reducing the suffering of those shouldering the responsibility of collecting water, and shifting the saved time to be used for productive activities. Though the degree of attainment varied from place to place, the military government tried its best to meet these objectives. During this time, the society was acquainted with consuming clean water and the value of maintaining better hygiene. Reports indicate the declining trend of both water-washed ailments (ill-health caused by lack of hygiene) and water-borne diseases in areas where access to clean water supply was secured. These changes were felt widely, ranging from individual households to government offices or public establishments such as schools, detention centers, healthcare institutions, government or private farms, factories etc., where transmission of water-borne outbreaks were threatening human lives. Accessibility of clean water had also encouraged governmental and

non-governmental organizations to do more.⁵⁸⁹ However, for various reasons the water service delivery was not dependable both in time and space. The following extract confirms this:

በኮምቦልቻ አካባቢ ተዛማች የተቅማጥ በሺታ ንብቶ በመታየቱ ሁኔታው በክፍለዛንሩ ጤና ጥበቃ በኩል ቡድን ተቋቁሞ እንዲጠና ከተደረገ በኃላ በምርመራው ከተገኘው ውጤት ህመሙ የመጣው ህዝቡ ቀደም ሲል ለመጠጥ ይጠቀምበት የነበረው የቧንቧ ውሃ በድርቁ ሳቢያ በማጠሩ በአካባቢው ካለው ከቦርከና ወንዝ እየቀዳ ስለተጠቀመና የወንዙም ውሃ ንጽህና ስለሌለው እንደሆነ በመንንዘቡየወንዙ ውሃ ለመጠጥ እንዳይውል መደረጉን የገለጸ ስለሆነ ይህ እንዲታወቅ ቀርቧል፡፡

Since an outbreak of communicable diarrheal disease was seen in the environs of Kombolcha; the Provincial Health Office assigned an investigative team to look into the problem. Examination result shows that the disease was caused by ingesting impure water collected from the nearby Borkena River at the time when the volume of piped water has dwindled due to the drought. It is to let you be aware that the investigative team stated that the river water henceforth should not be used for drinking.

Similar problems were reported from several urban centers of the study area.⁵⁹¹ The failure of the public systems was often attributed to both human and natural causations.

Equally important was the problem of water pollution due to lack of appropriate care, and absence of periodic water quality testing and treatment method. Water can be polluted while it is being transported or stored in a reservoir. Reports show that the public water was polluted while it was stored in uncovered reservoirs as well when there was no controlling outlet, and/or when the system used old, broken, and leaking pipes for distribution. Before 1980, the water in the provinces was provided with no laboratory investigation. There were no laboratories outside the capital city, Addis Ababa, to verify whether the water ready for distribution was polluted or not.

⁵⁹⁰NALA, Folder, 17.1.12.02, File, 17.1.12.02.04, Kä Meseraqe Kefelatä Hagäre Masetäbabäriya Mämeriya Lä Guade (comrade) Mämeriya Halafi, Mäsekäräm, 4, 1977.

4, 1984.

 $^{^{589} \}mathrm{DWSSSO},$ File, 1/16, Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

 ⁵⁹¹ NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, *Ato* Mekonen Wondim Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Bä Agäre Asetädadäre Ministèr Yämazägaja Bètoch Wana Mäseriya Bète, *Sänè*, 8, 1968.
 ⁵⁹² DWSSSO, Folder, 39, Dr. Niguse Yitagesu Lä Dese Kätäma Wuha Na Fesaše Agäleglot Şehefäte Bète, Nähasè,

The only option was sending a water sample to Addis Ababa, a cumbersome task 593 for Woredas (districts), Awrajjas (sub-provinces), and Kefelä Hagäroch (provinces) to send samples to the capital. A laboratory service began in provincial hospitals and health centers in the early 1980s. A statement extracted from a letter written in February 1981 reads as 'በከፍላተ ሃገር ደረጃ የጤና ላብራቶሪዎችን ለማቋቋም የጤና ፕቢቃ ማኒስቴር ባወጣው አቅድ መሰራት የባህር ዳር ከተማ ለዚሁ ተማባር መመረጧን ተረድተናል። 594 (In line with the plan the ministry of health endorsed to establish health laboratories at provincial level, we have realized the selection of Bahir Dar town to be a center for this purpose.) Then laboratories were established in Dessie and Gonder towns. 595 A relatively better laboratory service was possible in the 1980s; and, even if there were intermittent failures, the practice of testing water quality had brought significant transformation in the field. Above all, the water source had significant contribution. As it is indicated before, most of the water schemes in Amhara region tapped ground water sources. This water source is largely free from bacteriological hazards. A recent study, for instance, shows that the water provided in North Gonder was free from both bacterial and chemical threats 596

Following the water supply infrastructure development, the distance traveled and the time spent in search of drinking water greatly reduced. But, this reduction varied from place to place owing to the type of water supply system implanted in a particular area. In big urban centers, the water supply work comprised a house to house connection as well as installation of public distribution points. The problem of travel had been mostly solved in the first case despite the limited spatial

⁵⁹³Many of the *Woreda* and some *Awrajja* centers had no road network linking them with the capital in the period under discussion. Even those which were connected had no access to regular transport service.

⁵⁹⁴NALA, Folder, 11.1.12, File, 11.1.12.1, Doctor Malede Maru Lä Guade Doctor Tefera Wonde, Yäkatite, 3, 1973. ⁵⁹⁵NALA, Folder 11.1.12, File 11.1.12.1, *Ato* Gebreamanuel Teka Lä Gonder Yähekemena Sayense Kolèje, Mägabite, 8, 1973. ; *Ato* Feseha Haile-Meskel, Lä Guade Brigadier General Gezaw Tsehay, Hamelè, 29, 1977. ⁵⁹⁶GTWSSSAOA, Folder, †h38, File, Φ- 37/217, Amhara National Regional State Water Resources Development Bureau: Inventory of Water Supply Schemes and Data Base Management, North Gonder Zone Volume I Main Report August, 2005, p. 25.

coverage. For instance, 3,473 customers covering roughly one-tenth of households in Dessie town benefited from a house to house connection system by 1983.⁵⁹⁷ A great number of urban dwellers used to collect water from their immediate neighbors. Yet, the majority households obtained water from the 22 distribution points erected throughout the town in that same year. Here consumers had to travel a maximum of 30 minutes for a round trip.⁵⁹⁸ This was similar almost in all major urban centers of the region. So the changes registered in reducing distance and times were significant.

At *Awrajja* (sub-province), *Woreda* (district) centers and big villages, the water system had been operating through distribution points. There were pipeline connections to government offices like health centers, secondary schools, residences of well-to-do or notable individuals and some big hotels (by the standared of the time). In many places water distribution points were erected within a distance of half to one kilometer. This had shortened the time required for a round trip to be a maximum of half an hour. Equally important was the change registered in the rural areas. The fact that the water service had been extended to those villages previously suffering from severe water constraints meant that visible changes were brought in terms of distance travelled and time required for villagers to get drinking water. Access to the deep boreholes, which were relatively protected from pollution, also had a positive impact on the health of the population. The incidences of water pollution in the rural areas were lessening as people did not use reservoirs for storing water. The better access to water supply, the higher the consumption

⁵⁹⁷DWSSSO, Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

⁵⁹⁸The distance is estimated by the researcher during the field work.

⁵⁹⁹DWSSSO, Folder, 12/11, *Ato* Getachew Desta Bä Mäţäţe Wuha na Fesaše Agälegelote Balä Seleţan Lä Sämène Meserage Qäţana Şehefäte Bèt, Hedar 21, 1978.

⁶⁰⁰ The distance is estimated by the researcher during the field work.

level of beneficiaries would be. But, sources are not in a good position to pinpoint the average volume water an individual used daily both in urban and rural areas.

The overall development discussed so far played an encouraging role in minimizing the work burden of women and girls who were traditionally expected to carry out all the domestic chores including collecting drinking water. A great number of women and girls in big urban areas like Kombolcha, Dessie, Gonder, and Debre Markos were relieved from transporting drinking water. They got water either from their own or neighbors' taps or from nearby distribution points. Those living in small towns or the rural villages also enjoyed a degree of relief from water harvesting hardships as they could easily fetch water from nearby distribution points or boreholes. Thus, a great number of economically active women and girls got extra time to engage in other incomegenerating activities.

The water supply infrastructure development during the military period was intended to improve the health status of the people and facilitate the socio-economic development of the country. However, the economic development of the country as a whole was discouraging. 601 It would be legitimate to ask why the expanded water service could not assist to promote the country's economy in a meaningful way. As it is clearly indicated in chapter one, the impact of clean drinking water on the economy is not always direct. In spite of the fact that it helps to nurture a healthy and productive manpower, one cannot be sure about their productivity. This means that achieving economic progress requires additional investments on the available human resource. This did not happen during the *Derg* period. The war situation did not allow it to do that. The military government was compelled to mobilize huge material and human resource to the war

601Clapham, "Revolutionary Socialist Development in Ethiopia", p. 165.

front.⁶⁰² Youngsters were compulsorily recruited to take part in a national military service. The final years of the *Derg* period particularly witnessed huge mobilization of economically active youngsters of both urban and rural origins to the military camps. The civil war situation was not conducive to muster the country's resources to the betterment of the beleaguered economy, which was often dubbed as 'war economy.' Displacement and migration of people was widespread. And the government was hard pressed with rehabilitation works. In short, had there not been prolonged internal conflicts and the complexities that they created, the impact of the water supply infrastructure expansion on the economic development would have been tangibly observed.

And yet, the impact of the water infrastructure development was seen in the field of creating job opportunity for a limited number of skilled and unskilled workers. Indeed, as compared to the unskilled ones, the employment level of skilled human resource in the sector was negligible.⁶⁰³

It is worth mentioning the cultural changes that came along with the expansion of clean water supply. Previously, a water point served both for humans and animals as well as for drinking and washing purposes. Using river water for drinking without making improvement was a norm than exception throughout the region. With the expansion of water supply infrastructure, however, such practices began to be changed. Similar transformation began to be seen in the area of personal hygiene and sanitation. Maintaining personal hygiene, which had been confined to the privileged few, now became a widespread practice. Furthermore, the major source of water pollution, that is, an open human execration had dwindled. In urban areas in particular

⁶⁰²Gebru Tareke, 'From Af Abet to Shire: The Defeat and Demise of the 'Ethiopia's' 'Red' Army, 1988-1989', The *Journal of Modern African Studies*, 12, 2 (June, 2004), pp. 240-243.

⁶⁰³DWSSSOA, Folder, 1/16, *Ato* Berhe Gebreyesus, Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

⁶⁰⁴Mesfin Wolde Mariam, 'Problems of', p. 27.

significant achievements had been registered with regard to disposal of human execration. Towards the end of the *Derg* period, the culture of excreting in the open space had significantly reduced in most urban areas of the region.

The water supply work had also encouraged the tourism sector. The more hotels and lodges were furnished by safe water and sanitation facilities, the greater the number of both domestic and foreigners visitors. This was a case in the towns of Gonder, Baher Dar and Lalibella. 605

Environmental Impact

Until September 1984, there were no applicable set of laws, rules and regulations in Ethiopia for keeping the wellbeing of the natural environment from damage arising from water construction works and their improper exploitation. Despite the responsibility it was entrusted with, the National Water Resource Commission failed to do that for a decade and half since its establishment. As the interest in water construction works increased, the National Water Resource Commission prepared in 1984 a set of laws and regulations to govern the water construction works and their utilization. The primary motive of these laws and regulations was to maintain the safety of the environment. The laws and regulations were mainly concerned with conducting quality control on the designs and constructions of water works, identifying the type of sources and deciding the volume of water to be exploited and carrying out impact analyses regarding the effect of upstream water construction endeavors over the downstream communities and the like. Until the endorsement of these laws and regulations, the commission issued guidelines. These guidelines enforced individuals, institutions or groups of people being interested in water works to fulfill two major tasks before engaging in construction activities:

 $^{^{605}}$ GTWSSSAOA, Folder, 2 h
38, File, 2 37/217, 2 Melese Asfaw Lä
 Guade Šaläqa Melaku Tefera, Sänè, 15, 1971.

submission to the National Water Resource Commission of a proposal on the work design and plan, objectives and the volume of water intended to be produced, and an agreement to accomplish the construction work based on the approved design and plan, and receiving a letter of confirmation from the National Water Resource Commission before starting utilization.⁶⁰⁶

Available documents confirm that existing environmental protection mechanism in Ethiopia during the period under discussion was too loose. The water construction works were carried out without giving due consideration to the environment. There was no different monitoring practice working in the Amhara region. Surprisingly enough the archives do not talk about the threats the drinking water construction works may have posed. Similarly, there were no complaints raised by downstream communities on the upstream water supply works. The fact that the water works in the Amhara region were targeting ground water, the causal factor for water shortage that appeared in the source area could not be identified easily. As the theme has been generally neglected in Ethiopian historiography, professional research works on this sector are almost absent. What appears important is the argument for more water construction works and less on the potential threats to the wellbeing of the environment. Yet, there had been indirect but significant environmental damages caused by water infrastructure development. As it is clearly indicated in chapter three, indigenous plants like Šolla (Ficus Sycomorus) had been common around naturally flowing ground water points or *Menečoch* (springs). The destruction of these indigenous trees would result in the drying and pollution of those *Menečoch* (springs). But, the more an area was accessed to drilling boreholes, the less frequent visitations and protection of Menečoch (springs). Menečoch (springs) were no more developed as sources of drinking water.

⁶⁰⁶NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, *Ato* Alem Alazar Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Agäre Asetädadäre, *Mäsekäräm*, 14, 1977.

Gradually, this led to the deforestation of the surroundings indigenous trees and the drying up of springs.

It should be noted that the local communities preserved indigenous trees not on the basis of scientific knowledge concerning their importance, but owing to their indigenous belief that big trees were the major source of the *Meneče* (springs) and the continual flow of water. In Ethiopia people believed that indigenous trees are inhabited by spiritual entities and are perceived as sacrosanct. This deep-rooted belief to some extent helped the preservation of indigenous trees as well as the water sources in different localities.

Water Consumption and Conservation Pattern

Consuming clean water in Amhara region has always been the choice of the people. But, for long, lack of knowledge and the dearth of access to pure water impeded the fulfillment of this wish. The military government had made considerable efforts to spread the idea and importance of consuming clean and adequate water. This was accomplished through declaring literacy campaign and expanding modern education. The literacy campaign had exposed the illiterate masses of Ethiopia to basic sanitation and health education that emphasized on how to curb water-washed and water borne-diseases through personal hygiene and consumption of safe drinking water. With the expansion of modern education, these ideas were consolidated and became entrenched among the Ethiopian masses. The increase in accessing clean water had also created a good opportunity for people to practice and consolidate those ideas obtained through formal and informal educational systems. In urban communities utilizing water for maintaining hygiene had become a regular activity during the military rule. Hotels and individual households began to have bath rooms. In most hotels, bed rooms used to have at least one common bath and

flushed restroom. Similarly, the use of water for toilet flushing had started in the major towns of the region. They started using water for gardening and animals, though the degree varies from area to area. A large amount of water was also consumed by government institutions and some small-scale manufacturing or factories in major towns of the region since the pre-revolution period: Debre Berhan, Kombolcha, Dessie, Bahir Dar and Gonder are cases in point. The Kombolcha tannery and textile factories, the Dessie soft drink factory, the Debre Berhan blanket factory, the Bahir Dar textile factory were among the major consumers. In Dessie town, for instance, 20 m³ and 106 m³ water had been distributed daily to the Dessie Teacher Training Institute and to the Dessie Soft Drink Factory respectively by 1982.⁶⁰⁷ The volume of water given daily to the Dessie Soft Drink Factory grew to 120m³ by 1983.⁶⁰⁸ Information is scarce on the volume of water distributed to the rest institutions. But, the Kombolcha textile factory alone had 3,446 employees.⁶⁰⁹ The net effect of all these developments had been an increase in water consumption level. The people had begun to use much amount of water for a variety of purposes.

The low conservation habit of the society too had been costing more water. Because of the unwise use of consumers large volumes of water had been wasted in residential houses, educational institutions, hospitals, in factories etc. Water wasted due to the absence of proper management of equipment and the timely maintenance work was also significant. Until recently, people were not sufficiently aware about water conservation despite their education background. Most people did not know how clean water service reached their houses or residence. They did not have any idea about the cost invested on the water supply infrastructure construction and the

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⁶⁰⁷DWSSSO, Folder, 1/16, *Ato* Berhe Gebre-Iyesus, Yä Dessie Kätäma Wuha Agälegelote Yä 1974 Amäte Meheräte Riporete

⁶⁰⁸DWSSSO, Folder, 1/16, *Ato* Berhe Gebre-Iyesus Yä Dessie Kätäma Wuha Agälegelote Yä 1975 Amäte Meheräte Riporete.

⁶⁰⁹Clapham, 'Revolutionary Socialist', p. 160.

water transportation, storage and treatment processes. This problem partly emanated from the top-down water construction approach that the government pursued. Obviously, top-down approach does not give room for public participation and exposure to new developmental ideas. Those who had a tap in their home did not understand the suffering of those who did not have access to it. Efforts in educating the society on ethical water use were either absent or too minimal.

Conclusion

Tangible progresses were seen in institutionalizing and systematizing the overall activities and expanding the spatial coverage of the water supply infrastructure in Amhara Region during the military period. The distance travelled in the field of accessing drinking water could even be longer if it is seen from the difficult political and socioeconomic situation of the time. Political instability, financial shortage, social dislocation, and physical catastrophes had greatly impinged upon the water supply infrastructure work directly or indirectly. Management related failures also had contributed their share. The rural water supply work also suffered from visible urban biases.

The urban water supply was unable to generate income and assist itself. And the burden of financing all the water construction, expansion and maintenance works was placed on the shoulders of the government. Being unable to do that the government sought the assistance of lenders and donor agencies. The fact that aid and loans were unreliable source of funds, financial shortages had impeded water supply infrastructure development. Equally important was the shortage of skilled human resource. Existing higher educational institutions did not significantly assist the water supply infrastructure development in providing skilled human

resource. Yet, urban biases created formidable barriers more than financial shortages on rural water supply development. As it is clearly indicated before, getting aid and loans from donor states and agencies for expanding rural water facility was not so difficult. The critical setbacks for the slow progress of the rural water supply were thus the blatant urban bias, lack of skilled human resource and infrastructural barriers.

The water supply work in urban areas was largely dominated by accessing water through point sources namely distribution points. The authority had lagged behind in expanding a house to house connection system. This restrained the expansion of bath rooms and flushing toilets to individual houses, government and non-government institutions. The absence of such facilities at a household level affected personal hygiene and environmental health which, in turn, had an impact on the region's socio-economic growth. The government's ability of collecting service charges was greatly affected due to the limited expansion of house to house connections.

In sum, the water supply infrastructure development in Amhara region in the study period began to go beyond quenching thirst as consuming water for factories, hygiene, etc. started. At the same time it was geared towards solving the problem of travelling long distances to harvest drinking water by far than mere provision of pure and adequate drinking water.

Chapter Five

Water Supply Infrastructure Development, 1991-2005

Introduction

The legacies of the military government, both internal and external challenges confronting the early rule of the EPRDF administration deserve mentioning in order to understand existing challenges and opportunities of development in the period between 1991 and 2005. It is vital to survey first the after effects of the civil war between the military government and the insurgent groups. The prolonged civil war had resulted in considerable devastation. Apart from loss of human lives and displacement of a great number of people, the economic crisis owing to the material and infrastructure destruction was enormous. Battles were fought in and around many rural and urban areas in the study area. These wars forced people to abandon their localities as the country became increasingly politically insecure, socially disrupted and economically impoverished. The government of the Ethiopian Peoples' Revolutionary Democratic Front (EPRDF) confronted with a huge task of improving the disrupted socio-political and economic situation. Despite its military success over the military government, the Ethiopian People Revolutionary Democratic Front (EPRDF) in the first few years of its rule had a hard time of restoring and/or maintaining political stability. Banditry and ethnic conflicts were widespread. For instance, the Somalis, the Oromo and the Afar ethnic groups fought against each other and against the EPRDF government as well. 610 Moreover, the EPRDF government was challenged by other groups who sought to obtain self-government or maintaining a strong national unity. Among the major contenders of the early EPRDF rule were the Oromo Liberation Front (OLF)

⁶¹⁰Alex De Waal, Ethiopia: Transitional to What? World policy journal, 9, 4 (fall-winter, 1992), p. 722.

and the 'centralists'. According to Alex De Waal, the Tigray People Liberation Front (TPLF) and the Oromo Liberation Front (OLF) collaborated to overthrow the military government. Until 1986, the TPLF was openly assisting the latter. But, as their differences widened, TPLF organized a rival political party to OLF in 1989, which became known as the Oromo People's Democratic Organisation (OPDO). 611 The two organizations could not solve their difference peacefully and conflicts followed soon after the demise of the military regime and the establishment of the Transitional Government. Throughout the period under discussion, the OLF from its base in the south east had been fighting against the EPRDF to maintain its control over the areas it had occupied before EPRDF entered Addis Ababa and assumed a shared state power. 612 Though EPRDF took the upper hand, OLF's guerilla attack continued unabated and it endangered the peace of the country for long. In contrast to the Oromo Liberation Front, the 'centralists', believing that the new policies of the EPRDF government and the post-1991 administrative divisions based on ethno-linguistic lines endangered the country's national unity, had also posed serious challenge. In fact, the 'centralists' lacked a military wing to wage armed struggle. Yet, they persistently objected to the government's policy of ethnic-based administration, 613 the Eritrean secession and article 39 of the new constitution which guaranteed the right of self-determination up to secession of nations and nationalities that made up the new Ethiopian federal system.⁶¹⁴

The other challenging internal issues to the EPRDF government during its early period were the task of rehabilitating the war torn country and the demobilization of hundreds of thousands of

⁶¹¹Ibid., p. 725.

⁶¹²Ibid., p. 722.

⁶¹³The 'centralists' represents the intellectuals and civil bureaucrats. See, John Young, Regionalism and Democracy in Ethiopia, *Third World Quarterly*, 19, 2 (June, 1998), p. 194.

⁶¹⁴Alex De Waal, p.729; Theodore M Vestal, *Ethiopia: A Post-Cold War African State* (London, Greenwood Publishing Group, 1999), p.50; Terrence Lyons, 'Closing the Transition: The May 1995 Election of Ethiopia', *The Journal of Modern African Studies*, 34, 1, (March, 1996), p. 125.

soldiers serving under the previous government. The release of the ex-soldiers particularly seems to have aggravated security problems. Preoccupied by such pressing issues, the EPRDF could not shift its attention to economic endeavors. There were no new economic policies and development programs introduced during the transition period (1991-1995) and even for some years after the end of the transitional stage. Instead the government was preoccupied with and took issues of regionalization, election, ethnic self-administration and repeated but unsuccessful negotiations with the Oromo Liberation Front (OLF) as its priority agendas and remained busy in realizing them at the expense of economic undertakings.⁶¹⁵

The external challenge came from the neighboring government of Eritrea. It was before conditions were fully improved in Ethiopia that the EPRDF government entered to an all-out war with its former allay the Eritrean People Liberation Front (EPLF) in 1998-1999, which became the de facto Eritrean government in 1993. This incident forced the EPRDF government to mobilize huge human and economic resources to the war front. And this diversion of attention to military enterprises had a bearing on development endeavors. J. Abbink, forecasting possible impacts of the war before it was concluded, said:

>apart from tragic loss of life (a) severe economic damage, less foreign investment and general subversion of promising socio-economic development efforts initiated in both countries, (b) weakening of their position in the region (e.g., Sudan, Egypt and the Somalis), and (c) more internal dissent, instability, and probably increased state repression in both countries. 616

⁶¹⁵Ibid., pp. 732, 734.

⁶¹⁶J Abbink, 'Briefing: The Eritrean-Ethiopian Border Dispute', *African Affairs*, 97, 389 (October, 1998), p. 565.

Despite differences in extent and scope, all the above anticipated impacts left a scar on the political, social and economic programs of both governments. It is also interesting to mention the positive impact of the Ethio-Eritrea war in relaxing the existing friction between the EPRDF government and the opponent groups particularly the 'centralists'. Beginning from the time when EPRDF held state power, the 'centralists' opposed the government on account of assisting and recognizing the separation of Eritrea from Ethiopia. Once separation became certain, the 'centralists' demanded a legally recognized boundary (in terms of politico-economic relations) between the two countries. But this question did not get the attention of the government. As to J Abbink, when the war with Eritrea broke out the EPRDF government gave its ear to the centralists'. Now rapprochement grew between them because the government would not want to lose the support of the Ethiopian masses and the 'centralists' took this opportunity to reconfigure Eritrean relation with Ethiopia.⁶¹⁷

These internal and external predicaments urged the EPRDF's government to focus on politico-military issues. In other words, this unfavorable condition prevented the government from diverting its attention to development endeavors. However, the popular awareness being created on the value of having access to safe and adequate drinking water and the nascent but encouraging water supply infrastructure network (though many of them were destroyed by the war), water conservation endeavor as well as the human resource and institutional setup that were seen in the region during the lifetimes of the imperial and the military periods were there to maintain, expand or launch new water related programs and projects.

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⁶¹⁷Ibid., p. 562.

Institutions, Policies and Strategies

With the accession to power of the EPRDF government, the organizational structure of the water institution in Ethiopia was reshuffled once again. Such restructuring was in line with the notion of expanding access to public services by applying a policy of decentralization. The highest water resource development institutions organized previously were the National Water Resource Commission, the Water Resource Development Authority and the Ministry of Mines, Energy and Water Resource. The latter two were serving for a while. The water institution was upgraded to an independent ministry called the Ministry of Water Resource in 1994. While the Ministry of Water Resource replaced the National Water Resource Commission, the Water Supply and Sanitation Authority became a Department of Water Supply and Sanitation within the ministry. Beyond the Ministry of Water Resource and the Department of Water Supply and Sanitation, bureaus and desks have been established in an attempt to devolve autonomy to Regions, Zones, and *Woredawoch* (districts). In the regions, the water bureaus have been established, replacing the previous Water Supply and Sewerage Authority.

In the field of decentralization of institutions, the EPRDF government journeyed a far greater distance as compared to its immediate predecessor. Previously, even *Qäţana Şehefäte Bètoch* (regional offices) had been under the direct supervision of the central organ while in the new arrangement these regional offices were put under the regional water development bureaus.⁶²¹

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⁶¹⁸Dassalegn Rahmato, 'Water Resource', p. 27.

⁶¹⁹Ibid., p. 17.

⁶²⁰Ibid.

⁶²¹NALA, Folder No. 8.1.45, File No. 8.1.45.1, Yä Mäţäţe Wuha na Fesaše Agälegelot Derejete Adese Adäräjajäte, Genbot, 1985.

The Urban Water Supply and Sewerage services and the Rural Water Development and Sanitation Agencies too had been reorganized. Sub-sections were formed under each agency. The two sub-sections formed under the Urban Water Supply and Sewerage Service Agency were \$P\$\mathbb{P}\mathbb{P}\mathbb{N}\mathbb{N}\mathbb{P}\mathbb{N}\mathbb{N}\mathbb{N}\mathbb{P}\mathbb{N}\m

Attempts were made to set up the urban water supply and sewerage services offices in all towns of the region. However, actual realization on the ground was restrained. The water supply service in many towns was run not by water office rather by a committee established for this purpose. In north Gonder zone, for instance, the water supply service of the majority of urban centers had been administered by a water committee by 2005. 623

⁶²²NALA, Folder, 8.1.45, File, 8.1.45.2, Yä Mäţäţe Wuha na Fesaše Agälegelot Derejete Baläselţan.

⁶²³GTWSSSAOA, Folder, 7h38, File, & 37/217, Amhara National Regional State Water Resources Development Bureau: Inventory of Water Supply Schemes and Data Base Management, North Gonder Zone Volume I Main Report August, 2005, pp. 18, 55.

Subsidiary organizations to the Ministry of Water Resource had been also formed. All of them in fact traced their origin to the military period and even before. They were reorganized and made functional at both federal and regional levels with simple modification in their names. The Water Works Design and Supervision Enterprise, the Water Works Construction Enterprise, and Water Wells Drilling Enterprise are the major ones.⁶²⁴

The EPRDF government believed that lack of a national water resource development policy had restrained growth in the water sector. In view of that, it had prepared a new policy document and strategies. The Ethiopian water supply and sanitation policy as stipulated in the National Water Supply and Sanitation Master Plan Framework prepared in 2003 aimed at providing adequate and safe water to the people. The policy was issued by the Ministry of Water Resource in mid-1999. To achieve the targeted goals, the Ministry of Water Resource designed strategies of building sustainable institutional and human capacity as well as surfacing a firm legal base. Adopting cheap and friendly water technologies for the rural area was considered the best strategy. The urban and rural water supply agencies cascaded their respective goals and strategies from those that have been set at the national level. While the urban water supply and sewerage service agency intended to achieve "the development of self-sufficient urban water supply organization, which are able to provide reliable services to their customers", the rural water supply and sanitation agency aspired "to increase the access to safe water by the development of sustainable community-based water schemes and to ensure the availability of

⁶²⁴National Water Development Report for Ethiopia (Addis Ababa, December, 2004), pp. 26-28.

⁶²⁵NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, Volume IV January, 2003, p. 3.

⁶²⁶NALA, Folder, 8.1.45, File, 8.1.45.1, Bä Ityopia Yäšegegere Mänegesete Yätäfäţero Häbete Lematena Yäakababi Ţebäqa Minisetère Yämäţäţe Wuhana Yäfesaše Agälegelot Derejete Adese Adäräjajäte, Addis Ababa, Genbote, 1985.

appropriate support services for these schemes." ⁶²⁷ Some points are clear from the abovementioned goals. Unlike the public system of the military period, which relied on government funding all the time and for every activity, now the intention behind establishing the urban water supply system was to create self-sufficient institution capable of not only refunding its construction cost but also covering its operational and maintenance expenses. This had negative consequences on a section of the population. The following excerpt from the master plan explains the impact on the beneficiary as:

Although the master plan takes the view that water is an economic good and that people will consume as much of it as they are willing to spend money on, the argument works both ways: the rich can afford private water connections in the home; the middle income and low income groups pay for the water that they consume, either from yard connections or public taps. However, the poorest in society have very little or no cash budgets with which to purchase safe water and risk being excluded from the enhanced service provision. They will be forced to spend non-cash resource (*time) and continue to use (free) unprotected water sources. There would thus be an increased in-equality of the water supply in urban areas. 628

The ambition of the rural water supply was not to establish a self-sustained public system rather it aimed at instituting a water supply system being assisted financially and technically either by the government, the community, or non-governmental organizations. Yet, the plan was to make it capable of covering its operational and maintenance costs from the income it created. Unlike the urban water supply system, the rural public water system was not expected to reimburse its investment cost. The reason for this was that the method identified by the national water supply master plan framework to promote the rural water supply infrastructure was Demand Responsive Approach. 629

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⁶²⁷NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, pp. 42, 44.

⁶²⁹Ibid., p. 45.

Urban Water Supply

As mentioned earlier, the current Amhara region has been formed as political administrative unit following the coming to power of EPRDF. It was from the provinces of Shewa, Gonder, Wollo and Gojjam of the imperial and the *Derg* periods that the present Amhara region has been curved out and formed. *The 1994 Population and Housing Census of Ethiopia: Results for the Amhara Region* provides general information about the number, urban character as well as the population size of urban centers in the region. The census reveals the existence of 208 urban centers in the region. ⁶³⁰ It also shows the character of urban centers, sources of drinking water, toilet facilities, types of sources for electricity, availability of roads and telecommunication, radio and television sets, etc. As can be understood from the census, many towns did not meet the criteria of being urban. They even did not fulfill the minimum population size ⁶³¹ upon which most scholars agreed. There were, for instance, only 128 towns in the region with a population size of 2,000 and above. ⁶³²

The status of the water supply infrastructure during the immediate post-1991 period is worth mentioning. As pointed out above, several urban centers in Amhara region did not have an urban character. This includes some of those towns having a population size of 2,000 and above. Of the prominent urban characteristics lacking in these towns was access to safe drinking water. It should be noted that several towns had access to safe drinking water before; but they were wrecked by the civil war. Towards the end of the military rule, all urban centers of north Wollo,

⁶³⁰Central Statistical Authority, the 1994 Population and Housing Census of Ethiopia: Result for the Amhara Region, Volume I, part I, Addis Ababa, December, 1995), p. 1.

⁶³¹Though there were some initial conceptual difficulties in adopting a uniform definition for urban population, most of the official publication treat settlements of 2,000 or more inhabitants which meet one or more other criteria based on legal status, density and physical proximity of housing units, type of land use, and the like as urban', See Muhammad Rafiq and Assefa Hailemariam, Some Structural Aspects of Urbanization in Ethiopia, Universita Degli Studi di Roma "La Sapienza", *Genus*, 43, 3/4 (Luglio-December 1987), pp. 186-195.

⁶³²Central Statistical Authority, 'The 1994 Population and Housing Census of Ethiopia', pp. 13-15.

the majority of south Gonder, north Gonder, south Wollo and some of the towns in north Shewa had been occupied by the insurgents. ⁶³³ In the course of the war, urban establishments including water supply plants were devastated due to both ground and air attacks, and the instability that accompanied them. The damages, in fact, differed from place to place. There was severe destruction in the strategically important areas where many battles were fought between the government and insurgent forces. Consequently, not only previously built urban establishments were destroyed but also the urban dwellers were forced to migrate either to the nearby government held urban centers or to the rural areas. The majority of public servants and businessmen went to provincial towns. The economic role of most of the towns in the war zone was interrupted and became military camps. It is not, therefore, surprising that in the early postwar period all urban infrastructures including the water supply did not function properly or were not serviceable at all in most urban centers of the Amhara region.

During the early EPRDF period, reconstructing the war ravaged infrastructures was the primary and the most burdensome task facing the government. Existing state of affairs confirm the need for re-establishing urban facilities from the scratch. An archival document has this to say:

የወሪኢሱ ከተማ ዉዛ አገልግሎት ንብሬት የሆነው ቧንቧ ቆጣሪና መገጣጠሚያ እንድሁም ቋሚና አሳቂ ጽ/ መሳሪያ፣ የውዛ ሞተርና የውዛ ማጠራቀሚያ ጋን በጦርነቱ ምክንያት እንደወደመ ግልጽ ነው፡፡ በዚህም ሁኔታ ውዛ አገልግሎቱ ስራውን ሲጀምር ባለመቻሱ ቆሟል፡፡ ስራውን ለመጀመር የሚያሥፊልገው ንብሬት ተጠንቶ እንዲቀርብ ታዞ በተሳኩት አጥኚ ቡድኖች ዝርዝር ሪፖርት እንዳቀረቡም ይታወቃል፡፡⁶³⁴

It is clear that the property of the water supply service agency of Wore-ilu town--pipes, water gauges, and joints, fixed and expendable stationary materials as well as water pumps and water reservoirs---were destroyed during the war. Due to this reason the water supply service had stopped functioning. It is known that an

⁶³³Gebru, p. 241.

⁶³⁴DWSSSO, Folder, 32, *Ato* Hizeqiyas Alemu Bä Mäţäţe Wuhana Fesaše Agälegelot Baläseleţane Lä Sämène Meseraqe Qäţana Şehefäte Bète, Kombolcha, Mäsekäräm, 13, 1984.

investigative team was sent to the area and presented a detailed report on the materials needed to restart the work.

By contrast, there was no development program introduced in Amhara region before 1995. The overall situation in infrastructure reconstruction or construction was not well arranged. The water services of many urban centers were interrupted. The public system of Wore-ilu, Hayq, and Kuta-Ber towns were cases in point.⁶³⁵ So, there was no infrastructure development in general including drinking water supply infrastructure planned and accomplished in the region on a regular basis. It is worth of note that government institutions had been reinstated during the transition period though they did not function properly.⁶³⁶

Archival documents on water projects for the transitional period are too scarce. The only accessible source is the 1994 population and housing census. According to the census, of the total 2, 958,268 households in Amhara region only 639, 341, or 21.6 percent, had a source of drinking water either from a tap or from protected wells and springs. While 272,041 or 9.2 percent had access to piped water, the remaining 367,300, or 12.4 percent obtained water from protected wells and springs. The rest 2, 309,711, or 78.076 percent used unprotected rivers, lakes, and ponds to satisfy their water needs. The census did not provide information about what kinds of water source the 9, 216, or 0.312 percent housing units were using. 637 If we see the statistics excluding the rural housing units, of the 285, 203 urban housing units, only 228,277 or 80.04 percent households obtained safe drinking water. Out of this 199, 655 or 70 percent of households had access to a tap. The rest 28, 622, or 10 percent got water from protected wells and springs. Yet, 55,387, or 19.42 percent urban housing units had no access to safe drinking

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 $^{^{635}}$ DWSSSO, Folder, 12/13, *Ato* Assefa Worqineh Lä Bäjäte na Hisabe Kefele , Dessie Kätäma Wuha Agälegelote, Hamelè 12, 1986.

⁶³⁶Ibid.

⁶³⁷Central Statistical Authority, The 1994 Population and Housing Census of Ethiopia: Result for the Amhara Region, Volume I, part IV, Addis Ababa, December, 1995), p. 74.

water and information is unavailable for the remaining 1, 539, or 0.539 percent housing units.⁶³⁸ It should be noted that the census does not reveal the accomplishments on the water supply infrastructure development of the period under study. Despite the lacuna, the majority of the available water infrastructures were the achievements of the previous regimes.

Later on, the first five year development program was prepared in 1996 covering the period from 1996 to 2000. The document entitled የ5 ዓመት/ 1988-1992/ የልማት የሠላምና የኤምክራሲ መርሀ-ግብር አፈጻጸም ፣ የልጣት ፋይናንስ ግኝትና አጠቃቀም ግምገጣ ሪፖርት (The First Five Years (1996-2000), The Peace, Democracy and Development Program Performance: Financial Source and Consumption Evaluation Report) reveals the absence of such a program in the past and its importance in the process to identify priority areas and facilitate the flow of assistance from development partners. 639 Previously, the development partnership department had failed to give due concern for basic issues like አንድ ፕሮጀክት በአፈባጸም ምን ችግሮች እንደገጠሙት (what problems a project had faced in the process of implementation), በታቀደስት ጊዜና የስራ መርሃ ግብር መስፈት ስለመካሄዱ (whether the completion of a project was based on the schedule), ግዶታዎች ስለመሟላታቸው (whether the preconditions were fulfilled), የሚፈለገውን ውጤት አያስገኘ ስለመሆኑ (whether the purported results were achieved), በታቀደለት በጀት መጠን ስስመከናምት (whether the completion of the project was with the approved budget), እና ከፕሮጀክቱ ተጠቃሚ የሆኑ አካላት በቂ ተሳትፎ ስለማድረጋቸው ዎቅታዊ መረጃ ማግኘት (and getting timely information about the adequacy of beneficiaries' participation in the project). 640 The document emphasized to the need to improve the practice of recording project performance and

⁶⁴⁰Ibid.

⁶³⁸ Ibid.

⁶³⁹NALA, Folder, 8.1.39, File, No. 8.1.39.11, Yä Amara Behèrawi Kelele Yä 5 Amäte (1988-92) Yälemate Yäsälam na Yä Democracy Märha-Gebere Afäşaşäm Yälemate Yäfaynanese Geñete na Aţäqaqäme Gemgäma riporete, Hedare, 1992, Baher Dar.

making it known regularly for loans and aid donor agencies and governments so as to get their trust and attention, and increase the flow of foreign resource. Recording project performance and making it known regularly for loans and aid donor agencies and governments was a great progress of the EPRDF government when compared to the *Derg*. As it is indicated before the reasons behind the difficulty of getting aid and loans for urban water supply infrastructure expansion during the military period were failing to update constantly and convince donors on how the loans were to be repaid and how the water supply service agency was managed. The current proposal, if properly applied, could fill those gaps. Though information is inadequate how many of them were actually engaged in water development schemes, 21 government and non-government organizations were running 53 projects in Amhara region during the five years development programs. Loan and donor agencies contributions was about half of the regional government annual budget. Much of this budget was allotted for multi-sectoral development. Infrastructural works in all sectors required such an approach. Yet, there was an attempt at prioritizing sectors in such a way that education got precedence, to be followed by drinking water development, agriculture and health.⁶⁴¹

Under these circumstances, the water supply infrastructure did not make much progress. The dismal feature of the water supply infrastructure construction at this particular period is clearly understood from the achievements recorded in the first five year (1996-2000) development program. The major accomplishments were: 901 hand-dug wells, 352 spring protection, 31deep boreholes, 6 reservoirs, 35 distribution points, and 44,547m pipeline extensions. The report incorporates both the urban and rural attainments in the five years of the development program. This achievement was too small if it is compared with the military period. Take, for instance, the

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⁶⁴¹ Ibid.

⁶⁴² Ibid.

number of boreholes drilled in 1980 (excluding those in north Shewa) and all urban projects was 53.⁶⁴³ The average number of boreholes drilled per year during the five years development program of the early EPRDF period in both urban and rural areas was 6. This meant that the 1980's achievement recorded in the rural areas alone is almost 9 times greater than the achievements of the early EPRDF period.

A combination of factors affected the expansion of the water supply infrastructure work in many urban centers of the Amhara region. The economic, social, and political setbacks discussed in the introduction of this chapter played a significant role. Government documents support this idea. The higher rural-urban population influx and the subsequent growth of urban population with 2.9-3.1 percent per year were presented as the crucial factors. On the other hand, sources indicate that 'water supply to urban areas is a technical, financial, and human resource issue--not environmental because apart from an unfair system of distribution, there is no shortage of water in Ethiopia including the study area. On the other hand, sources in the content of the

Rural Water Supply

Information is scanty on rural water supply infrastructure development during the transition period and even up to 1996. Such a gap in source materials could partly explain the absence of significant infrastructure construction. The depressing politico-economic situation of the country during the early EPRDF period strengthens this assumption.

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⁶⁴³NALA, Folder, 14.1.31, File, 14.1.31.4, Ethiopian Water Resources Authority, Yä Ityopya Wuha Lemate Balä Seletan Yä 1972 Amätä Meherät Yä Sera Program, Addis Ababa, Mägabit, 1972.

⁶⁴⁴NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, p. 50. ⁶⁴⁵Ibid., p. 43.

Of the available sources, the 1994 population and housing census is consulted for this specific period. According to this census, of the total 2,700,065 rural housing units of Amhara region, 646 the number of housing units with access to safe water was 411, 064, or 15.22%. Of these 72,386 or 2.68% housing units had access to safe drinking water from tap, the remaining 338, 678 or 12.54% got water from a protected wells and springs. The rest 2,281,324, or 84.49% housing units collected water from unsafe sources. Concerning 7,677 or 0.284% housing unit nothing is mentioned in the census.⁶⁴⁷ The problem here is that the document does not talk of the current development. The absence of an inventory on previously accomplished establishments made difficult in identifying the newly constructed ones. The value of interpreting the census data, therefore, does not go beyond showing the status of the spatial expansion of the water supply infrastructure by 1994. A fairly relevant document in this regard is 'P5 9001/ 1988-1992/ የልጣት የሠላምና የዴሞክራሲ መርሀ-ግብር አፈጻጸም ፣ የልጣት ፋይናንስ ግኝትና አጠቃቀም ግምገጣ ሪፖርት '(The Five Years (1996-2000), The Peace, Democracy and Development Program Performance: Financial Source and Consumption Evaluation Report). This document reveals the absence of development program and accomplished infrastructure works including water supply construction before 1995. A programmed rural water supply infrastructure construction started only in 1996 with the inauguration of the first five years (1996-2000) development program. The document made clear that by the end of the five-year development program 32 percent increment would be attained on existing rural water supply infrastructure. Dassalegn mentions that at the end of the five-year development program the EPRDF government pledged to increase the level of the rural water supply to 40 percent. However, the targeted goal he presented differed from the aforementioned ones. As to him, the plan intends to achieve a 23

647Ibid.

⁶⁴⁶Central Statistical Authority, 'The 1994 Population and Housing Census of Ethiopia', p. 74.

percent rural water supply growth by the end of the first development program.⁶⁴⁸ Beyond this, he did not mention the actual degree of implementation. In any case, there is a marked difference between the targeted goals indicated in the two sources. The gap is too wide to settle. Yet, the first figure seems correct for two reasons. Firstly, it talks about the five-year plan and development endeavors of the Amhara region alone. Secondly, the document is nearest to the event it describes in time and space.

A closer investigation on the execution of the five-year development plan reveals existing minimal efforts and achievements in expanding access to safe drinking water. The report presents general information on both the urban and rural water construction endeavors. It deals in detail with the completion of 901 hands dug wells, 352 spring protection, 31deep boreholes, 6 reservoirs, 35 distribution points, and 44,547m pipeline extension works. ⁶⁴⁹ Past experiences show that reservoirs, distribution points and pipeline extensions were commonly built in urban centers while hand-dug wells and spring protection were done in rural areas. Where borehole drilling works were accomplished is difficult to locate. Setting aside the rural-urban dichotomy, the whole achievement in both areas during this time was negligible.

Sources reveal that the water supply infrastructure construction achievements in the rural areas of the Amhara region were much more less than other regions during the early EPRDF period. While only 8.3% of the rural population in the Amhara region had access to safe drinking water in 1997, it was 34%, 14.4% and 12.5% in Tigray, Oromia, and Southern Nations, Nationalities and Peoples regions respectively in that same year. ⁶⁵⁰ Why such a dismal achievement was

⁶⁴⁸Dassalegn, p. 18.

⁶⁴⁹NALA, Folder, 8.1.39, File, 8.1.39.11, Yä Amara Behèrawi Kelele Yä 5 Amäte(1988-92) Yälemate Yäsälamna Yä Democracy Märha-Gebere Afäşaşäm Yälemate Yäfaynanese Geñete na Aţäqaqäme Gemgäma riporete, Hedare, 1992, Baher Dar.

⁶⁵⁰Ibid., p. 14.

recorded in Amhara region? Two major reasons which traced their origins to the late military and the early EPRDF periods can be suggested. As indicated before, most areas of the Amhara region were battle fields during the civil war. Not only existing infrastructures were ravaged but also new construction was stifled by the war. This situation gave rise to the imbalance infrastructure development registered between Amhara region and those which did not have been affected by the civil war that is to say Oromia and Southern Nations, Nationalities and Peoples regions. On the other hand, the infrastructural imbalance between the war-affected areas of Amhara and Tigray regions has been seen during the post-war period. This is because unlike the situation in Tigray⁶⁵¹, sources do not show the extension of the post-war rehabilitation program in Amhara region. Improvements could not be seen in the field in the period from 1997 to 2005 (the closing year of this study). This is for the reason that it was in this period that Ethiopia entered into an all out war with Eritrea. The potential impact of the war on development endeavors has been discussed above.

Furthermore, the National Water Supply and Sanitation Master Plan Framework prepared in 2003 reveals that the water supply infrastructure in the rural areas of Ethiopia had been in a dreadful state. Water supply installations suffered from repeated failure. An inventory of water supply schemes and data base management conducted in north Gonder in 2005 has brought similar information. It shows that out of the 889 water schemes that existed in north Gonder in 2005 only 656 (66.9 percent) were operational. Owing to the breakdown of hand pumps, taping structures, faucets, collection chambers and other structural problems, the remaining 233

⁶⁵¹John Young, 'Development and Change in Post-Revolutionary Tigray', *The Journal of Modern African Studies*, 35, 1 (March, 1997), p. 81.

⁶⁵²NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, pp. 42, 44.

(23.8%) water schemes did not give service.⁶⁵³ This was exacerbated by the absence of operation and maintenance service providers. The operation and maintenance service lacked trained scheme caretakers, spare parts, and skilled operators.

An interesting point to be mentioned here is public participation. The number of participant and the estimated amount of money saved⁶⁵⁴ for the budgeting years 1988-1991 is presented as follows.

Table-3. Public participation on water works, 1996-1999. 655

Budgeting year	1996	1997	1998	1999
Number of participants	30, 388	76912	123413	181833
Estimated amount of money saved in Ethiopian berr	136929	325860	664523	784669

^{*}The table incorporates the data of seven zones.

According to the 1994 population and housing census, there were 2,700,065 housing units in the rural areas of the Amhara region.⁶⁵⁶ This meant that each of the nine zones including the three special zones had an average 300, 007 housing units irrespective of variation in population density. All the 300,007 housing units had to be represented by one participant on a daily public

⁶⁵³GTWSSSAOA, Folder, 7h38, File, & 37/217, Amhara National Regional State Water Resources Development Bureau: Inventory of Water Supply Schemes and Data Base Management, North Gonder Zone Volume I Main Report August, 2005, p. 20.

⁶⁵⁴NALA, Folder, 8.1.39, File, 8.1.39.1, Yä Amara Behèrawi Kelele Yä 5 Amäte(1988-92) Yälemate Yäsälamna Yä Democracy Märha-Gebere Afäşaşäm Yälemate Yäfaynanese Geñete na Aţäqaqäme Gemgäma riporete, Hedare, 1992, Baher Dar.

⁶⁵⁵ NALA, Folder, 8.1.39, File, 8.1.39.1, Yä Amara Behèrawi Kelele Yä 5 Amäte(1988-92) Yälemate Yäsälamna Yä Democracy Märha-Gebere Afäşaşäm Yälemate Yäfaynanese Geñete na Aţäqaqäme Gemgäma riporete, Hedare, 1992. Baher Dar.

⁶⁵⁶Central Statistical Authority, the 1994 Population and Housing Census of Ethiopia: Result for the Amhara Region, Volume I, part IV, Addis Ababa, December, 1995), p. 49.

work in a zone. This number is too much greater than the maximum number of participants on the water work recorded in the region that is 181833 by 1999, let alone the minimum number of participants registered in 1996. It is clear from the above data; therefore, the degree of public participation was minimal all through the development program. The document, in fact, notes that there were no clear and abiding, rules and regulations for managing public participation on water developments.

Socio-economic Impact

The spatial coverage of water supply infrastructure construction accomplished in Amhara region during 1991-2005 was extremely small. During this time no significant achievement was expected from the water supply infrastructure development in Amhara region or in the country at large. Apart from the widespread political, social and economic setbacks, this was largely because of the National Water Supply and Sanitation Master Plan Framework's inappropriate strategy. The master plan gave priority to the creation of public awareness not on actual water infrastructure construction. The following extract substantiates this:

It is often thought that by the provision of safe water through the construction of infrastructure, most water borne and water related diseases can be controlled. In the master plan it is argued that there is more to health improvement than the provision of hardware only, where it mentions that investment in software (i.e. health and hygiene awareness, and education programs) is up to twenty times more cost efficient than the investment in hardware alone.roughly, it can be said that the infection of the human being with water borne and water related diseases takes place through five possible routes....the provision of safe water (high quality) potentially takes away only one out of this five transmission routes. 657

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⁶⁵⁷NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, pp. 7, 51.

This argument was based on the notion that safe water could be polluted in the process of collecting and storing it. And it was a deep-rooted problem in the Amhara region. So the main direction of the government was oriented towards educating the society about the techniques of proper harvesting and storing drinking water which would, in turn, help maintain better health and personal and environmental hygiene. Indeed, the value of public awareness about keeping the safety or purity of water throughout the collection, transportation and storing processes is paramount. However, such knowledge would have little value if it were not accompanied by a provision of adequate and safe water supply. Besides, the problem of awareness was not as such a serious problem of the Amhara society. Apart from the literacy campaign and the expansion of modern education discussed in the previous chapter, the Amhara people were exposed to such awareness due to the civil war. Needless to say, the civil war had caused the displacement of a great number of people from Awrajja (sub-provincial) and Woreda (districts) centers to the provincial capitals. This brought the mixing up of rural and urban people and their life experiences. This paved the way for displaced people to familiarize themselves with the urban life style including the practice of consuming safe water and maintaining personal hygiene. It was with this and additional urban life experiences that displaced people came back to their home areas soon after the end of the civil war. 658 Afterwards, practical changes had been registered in the area of consuming safe water and maintaining personal hygiene in many of the Awrajja (sub-provincial) and Woreda (districts) centers. These ideas had even proliferated deep into the remote rural villages.

Though the first move should have been ensuring the availability of safe water, the EPRDF government had given due emphasis to those issues that would be treated latter. In other words,

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⁶⁵⁸ I was displaced to Dessie due to the civil war. Whenever I get my friends or individuals who were displaced with a similar case, we talk about the matter and appreciate the lessons we have learnt from the event.

in the absence of safe and adequate water, arguments to the effect that people had been informed on how to maintain the safety of water did not stop them from using unprotected water sources.

The lessening in degree of safe water provision had a negative impact on the socio-economic development of the region. Thus, the objectives of improving the health status of the society, minimizing the distance travelled to collect water and saving time for economic activity, reducing the work burden of those shouldering the arduous task of collecting water could only be met with the expansion of modern water supply infrastructure.

Environmental Impact

As discussed in the previous chapter, laws and regulations began to be prepared in the mid-1980s⁶⁵⁹ to govern the water construction and utilization. But, there is no information about their completion or implementation before the end of the military rule. Sources are also lacking on the existence of similar laws and regulations in the early EPRDF period. However, the EPRDF period witnessed the establishment of an institution responsible for environmental protection. The short-lived Ministry of Natural Resource Development and Environmental Protection (MONRDEP) was founded in 1993. It was dissolved in 1995 and instead the Ethiopian Environmental Protection Authority was established. 660

On the potential sources of water to be exploited like rivers, springs, and shallow and deep ground waters, the National Water Supply and Sanitation Master Plan Framework confirmed the absence of environmental damage arising from water supply infrastructure development nationally. It ascertains that the expected impact could be felt at local level and be easily dealt

⁶⁶⁰Yacob, p. 132.

⁶⁵⁹NALA, Folder, 17.1.12.03, File, 17.1.12.03.01, *Ato* Alem Alazar Bähebräsäbawite Ityopia Giziyawi Wotadärawi Mänegeste Lä Agäre Asetädadäre, Mäsekäräm, 14, 1977.

with a simple preventative measure. In the main, the National Water Supply and Sanitation Master Plan Framework emphasized the environmental influence over the water supply infrastructure development than its impact. Basic environmental issues mentioned in the master plan include the influence of population growth, net improvement of health from water supply and sanitation infrastructure development, water quantity and quality of rivers flowing to the lowlands, and the impact of water supply on livestock in lowland regions. ⁶⁶¹

Existing environmental degradation is indicative of the low level of the water supply infrastructure construction being accomplished in the period under discussion. Yet, there must be well structured rules and regulations that should govern the entire water infrastructure construction and keep the well being of the natural environment. This is because the environment could be affected not only because of maximum utilization but also through reckless exploitation.

Water Consumption and Conservation Pattern

The trend shows the steady growth of water consumption pattern in Amhara Region. Apart from the works of the imperial and *Derg* regimes, displaced people during the civil war returned home having familiarized with the value of consuming safe water for a variety of purposes. This included the increase in consumption of water for drinking, preparing food, personal hygiene and sanitation, and for processing goods in factories and watering gardens and taking care of domestic animals. In urban areas particularly sanitation infrastructures expanded. The region started to see some industrial establishments since the Military period. All these required large

⁶⁶¹ NALA, Folder, 13.1.15, File, 13.1.15.1, The Federal Democratic Republic of Ethiopia Ministry of Water Resources: National Water Supply and Sanitation Master Plan Framework, October, 2002, pp. 48-49.

volume of water. This leads to the conclusion that a lack of awareness on the value of consuming safe water was no longer a problem even among the societies far from urban areas.

And yet, the practice of proper water conservation still had to go a long way. The problem was no better among the educated people. Until very recently, water has been wasted recklessly in large amounts in the compounds of educational institutions, including higher education institutions. 662

Conclusion

The Water Supply and Sewerage Service Authority of the transitional government identified key elements which were believed to have hindered the growth of the water sector. It included the absence of a national water policy, relevant institutions, low level technological development and dependency, and the need for awareness creation on water utilization and conservation. 663 True, the EPRDF's rule in the period under discussion did not create conducive environment for infrastructure construction in Ethiopia in general and in Amhara region in particular. To start with, the country could not recover from the aftermath of the civil war quickly. And the economic, social and political circumstances of the immediate post-Derg period were not favorable for development endeavors including water supply infrastructure construction. Existing conditions became even worse when the war with Eritrea broke out. The war not only absorbed the financial capacity of the government but also created new domestic political tensions. So there was no well thought out, consistent, and planned water supply infrastructure development in Amhara region in the period between 1991 and 2005.

⁶⁶² I attended my first degree during the early EPRDF period. And I had observed that students' water conservation practice was too poor throughout my student life.

663 NALA, Folder, 8.1.45, File, 8.1.45.1, Yä Mäţäţe Wuha na Fesaše Agälegelot Derejete Adese Adäräjajäte, Genbot,

^{1985.}

Chapter Six

Conclusion

The preceding chapters in this study assessed the historical introduction and expansion of safe drinking water supply infrastructure development and the accompanying socio-economic progress recorded in Amhara region during the Imperial, the *Derg* and the early years of the EPRDF regimes.

The study attested that water supply infrastructure construction in the present day Amhara region dates back to the early 1910s. The first piped water supply was installed in the town of Dessie in 1912. However, for almost three decades no similar development was observed in other urban centers. This trend was changed with the Italian invasion of Ethiopia. Available sources confirm that during the five years occupation of Ethiopia, the Italian administration had introduced modern water supply system in some urban centers of the region, such as Gonder and Kombolcha. Yet, the Italian achievement was limited in its spatial coverage. Then after the end of the Italian rule in 1941, no significant progress was registered in the field for the next fifteen years. The unstable political circumstances and the war torn economy of the post-1941 period did not allow the restored Imperial regime to set up an institutional system that would enable it to engage in infrastructural works. Until the mid 1950s, construction of new drinking water supply infrastructures was not started. In addition, the previous water supply infrastructures were not administered in an institutionalized manner. Though some water plants were constructed, the government did not prepare a policy document or strategy to promote access to safe drinking water.

Equally important was an exclusive dimension of the water supply work accomplished before the mid-1950s. Like the Italian period where water supply infrastructure constructions were mainly geared towards satisfying the needs of colonial officials and military barracks, the water supply works during the early post-liberation Ethiopia were urban oriented and confined mostly in the royal residences. The water supply infrastructure development works did not try to address the water problem of the ordinary masses of urban dwellers. Besides, it was almost entirely absent in the rural areas. The majority of the water supply construction works accomplished before the mid-1950s were carried out by the initiative of individuals such as provincial and local governors or other notable individuals. For example, *Ras* Abate was the one who connected the court of Negus Mikael in Dessie with a piped water system in 1912.⁶⁶⁴

In the second half of the 1950s, relatively well thought out and all-embracing water supply infrastructure development had started in Ethiopia. In 1956, the Department of Water Resource was set up to look after the water supply infrastructure development within the Ministry of Works and Communication. And within it, two sub-departments (Community Water Supply and Yä Wuha Kefel (water unit)) were formed with the responsibility of running the rural and urban water supply infrastructure development respectively. While the Community Water Supply was put under the Department of Water Resource, the Yä Wuha Kefel (water unit) was made to be part of the municipality. The establishment of these offices during the imperial regime heralded the beginning of a planned drinking water supply infrastructure work. However, institutionalizing water related activities were vigorously pursued and consolidated during the Derg period. In an attempt to make water accessible to the people, the military regime had

⁶⁶⁴Tekeste Melake, "The Early History of Dessie" (Senior Essay, Department of History, Addis Ababa University, 1984), p. 13.

opened offices responsible for planning, constructing and maintaining water supply infrastructures in different parts of the country. After the downfall of the military government, the EPRDF administration, adopting a policy of decentralization, and established offices entrusted with water related activities at regional, zonal (sub-province) and *woreda* (district) levels. In general, since the setting up of the first government institutions in the 1950s, organized urban and rural water supply development activities began in Ethiopia.

This study made clear that the water supply infrastructure development accomplished in Amhara Region in the period under investigation was inadequate both in quantity and geographical coverage. In terms of number, the water infrastructure built in both urban and rural areas across the study period remained insufficient. In most cases, the water supply work was initiated to solve immediate problems. Regarding spatial coverage, water supply infrastructure development during the imperial rule, was not only limited in territorial extent but also entirely urban focused. An accreditation that could be given for the regime was its initiation of water infrastructure work. It was during the military period that an expanded and inclusive (from the sense of incorporating both urban and rural areas) water supply infrastructure development began to be accomplished. Despite some inconsistencies, the overall construction activity was relatively well organized. Besides, the water supply work had been carried out throughout the region. The EPRDF period was, however, not better than the imperial time in many regards. This can be seen from the achievement of the first five years development program (1996-2000) discussed in chapter five. Generally, despite the geo-political centrality of the Amhara region and its untapped water resource, the cumulative work in the field of the water supply sector show depressing picture.

This study has raised and discussed several predicaments which are believed to have stifled, albeit with a varied extent, the water supply infrastructure development all through the three regimes. These problems can roughly be categorized into political, economic, and socio-cultural in nature. The political instability in Amhara region in particular impeded the water supply infrastructure development. Yet, the overall achievements recorded in the water development sector across the three regimes show contradiction with the condition to development. It should be noted that the military government had been more affected by the absence of peace and security than the two regimes that preceded and succeeded it. In spite of this, the military government excelled the two regimes by far in providing access to drinking water supply infrastructure to many urban centers and rural villages.

The nature of applied policies, strategies and approaches of the three governments has a strong bearing on water supply infrastructure development. In fact, there was no observable variation among the three governments with regard to carving out a policy of providing access to safe and adequate drinking water to both the urban and the rural masses. But, there were differences in their approaches and strategies. The imperial government with its top-down approach was a major player in the planning, site selection, drilling, installation, and maintenance activities. In terms of exploiting water sources, it preferred extracting ground water to that of surface water. Nothing was done in the area of developing surface water for public system in Amhara region. Of the varied methods of hauling out ground water, it favored and relied on drilling deep borehole using hydraulic technology. The adoption of hydraulic technology is believed to have been a reflection of the American influence which dominated the Ethiopian affairs since 1952 replacing the British. Obviously, motor driven borehole construction is too costly and a strategy inappropriate for a country lacking a strong economic bases like Ethiopia. Failing to adopt other

cost-effective water schemes, the government was not in a position to provide safe and adequate drinking water to both the urban and rural public. Broadly speaking, the imperial government did not exploit all the available and potentially yielding water sources and alternative construction approaches. It can be discerned from this that the imperial government's total dependence on motor driven borehole work and its total disregard to cost-effective alternatives had greatly hampered the expansion of the water supply infrastructure.

The military government had tried to facilitate the water supply work through a strategy of decentralizing water institutions. Yet, the top-down approach employed by the imperial government had more or less continued intact. Decentralization was partial as there was no firm commitment to empower lower level water institutions. There was no room for the ordinary people to have a say on matters related to the water supply work. As the government was the sole benefactor, people had to wait to secure its consent and engage in any developmental activity.

In theory, the military government targeted exploiting both ground and surface water. This was planned to be accomplished through the construction of deep boreholes, hand-dug wells, dams, small ponds and the protection and development of springs. Except the public system in Gonder, all modern water systems, in both the rural and urban centers of the region, used ground water as sources. In urban areas, the military government engaged in constructing motor driven boreholes as a lasting solution, and hand-dug wells and spring protection as short-term solution. In rural areas the government tried to make use of drilling deep boreholes, spring protection and hand-dug wells. Nevertheless, more attention was given to building hand-dug wells and developing/protecting springs. The construction cost of these sources is less expensive and they are preferable to solve immediate problems. However, they lack modern elements and do not bring lasting solutions to the water supply infrastructure problems. The preference for the less

expensive and temporary methods was not a success, if not total failure. As sources confirm the military government could have used the foreign aid and loans that it secured in the name of solving rural water shortages for constructing motor driven boreholes that would give long time service as well as better quality and quantity yield. In terms of strategy and approach, the early period of the EPRDF government brought nothing new than the military period.

One of the common failures of the three regimes was their disregard for rain water collection.

All of them had entirely neglected to take advantage of such an approach. Traditionally, many people in Ethiopia used rain water as an alternative means of satisfying their domestic needs.

The political confusion coupled with global market failures and natural calamities had certainly aggravated existing economic problems. All the three governments were exposed to huge military expenditure. Consequently, they were unable to attain significant economic development. So the water supply infrastructure construction programs in all the three regimes have been suffered from serious financial constraints. As they also relied heavily on foreign loans and aids for initiating water supply infrastructure development, it was not unusual for water projects to be either delayed/suspended or repeatedly interrupted.

The low level of education among the Ethiopian public had also affected water supply infrastructure development in a significant way. During the imperial period, the majority of Ethiopians were illiterate. They lacked basic scientific knowledge about community health and sanitation. Shortage of skilled human resource in conducting relevant studies and/or managing projects was the other stumbling block. Relatively speaking, the problem of illiteracy had shown improvement during the *Derg* period. The literacy campaign enabled the Ethiopian masses to acquire basic knowhow concerning health, personal and environmental sanitation. The expansion

of modern education especially assisted the water supply work by providing literate human resource to a certain extent. Yet, the shortage of skilled human resource had been a serious problem of the water supply sector. Therefore, the absence of a preliminary study and management problems, that epitomized the water supply infrastructure development throughout the three regimes, had roots in the lack of skilled human resource.

The dispersed settlement pattern of the rural society remained a formidable challenge in accessing drinking water supply in the rural area. The military government attempted to bring together dispersed settlements using both villagization and resettlement programs to expand access to water supply and other infrastructures. Both programs failed because the government embarked on such programs without adequate financial and technical preparations. A great number of the villagized and resettled families, clustered together, had even suffered from shortage of safe water. Particularly, in the resettlement areas, the water shortage was severe and no significant achievement was recorded. Had it been planned and organized activity, villagization and resettlement programs would have pushed the water supply program a step forward.

In the past, the Amhara people espoused a culturally held view about the value of safe drinking water extracted from uncontaminated sources. The proverb 'ነገርን ክስሩ ውህን ከጥሩ '665</sup> (Lit: 'it is best to grasp ideas and water from their source') is a good example. On the other hand, the sayings 'There is no water that is not sacred'666 and 'የውህና የአናት ቆሻሻ የሰውም'667 (Lit: "Water and mothers are always untainted") encouraged people to use any water indiscriminately. They also had a depressing effect on water infrastructure development. Originating from lack of

⁶⁶⁵ It is a common popular saying among the Amhara people.

⁶⁶⁶Mesfin Wolde – Mariam, "Problems of Urbanization.", p. 27.

⁶⁶⁷It is spoken by the Amharas people hitherto.

knowledge and dearth of safe drinking water, such attitudes seemed to have permeated the Amhara people's thinking about water. Though there was a traditional way of protecting sources of drinking water safe, the health problems arising from the culture of using any water appears to have been changed along with the expansion of modern water supply and the increased public awareness.

The water supply works accomplished during the three regimes had certainly influenced the socio-economic development of Amhara region. In those localities where access to safe drinking water was improved, the distance travelled and the times spent for fetching drinking water were reduced. People also succeeded in saving time which was previously wasted due to illness arise from or spent for traveling long distance to get treatment for most water-washed and waterborne diseases. The amount of money saved from unplanned medical expense can by no means be underestimated. It also reduced the work burden of women and girls who were solely responsible for fetching drinking water by traveling long distances day in, day out. The health status of those people who were provided with safe drinking water was also improved. This meant getting a healthy labor power for economic activity. But, there were differences in the degree of access to drinking water supply infrastructure. The water supply provision in much of the localities of the study area qualifies only basic and intermediate accesses to safe drinking water. It fails to meet the requirements of an optimal access due to low water quantity and quality, poor service delivery, unreasonable price, and the like apart from physical inaccessibility. All in all, the water supply infrastructure development and the consequent safe water provision have played an encouraging role in bringing socio-economic change. If it had been well expanded throughout the region and maintained the required standard in terms of water quantity and quality, service reliability, affordability, remarkable changes would have been registered. It is, therefore, possible to argue that the dismal feature of drinking water supply infrastructure development and the service unreliability had arrested the region's potential socioeconomic development anticipated on account of getting safe water.

The attitudinal changes registered following the water supply infrastructure development deserve mention. Understanding the value of having safe and adequate drinking water for improving the status of health, the society has developed the habit of collecting it from protected sources. Environmental and personal hygiene, which had been practiced occasionally in the past, now became a strong principle. The impact was felt even by people living far away from the reach of the modern water plants. Some left their home environs and went to the urban centers searching for better life including the benefits of having safe drinking water. Under inaccessible circumstance, they were appreciating the value of having access to safe drinking water. Piped water as innovation has been eulogized with a verse in a popular song: 'happa of the past of the town of Dessie, when piped water flows to the kitchen.")

The study argues that the water supply infrastructure work of the three successive regimes in the Amhara region did not significantly endanger the environment. It was not because construction works were guided by rules and regulations; rather, it was because the water supply infrastructure had not been so expanded to affect the wellbeing of the environment. Similarly, the environment did not impede the water supply work at all. There is no shortage of fresh water reported in Amhara region. True the region is located in the drainage system of Ethiopia commonly referred to as 'the water tower of Africa.' The problems in relation to the water supply work should be seen in relation to the prevailing socio-economic and political circumstances. The water governance system particularly had more weight.

Except the Imperial period where the water supply work was governed more or less by a system modeled on a municipal hydraulic technology, there was no well carved water governance method that was put in place in Ethiopia or the Amhara region during the Military and EPRDF regimes. Similarly, there was no indigenous system of governance nurtured and utilized by both regimes. Establishing a community-run or local based governance system, though beneficial, had been difficult for the two governments because making it available at village level required bureaucratization, which is costly. This local based governance system is heterogeneous and unruly in nature. It could bring disagreement at regional or national level. Besides, the *Derg* and EPRDF regimes were unable to avoid the global influence and nurture a purely indigenous governance system. This was because the cold war power politics and the political ideology they espoused, and the coming into the scene of globalization influenced the aforesaid governments. In actual fact, the two governments had juxtaposed modeling the municipal hydraulic technology and community-run local system. That is why both failed to adopt either a centralized or decentralized approach. They pretended that they were using both approaches alternatively. Such a dualistic, wavering approach had considerably affected the temporal and spatial expansion of the water supply work in the Amhara region in the period under investigation.

The water supply infrastructure development accomplished so far had actually brought a change in consumption habit of the region's population. Contrary to the growing consumption level, the conservation experience of the society still remained low mainly due to lack of awareness that water is an exhausting natural resource. The imprudent use of water and the problem that it entails had not been given greater attention as much as the effort of expanding physical plants.

In sum, the water supply infrastructure works in Amhara region in the study period were inadequate. Intractable political and economic crises, lack of appropriate management, clear

policy directions and skilled human resource, dispersed settlement patterns and flawed perception on water quality and the difficulty of getting safe water affected the sector\s development all through the imperial, military and the EPRDF reigns. Despite this, a promising base has been laid down in the field, particularly during the period of the military government. Accordingly, the society had begun utilizing water for variety of purposes, well beyond quenching thirst.

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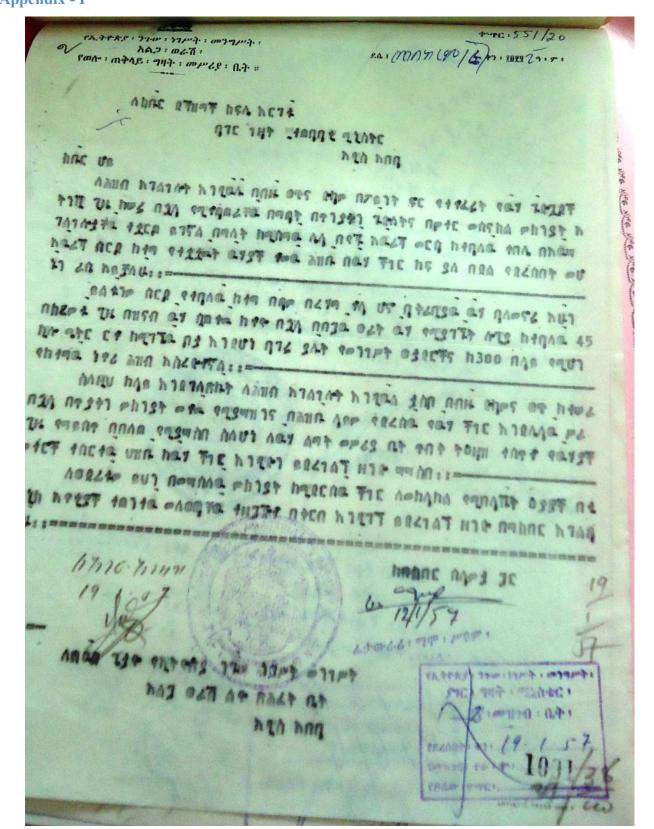
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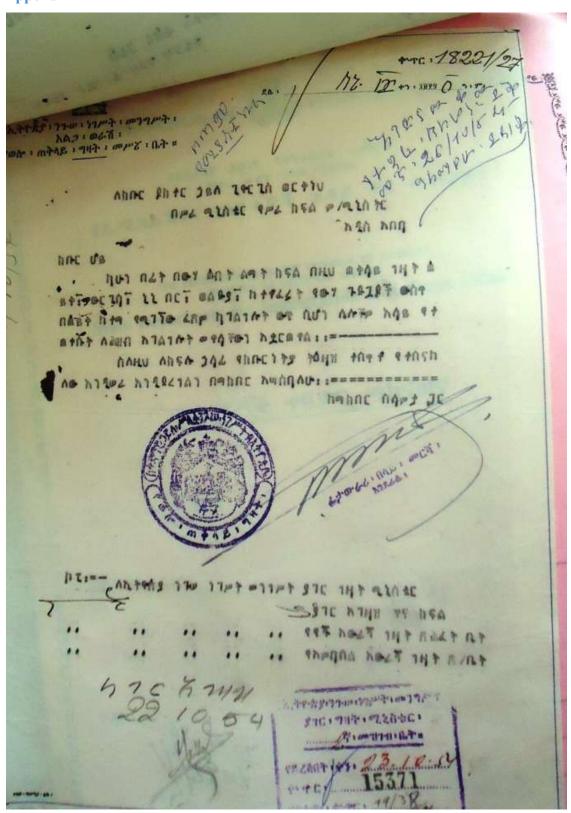
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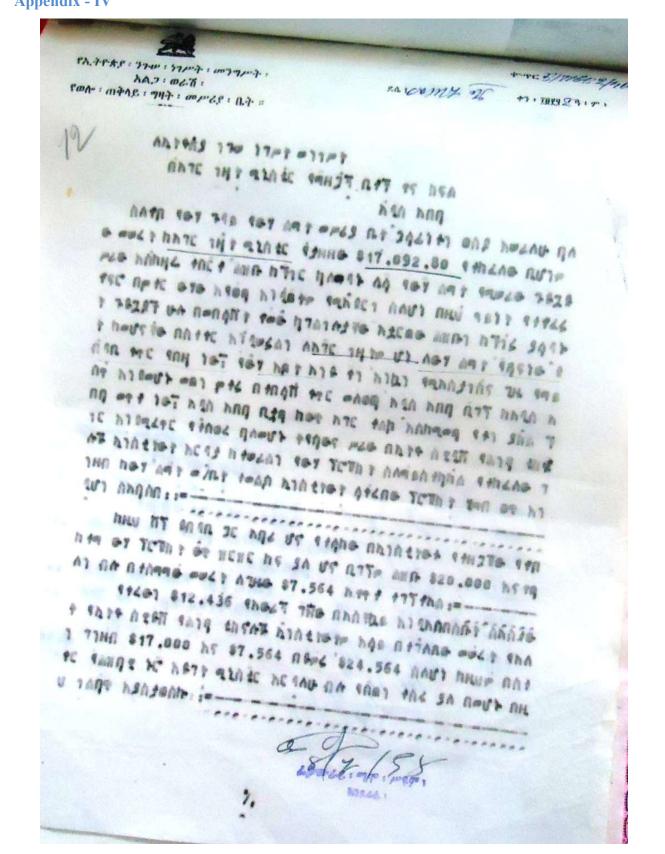
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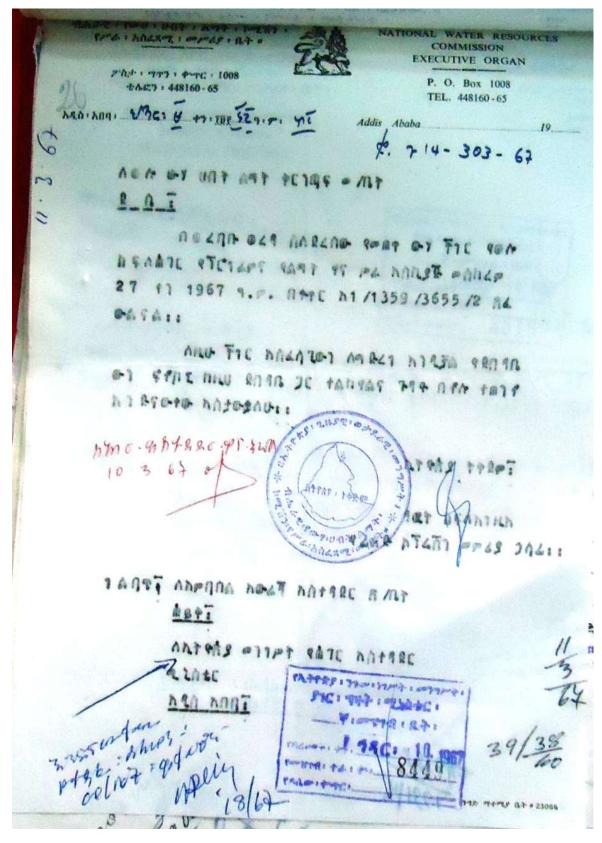
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Appendix - III







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ለከቡር ደሻዝጣች ከፍሊ ክርገቱ የአገር ነዛት ተጠባበቲ ሚኒስትር

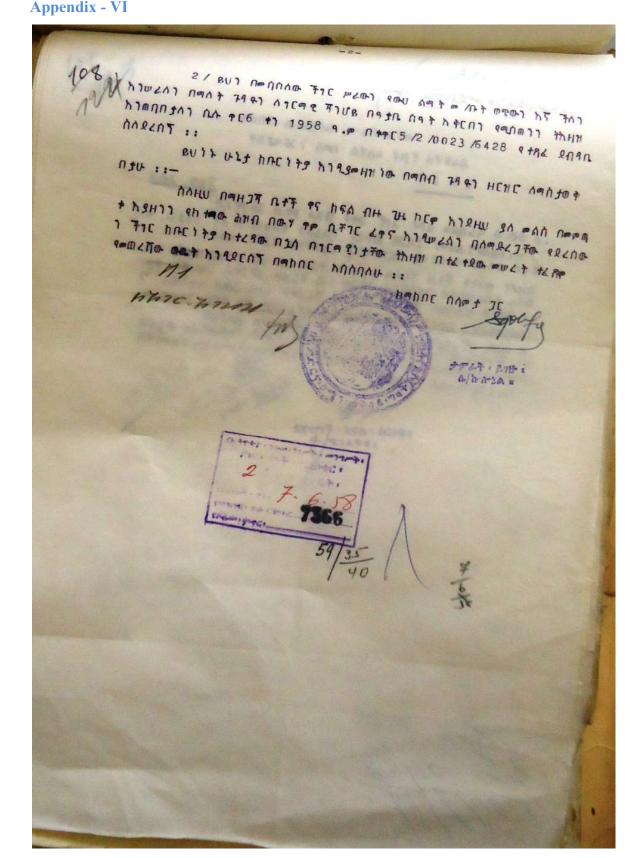
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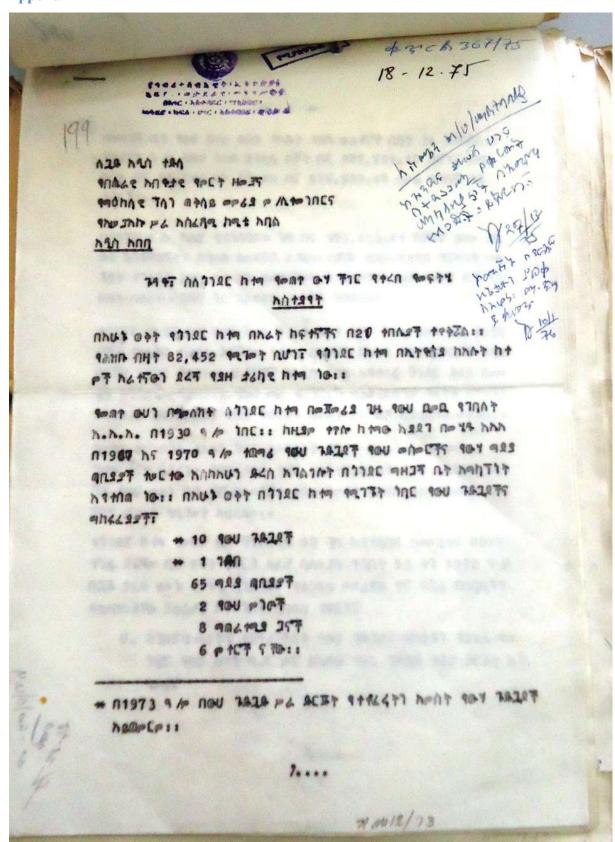
የንገደር ከተማ ሕዝብ በውሃ አወት ስላደረሰበት ችገር ለዚሁ ሥራ አግልገሎት አገዲውል ስላ ተፈ ቀደው \$198.000.00 / አገዱ መተ ዘመና ስምገት ሸሀ ብር ለከቡር ፈታሙራሪ አሱሳ በተላ በአገር ገዛት ሚኒስቴር የመዘጋሻ ቤቶች ም / ሚኒስትር መስኮረም 8 ተገ 1958 ዓ.ም በተተር278/57 ሲኖሩ - ሳቸው የደረሰፕን ገልበዊ አስታሙበላሁ::

ስለዚህ ውጭ የበጋ ወደት በወሆኑ በከተው ሕዝብ በውስ አመት መከገያት ከገባይቸገር ከዚህ በፊት ስለውጋው የሚገኘበትን በታ ቀና ቱን የወሰዱት ሰ*ያ*ች ተልከው ሥራው በተሩጠነ ጊዜ ውስተ አገዲያውር አገዲያዩር ጉልፕ ውስክረም 15 ተገ 1958 ዓ.ም 1 47 C 34 1 7 . 4462 RL 7 A TO 10 C 7 17C 17 has 6 told had 11 to ለውኃ ጉራጋይ ማስተፈሪያ ስለ ተጠ የተው የብዱር ገንዘብ ማዘጋሻ ቤቱ በስንት ዓመት ውስጥ ከፍሎ ከገደሚጠርስና የአከፈፈሉንም ዝርዝር ሁኔታ በመማስርተች አስመስር ምክር ቤቱ በ ሰሣቡ ከተስማማ በኋላ የስምምነቱ ፕሮሲቪር በል ከነ ቲባው አ የናው መ /ቤት ይረስ ይዘው ከገዲተርቡ ቢሉ መስከረም 22 ተገ 1958 ዓ.ም በተጥር5 /2 /0023 /489 ቢብሬልፕ ንልባው ለንንደር ማዘጋሻ ቤት በደረሰቸው መረት ይህነት ሰሣብ ለማዘጋሻ ቤቱ መማስር #7 +EN h +89 NIA 7 10 + 2 +7 1958 9.00 phc n+ 90007 041 N 及C7年 为月月1年 見72 月71日 日村 日7 日 中神 十 5 千7 1958 9.0 日刊 ር461 /7 ከተጽፈ ደብባቤ ጋር ከያይዘው ያተረቡልችን ሙሣኔ በሰሣቡ ስለ ተስማማሁበት ተፈ የም ከንዲደርስፕ ስል ተ የም ት 11 +7 1958 ዓ.ም በተጥር 1619 /7 /4462 h ተ ዳሬ ደብባቢ ጋር የውሣኔውንቨርቭል ለከቡር ፊታውሬሪ ክሉሳ በተለ ልኬክላሁ :: RU ሲሆ ን የከተማው ሕዝብ የውሃ ችንር ከማስከተለው በላይ ዝና የ በታሪክ የታመተቸውን የንንደርን ከተማ የሚገበኙት የውጭ አገር ዜጎች ተሪስቶች በሚያይፈበቸው ሆቴሶች በውብ አጠት ውስ ገያት ያስከተለው ችግር ኃላፊነትን ከገጻያስከትል በማበብ ተተወት 6 ቀን 1958 ዓ.ም በተዋር 1653 /7 /58 ከመጽፈመ በሳይ በጆሮንዱ አስከንዱር ደንኔ የንገደር ከተማ ከንቲብ האנור לבבחיים לפרחי פאדפה פאדפה לפרחים משתאמל שביים שפר אות 1958 9.0 1 MC 1310 /19 1866 TAHA TAKAT AND 280 NAM ATA ATA PRE חדם שנין צחקתם שחנקה ו:

ነገር ነን ይህ ጉባይ አብባቢና ከብይ ኃላፊነት ያለበት መሆኑን በመረብት የን ጉደር ከተማ ከንቲብ የብፋልፕን በማስታወስ ታንሣሥ 18 ተን 1958 ዓ.ም በተተር 4589/4462/7 በተዘፈ ደብባቤ አብስቤ ነበር ፤፤ ቢሆንም ገንዘቡ ከተፈ ተደ በኋላ:—

1/መረታ መዋታ በቂ ተጠፊቾች በለመ ገኘታና አገዲሁም በሚትር እርክሚኒ ስለ ሚያስከፍሉን ውሀሙ አተንን ይረስም ለመ የፈር መ ተሳሳ የጋሙን በ ቀይሚያ 7ው ታ ለማወቀ አስቸጋሪ በመሆኑ ፡፡//





וובחספם בנ לאת לדלטש הבף לאתף להם האת שפר האל אברופה: 91975 9 / 900 han mann nut no 287,721.48 AUTT HAU OAT AE 71, 146.00 AROUN AE 216, 525.48 APL MART OR

11975 9 /p how 9 thanno 70 ac 175, 433.41 Out 20/ 00 חם לחתבף הולף החלף פרט: : בחלם לרים החילה ובחשהפות ום רד את דבאף עם פורחשי הדה פאדרף עם את האה אבמרא לצר : במצמר לעם רשעת תר תהתה דיים והאה

דער אם ל מו בפר שחף ו המשף שח הבה שפף לת דבאף שבררף ናቸ/ የሰብወና የውስዮ ይርጃቱው የተሟሳ በለውሆኔ ከክሉት የውሀ ጌይሂደች ተሳብ משח הגם שברר בחדף החת הבתח לדוש מדבצה רברת להמה אר ארשל פפנים מר אור לדידע הב בה שפף : ומכשפם לשירת לף : : הבדם שתתתפת לבחמה לבדת לשעשף בגע לבבשת עם הבפףחה

פת בחבפה פרם האוהה דפבת לשורותה שרד רפתב במה עם דהתה ህዛው የሩት ቢደረግው የጎብሩተሰቡ የውሀ ፍላግትና ከክሉት የውሀ ጉዳጊይች የሚገ עסף פחשבף בה הווהה לצייף אחה דדרייהה ידע בה רחיי עסף סד 776 በቀሰሱ የሚገመት ከይደሰው::

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שף המכף רבספת דפבתר עסף להד שפתר צלפת פבער ה. U. THE TON APP RIC MC HAND YOU THIS NO ACET NO

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- አዲስ አተፈሩተ የውሀ ጌይጋደች አገልገሎት ውስመት ሲጀቃሩ በበ ከገዶ አስከ 18 ሴትር ውስመት ይቸስሉ ተበሱ የተገውተው የተፈለ የውሀ ውመን ሲባጡ በለመቻስ ቸው ቸገሩ ባይታሰል ቀር ቷል።
- ጊዜዳዊ ርክክብ በተፈጸወበት ወቅት ክውሱ ውቅ ለተሠሩ ሥራዎች ዊ ውሃ ጉራኔም ሥራ ወርጆት ተጨማሪ ክፍል መደድና በተነጥ ክብሪው መገን ስለሰው መንት አማበ የወይመለበ ተራዘው ሀደ ተብር መስከስ በክለ ነው ውስ መደረት ታይጠጠንዊ መንግል ለመፍታት የሚያስበት መንግል አንባሬስን በርክክቡ ሪፖርት ውስም ተጠቅርል።
- በውሱ መህረት ለተከናወት ሥራያቸ የጎገደር ከመደሳይ ውክር ቤት የሬውን ቴዛብ ተማምና የመጠረሽው ርክክብ በሚደረገበት ጊዛ የሬ ውን ገንዘብ የውክፈስ ንዱቱ ይኖርበታል።

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- 2/ ከብና ጋይት ውሀውን ስማወብ ተ ፈቸው ጊዛና ከፍተና ወ ጨታ የሚጠይት ስለሆነ በሽገንሩ ወቅት የከተቀች የው ጠተ ውሀና ዩቢሽ አግልንሉት <u>ተመማሪ የውሃ ፕጹግ</u>ደች በው የሬር ከፍሎን ከጠናክሮ አግልንሉት ከንደብድ ማዳረንፕ

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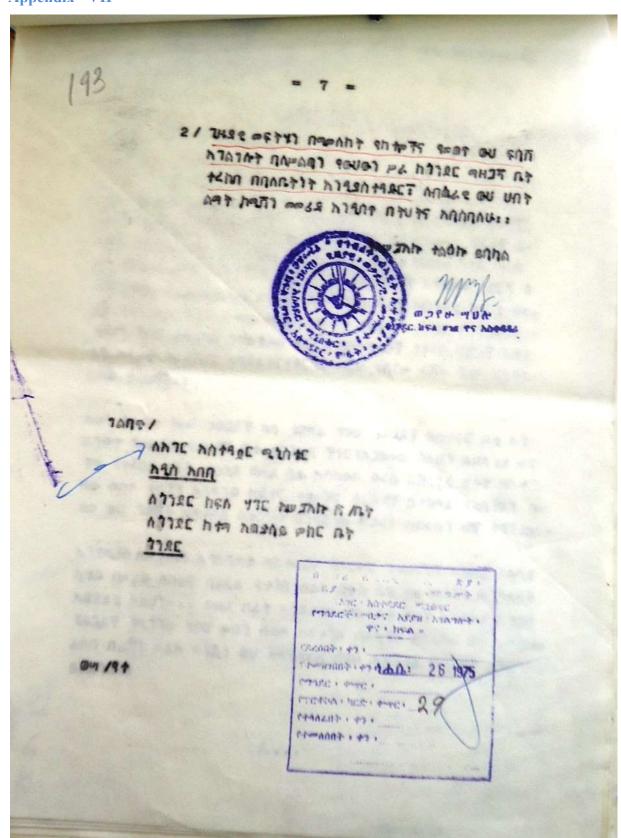
לף בל המ במפחף

አውስት የውሀ ፕልጋርቸ ተቀፍረው አገልገሎት መስመት ሲጀምሩ የመመየ ውሀው ቸ ፕሮ ይደሰብል ተብሎ የደሰብው ሰብት በለመደት ከአገንጊህ የውሀውን አገልገሎት የንገደር ከተማ አመደባይ ምክር ቤትበአለው የአልተሟለ የሰው ኃይልና ይርጆት ሥራውን ለማከናወን የማይቸል መሆኑን በኒ 30 ቀን 1975 ዓ /ም በቀምር ነአመ/22/ 151 /9 /75 በተብፈ ደብዓቤ ገልጽ በአቀጁ ቀምር 219/1974 ዓ /ም ኃላ ፊነት የተሰመው የከተምቸና የመመየ ፍርሽ አገልገሎት በለመልጣን ነበርቸንና አ ዲስ የተቀፈረትን የውሀ ጌልጋርት ከንገደር ማዘጋሻ ቤት ተረከብ ከንጊደስተና

ስክመቃሰይ ውስር ቤተ የተረሰውን የደቴ የስፍለ ነገሩ አስተባደር ጽ ጤን የው ማና መስ አስነ ፕሮምፍጋለ ማናተቀሰውነ የ ውስሆን በ የየመመለ ያ ሰኔቴ ጋናቸ ናወሀ ማና መስ ነገር በበ የጋዴሞብ ብዙናና ጋር ተናተ ወደ ነርተ ተቀመ ነገር መንነና መን የቸው ጋናና በ የመመን የመመን የመስ ነገር የተቀመ ማመቴ ስክለ መን የቸው ነገር የርዘም ጋደናና የመመለስ ተሳርልናለ ሸቡን ሀው የመ በውስ ተረሰበ በበነት የ ጋዴዮ የደነና የወሰነት የ ነገር በስለበበ በበነት ተመጠ

ስለዚህ 349 ከክፍለ 474 አትም በላይ ስለሆነ ጠቅላይ መይደው የቸገሩን አባባቢነት በማውዘተን በተረበው ተናት መህረትፕ

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Appendix - VIII

PHOTOGRAP ASTRY THE のきまるを デリリット 供写 下孔中 写え作むに 呼写 本引される写 ドワララ 光に差す PROVISIONAL MILITARY GOVERNMENT OF SOCIALIST ETHIOPIA

MINISTRY OF HEALTH
CENTRAL LABORATORY & RESEARCH INSTITUTE

マアルナー・サー・サーアC P. O. Box 1242 マルル サーアC Tel. 13 34 70, 71 73 74, 13 35 78, 13 32 58 13 00 74, 13 34 77.

> ጋው ብ/ር ሚቴሪስ ይ/ር ግዛው ፀሕደ የሊሠፓ ማዕከላዊ ከሚቱ አብላና የጤና ተበታ ሚኒስትር አዲስ አበባ

በለ ተጨማሪ ቤና አጠባበት ሳበራ ትሪያች ምሥረታ

በ1977 በደት ዓመት ውስጥ አንዲያው የታሰቡት የመና አመጪበት ላይስራትሪያች በሙሉ ተደመው አገልግሎት በመስጠት ላይ ወሆናቸው ይታወታል፡፡ ላይስራትሪያች የሚገኙት፤

ሀ/ በነቱምቱ ከተማ /ለምዕራብ ሽዋና ወለጋ ከፍለከገር/.

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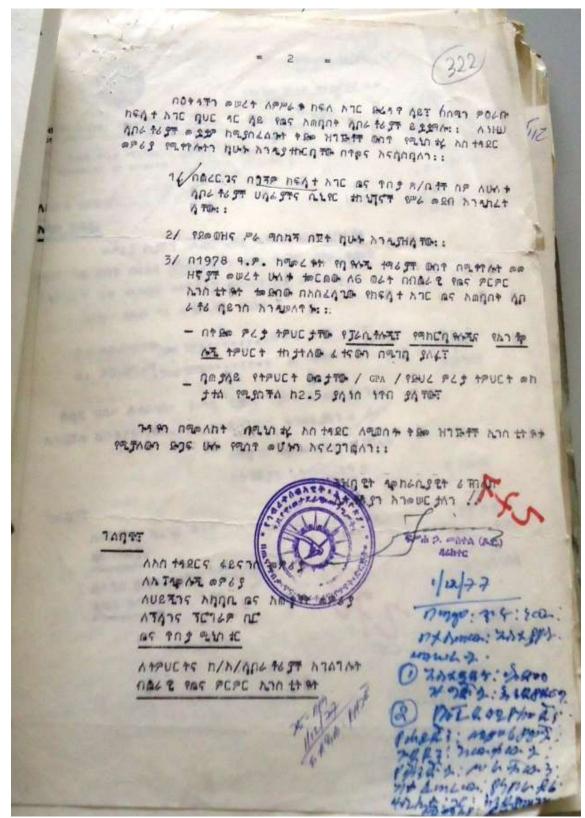
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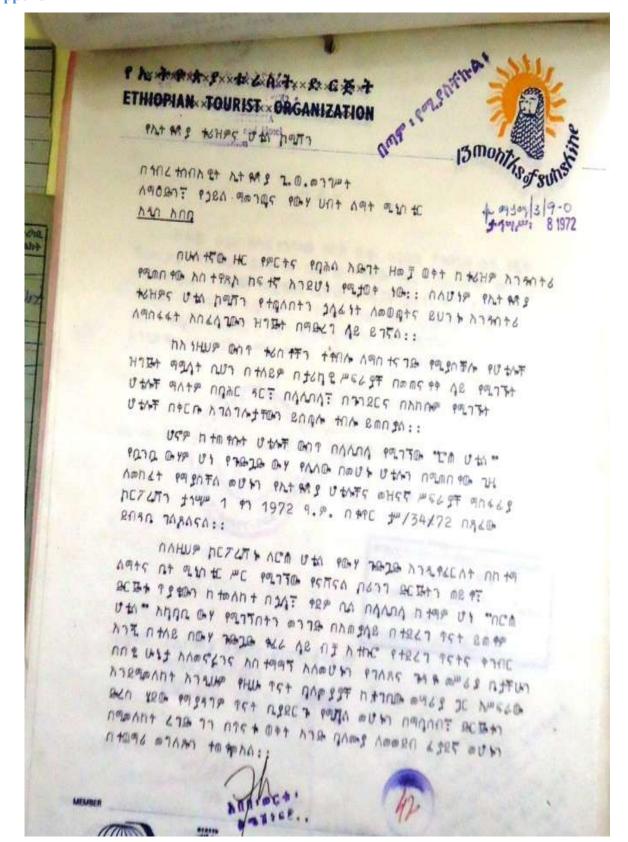
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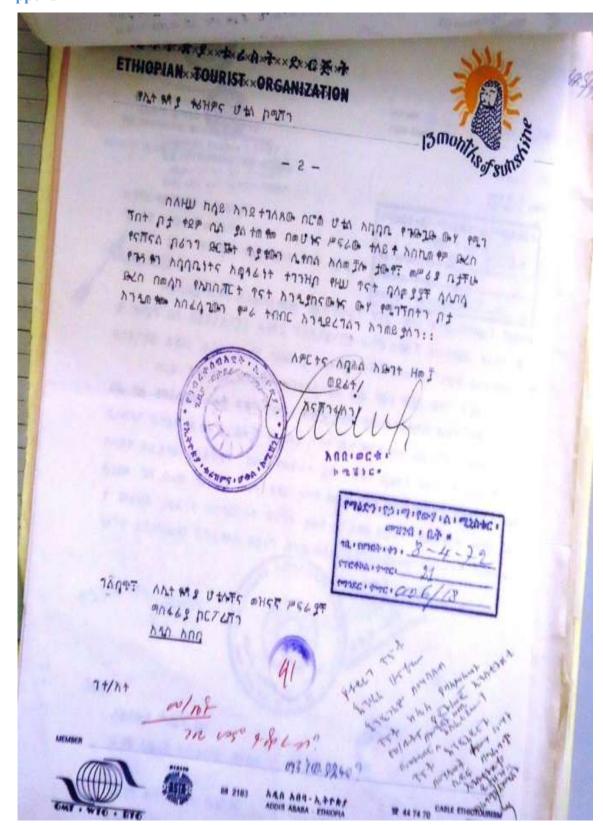
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አውጣ መታሚ ወሆትን ከፍለተ አግሩ ከሁት እ የተገነዘቡት ወሆትን ወረብተ ቸለናል። የየክ ፍለ አግሩ አገዲውሎሚና ሀይሚን ባለሙያያቸ ከሲበራ ተሪያች ጋር የቅርብ ግንኙነት የፌተሩ ባመ ታለይ ለጨና አጠብስ ቱ ተገባር አመቼ በለማሆን ይከው ለመለከታቸው ከፍሎች እንዲግለድሲ ቸው አብብ እና ተርባለን።።

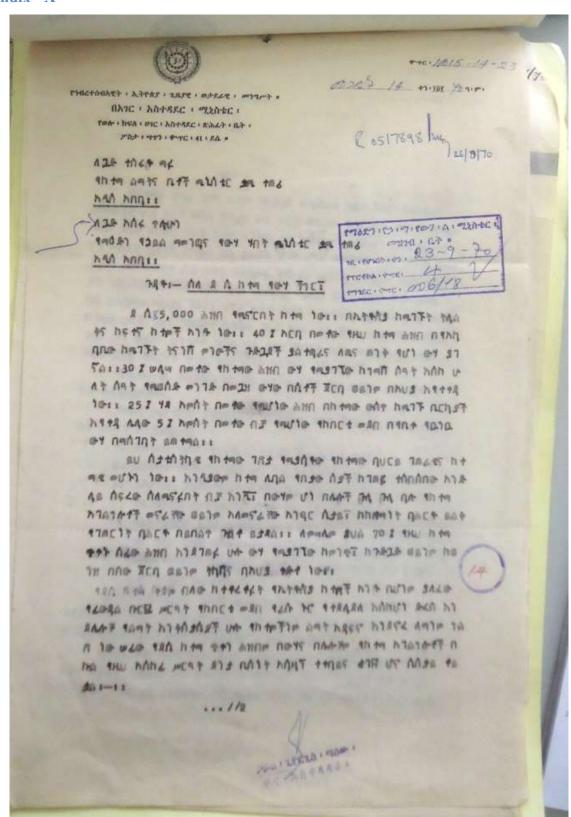
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中中区九

サフ・丁田で コ・テ・

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ארשיף של משמתבמים פים \$150,000 חב מעדי מהמיתו יי

דב אף פפר חף פפר הפויחף קסף הפייח אפין ליונ פחומים האברה האברה האברה לה

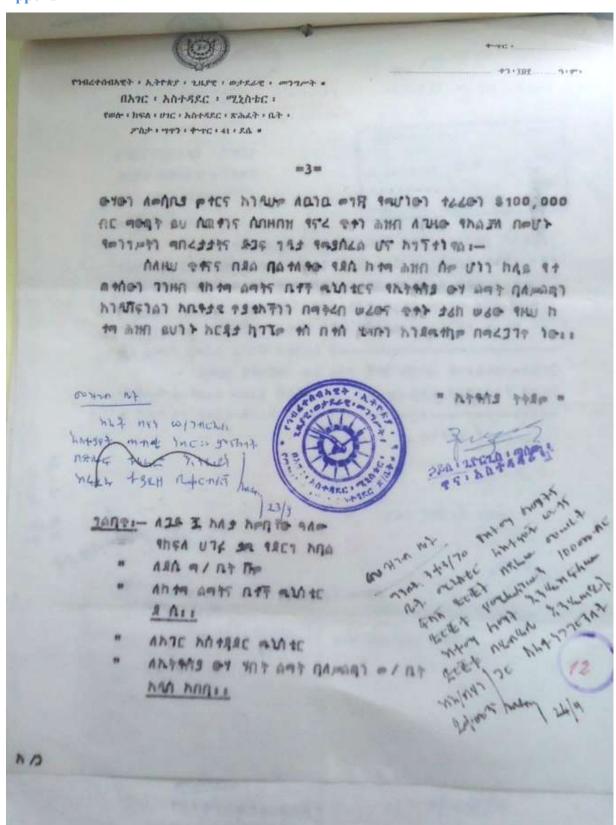
- 3. 120 NO HATTHERS IN HINCHS ATOTAL STTE TIMES TO HINCH TO HATTA ADITA ANTRE TO KIND HOREN

መሆף ሰብል ታሪክና ተስም መሪው መሪው ቁላት ልክብ የራሱን ሻገር ብራሱ የሩትና ጉሩት ክሬት እንዳወብው ራሴን በራሴ በመሪዲት መርህ ገነበተነና ገንዘውን ከንዲያስ ተጠበር ዮሩት መጽረን አስፈላጊና መድመን በመሆኑ ፲

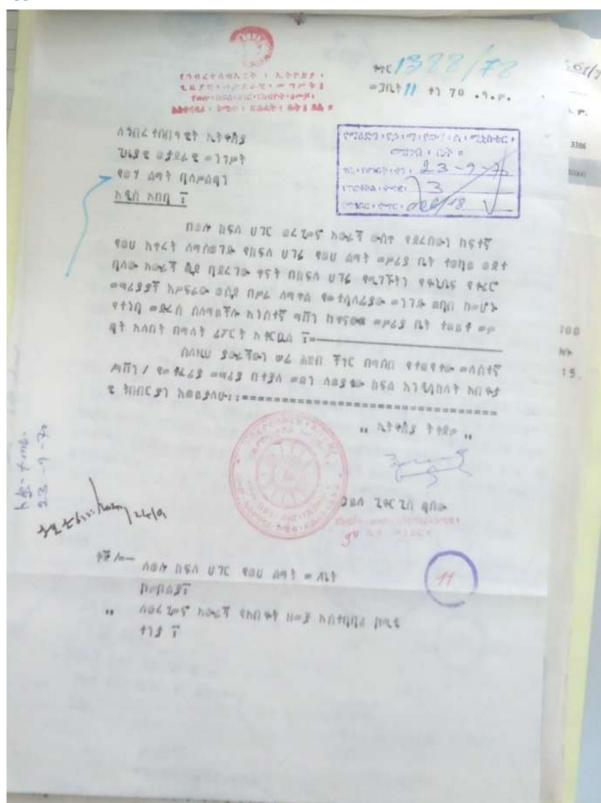
החתים שנה בפגר בנחלים ברבף חווה מיל לתני בי לחמרי באלם רפה מחתי לה בנותח שמלות האורה פרפתהות גיי לחמרי באלם רפה ממב שהף לפתח שנו לע אנו שנו בו מבשבר מלהות שה 200,000 לל

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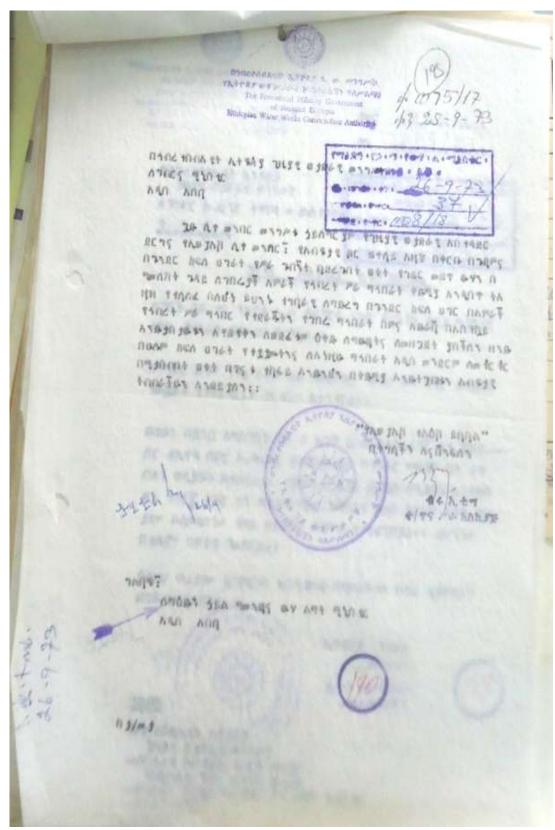
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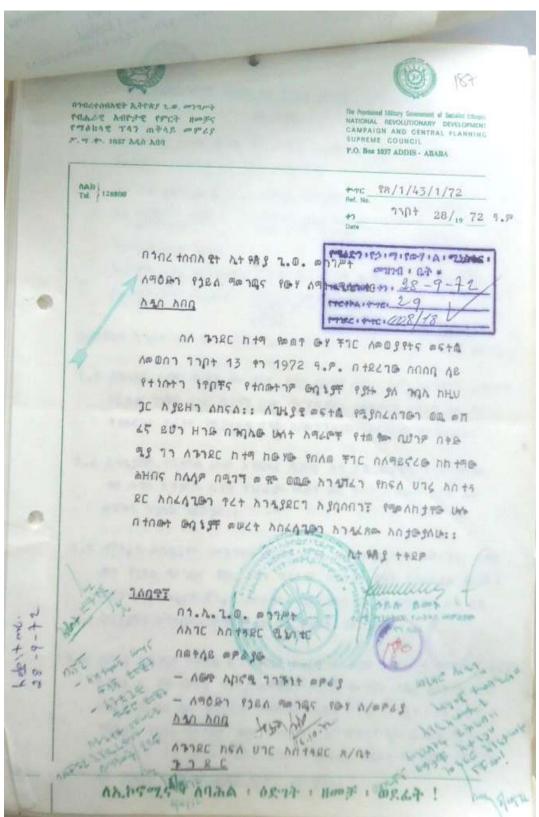
Appendix - XI



Appendix - XII



Appendix - XIII



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חת האור חוד שמת שע דובק מקום פור אור חתמת לת המת א

1. הא זיצנ הוא פשתד פע דוני עוושה את בשר האתמה אר אנף אקד אשט פור הדיים אם מקן אשרתו:-

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8=963 314

חלדה זוף לא אין 1972 ק.ד. החיקב שרופש אותר החתק לפכן מינו

- 1.1 የንገደር ከተማ የመጠና ውሀ ቸገር የቀየ ቢሆንም ከዚህ ተደም ከመንግሥት በተደረገ እርሳታና ከውዊ ሀገር በተገኘ በድር ፕሮጀክቶችን በመመሥረት መናተል ለመሰጠት የተደረጉት ፕሬቶች የሚያዘልቀ ሀነው አለውገኘታቸውን ስብስቢው ተገንዝቢል፤:
- 1.2 እንዲያውም የበተማው ሕዝብ አ የጨወረ ቢ ሂደና ልዩ ልዩ የኢኮኖሚ አንተበ ያቢያቸ የበ በ የበ አ የታበሉ ቢ ሂታ የ ነበረው የመጠ ውሀ ችግር በ ተጠብበ ደረጃ ሳይ መሆኑን ጉብኤቤ ተረድቷል::
- 1.3 የቸገሩን አባባቢነተ በወግንዘብ የክፍለ ሀግሩ ጽ/ቢት ለጠቅላይ መምሪያውና ለማዕ ውን የኃይል ማመንщና የውሀ ልማት ሚኒስቴር በተለያዩ ወቀት በለሁኔታው ያውለከተ መሆኑንና በአግቂሩም ቸገሩን ለመፍታት የተደረጉትን የረተቸ ጠማንባት ለቶ ለች ሁኔታያቸን በማመዚዘን በጉላዩ ላይ በፊ ውይይት ተደርጋለ፤፤
- 1.4 ለቸገሩ ከበ የቧይ መፍተዉ ይገኝ ዘገቡ መቀሳይ መሥሪያው በ የተር የ/አ/ተ/43/8/72
 መጋቢተ 6 ተን 1972 ዓ.ም. ለማዕውን የጋይለ ማመገЩፍ የሙህ ለማተ ሚኒስቴር
 በጻፈው ደብላቤ ላይ የጊዜያዊና የዘለ የታ መፍተዉ የችተቸ እንዲተርብለት መይተ
 የማዕውን የጋይለ ማመገЩፍ የውህ ለማተ ሚኒስቴር በንጓዩ ላይ ያለውን የቧብ
 ሚያዘያ 30 ቀን 1972 ዓ.ም. በቀ.መ8/18/20 በላከው ደብላቢውና በአብፈው
 ላይ ያቀረበ ሲሆን በዚሁ ላይ ውይይተ ተደር፯በ::

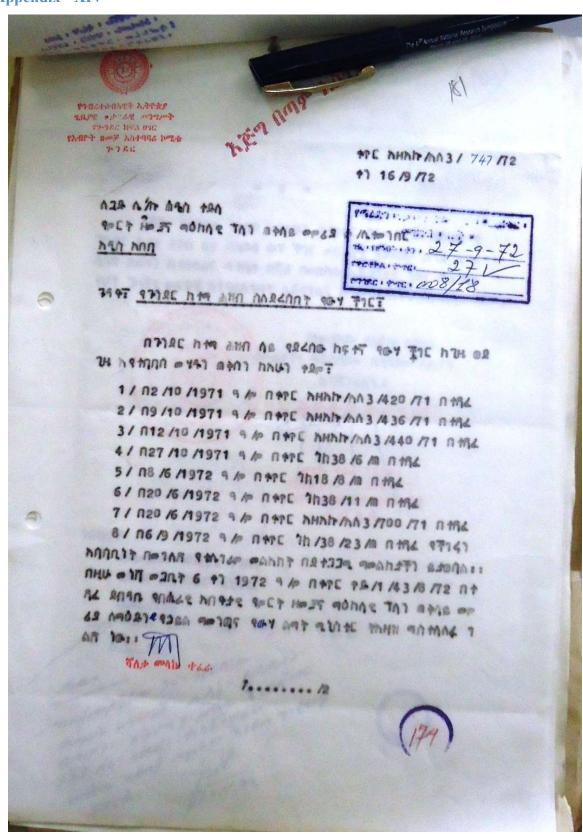
ሆኖዎ አጥጋቢ ውጤተ ማግኘተ አመራሚሪ በለሚሆን በተጸጫያ እስከ ሁለተ ጉሙ ጋደኛ ተተናረው ውጤት አጥጋቢ ከሆነ ተጨማሪ ጉሙጋይች አግላተሪያ ይደረጋለ።

- 2. BUT 160 7838 ME 19087 1380 90795 100 094 9 VI to ME 100 17838 ME BERT NY WEB 88270::
- 3. የጉድጋዶችን ሥራ ለማጠና ቀቀ የሚያስፈልግው ወጪ ከጉንደር ከተማ ማዘጋች ቤተ የመጠጥ ውሀ ሽያዊ ግቢ የሚሸፈገ ወሀገ አገላለበተ ታውቀ በአሁኑ ጊዜ ማዘጋች ቤቱ ወጪውን ውሎ በውሎ ከዚሁ ግቢ ለመሸፈን ቪልቻለ:—
 - ሀ/ ለነተጀፍ ለሠራተኛ ውሎ አጠል የሚያስፈልገውን ወጪ ብቻ አሠራው የንገደር ከተማ ማዘጋሻ ቤተ ለሠራው ለጉድጋይ የፋር ድርጅት በቀድሚያ በመከፈል የራውንና ከፍተኛውን ወጪ ማለተም ለሚተከሉተ ያሚ መሣሪያያቸና ተባ ተቦቸ ከፍያ ለመሣሪያቻቸ ሲገሪሲሽንና አግልግሉተ ከፍያ የሚሆኑተን ወጪያቸ የማዘጋሻ ቤተ ዕላ ሆነው አሠራውና ሠራው ውሥሪያ ቤተቸ በሚሰማውበት በተወሰኑ ዓመ ታተ ውስተ እንዲህፈል ውስ እንዲፈጽሙ::
- ለ/ ለበተኞች ልማተ የሚሆን በያውቀ ከነላጅና ከሽተጣ ሽተጠቸ በተወበነ
 የተረተ ቱንን እየተሰበብበ በከተኞች ልማተና በተ ሚኒስቴርና በማዕይን
 የኃይል ማቀንጭ ሚኒስቴር የምር ፊርማ ከሚንተባ ተሰው ግቡ ተተማዊ ላይ
 የንገደር ከተማ ማዘጋች ቤተ ለዚህ የውሀ ጉድጋይ ሥራ አንዲባደር ሆኖ
 ከሚኒስቴር ፣ መ/ቤተቸ በሚወሰንለተ ጊዜ ውስ፣ ዕላውን እንዲከፍል
 በማለተ ከሁለተ አማራጆች በአንተ በመጠተም የጊዜያዊው መፍተል ወጪ አንዲሽፈን

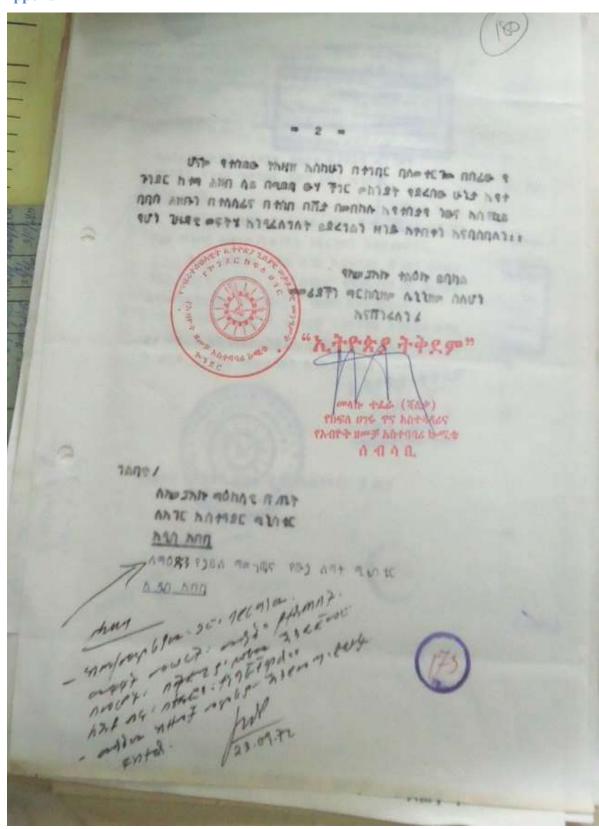
2.2 HA 9 # 4 + M

U/ ለከተማው የዘለቱታ የመጠተ ውሀ መፍተል ላይ ለመድረስ በተቋሚያ የለቀ ለቅ አማራዉቸ ፕኖት መከናወን አስፈላጊ በለሀን ለዚህም ፕኖት ከቪኖች መንግሥት ነዒ አርሳታ ይገኛል የተባለውን ሁኔታ መንግው ለማበያዝ የማዕውን የኃይል ማመንጤና የውሀ ልማት ተወከይ በሚገኝበት የመቀሳይ መምሪያው የውዩ አስኖሚ ግንኙነት መጽሪያና የማዕውን የኃይል ምንጭና የውሀ ልማት መምሪያ ኃብራያቸ የበናት አምባቢን እንዲያነጋግሩፕ

183 או פארער הוא אישוד שע פרך אחח "באנתר בל חוש דרך איז מדב מדור מא חשתר שע דוב ח to חקף Usy path to the prof per the mat ou tet חתט אכ אל אראחק מר:: עלף התהף היה ה לקתה צבא SAGO PARE HAY MONT OU NAGAS ANS IT NIST NEA ጸም ለገፍር የንገደር ከተማ ውሀ ተናተ ከለሱቱ ከተቃቸ ተደም ስንዲበና ጠ/ ለኢተ የጵያ በ ተሞቸ አበፈላጊ የሀነውን የባኔቲሽን ሥራ ለመጀመር አንዲቻል THE HAT THEF HAMPS TONE THE AR PHOUST ለኢተ የጵያ በ ተሞቸ አካባቢና መቀሳሳ ሁኔታ ተሰማሚ የሚሆን የባኔቲሽን TTC m to grant act uto te year upo o/ has a to that h to F PHA to toom ou ofth arrand የ "ሬዚብሊቲ" ተናተ እና ለኢተ የለያ ከቱንቸ የባኒቱሽን ቸግር ወና ቻ PREDOS RET TET TOLARES PRUT REL HEHE DIAG "+CPA AS 6667A" ASTATA PC+ TAB + A9087 PJBA THE THE PAU ANT MENT THOUT ON THE MENT ANTAR መምሪያው አንፋተርብ፣ שו פארוב האם שהחת פט קרד האבחד פתבתפחדה שון פקס 875 8784 9074 Winte 1748 18 914 11+1 19986711+ 77+ ሰዓ ሰዓ ምንወቸ አንዲመያቀ በጠቀሳይ መምሪያው በኩሳ ተኮረተ አንላደረግበተ:: PHONE NAUS PROMITE UM NAE PHOTO POST THE AS ATESOM וואל השתח החחתם לאו במיני



Appendix - XIV





ATRE BY TEN NUM TO REA ON DOCA +

ከዚህ ተደም የአውሮፖ ኢክኖሚክ ከሚሽን በሁለተኛ ደረጃ በለሚሰውው የዕርብታ ግንዘብ በመሥራያ ቤታችን በኩስ አንው አንው ውስው ተኛ በለአሎፕ ከነሱ ካብታረውና የሚ ታረውብት ጊዜ ክብተገለጸለተ ግንዘቡን ለውስቀት የማይቸስ ወሆኑን እ.ኤ.አ. ፈብረ የሪ 12 ቀን 1980 ዓ.ም. በንንዘብ ሚኒክቴር ለናሽናስ አውቴራይዚንን አራስር ወብፋ ይ ታወሳለ::

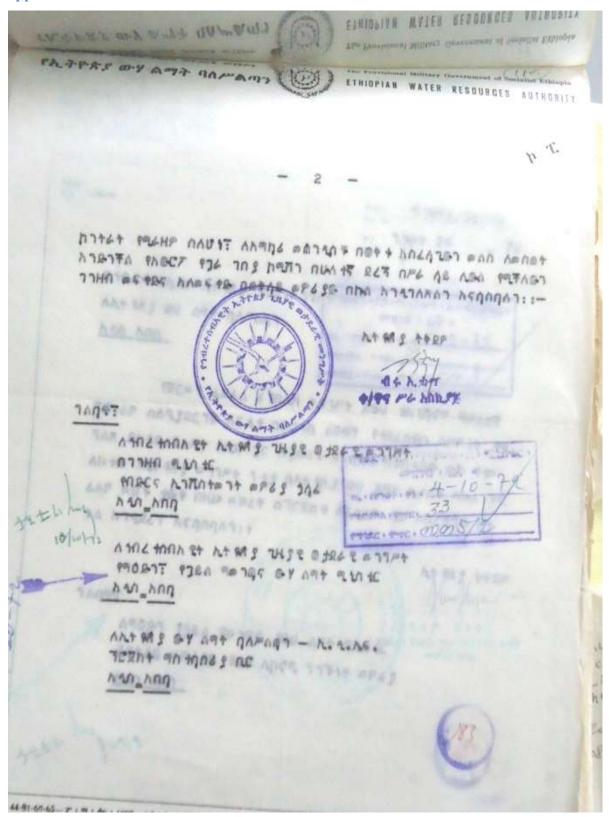
ይከመተ አለ ለ ተባለው አለመኖሩን በመግለጽ መ/ቤታቸን ተገቢውን መሰብ አዘጋጅት ለጠቆራዊ አብ ዓታዊ የምርተ ዘመ ፓና የማዕከላዊ ፕላን ጠቅላይ መምሪያ እ.ኤ.አ. መጋቢት 15 ተን 1980 ዓ.ም. መለጎ5/36 በተለፈ ደብላቤ አቅርበን፤ ጠቅላይ መምሪያው የተ ዘጋጀውን ደብላቤ ለከሚሽት እ.ኤ.አ. ሚያዘያ 21 ተን 1980 ዓ.ም. አበ ተለበፍኮል::

ደብ ተቤው በወቅ ቱ የተሰለፈ ሲሆንዮፕ አስካሁን ውረስ በሁለተኛ ደረጃ በሥራ ሳይ በለሚውለው ገንዘብ ከኮሚፕ ኑ መስስ አስ ተሰመንሥ።

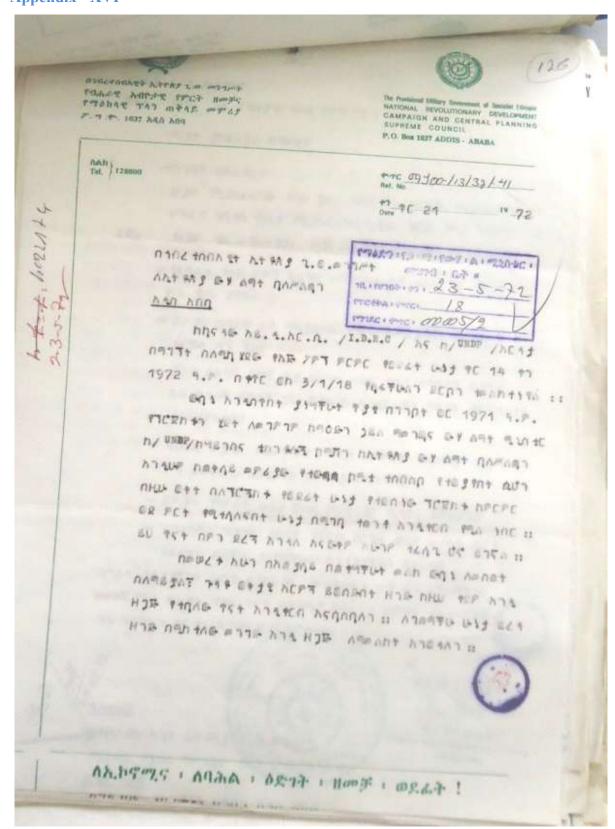
በአሁኑ ጊዜ በመጀመሪያ ደረጃ የተፈ ተደው ገግዘብ በማለቱ፣ የግሮጀክ ተገ ሥራ ለማ ከናወገ ችግር ከመፈመረም በሳይ ለሁለት ዓመት በዕር ትታው ገግዘብ ከውጪ እግር በከግትራት የተተመፉት መመንፈስች የሥራ ጊዜያቸው በየተምት ወር በለሚያልት በውሎ መሠረት የውሎ ጊዜ ከማለቀ በፊት በሁለተኛ ደረጃ ለሚሠራው ሥራ የሚቀየሱ መሆናቸውን አለመሆናቸውን ከሰምለ ወር 1972 ዓ.ም. መግለጽ በለአለብገ፣ በአሁኑ ጊዜ በሁለተኛ ደረጃ በለተፈ ተደው ግግ ዘብ ሁኔታ ማወቅ አበፈሳጊ ሆኖ አግግተነዋለ፤: ግግዘቡ የሚፈ ተው ከሆነ፣ የመጠንፈስች

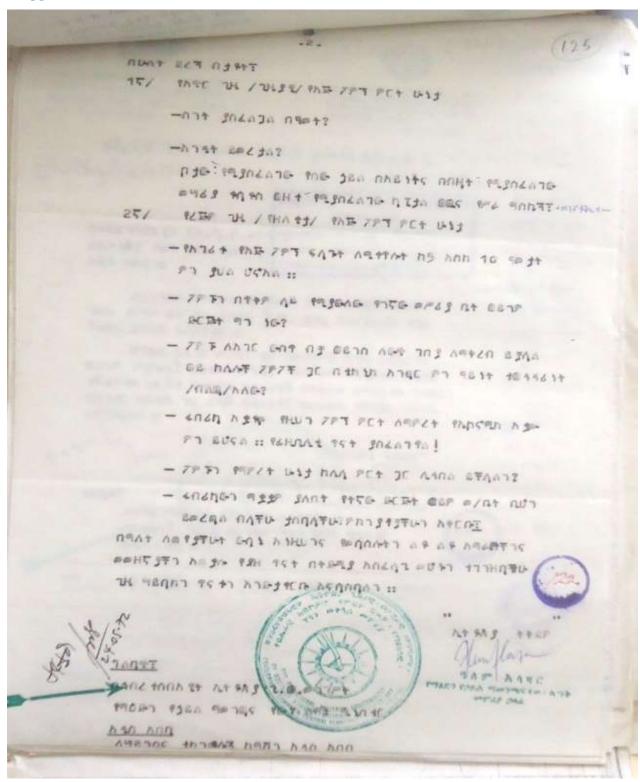
17

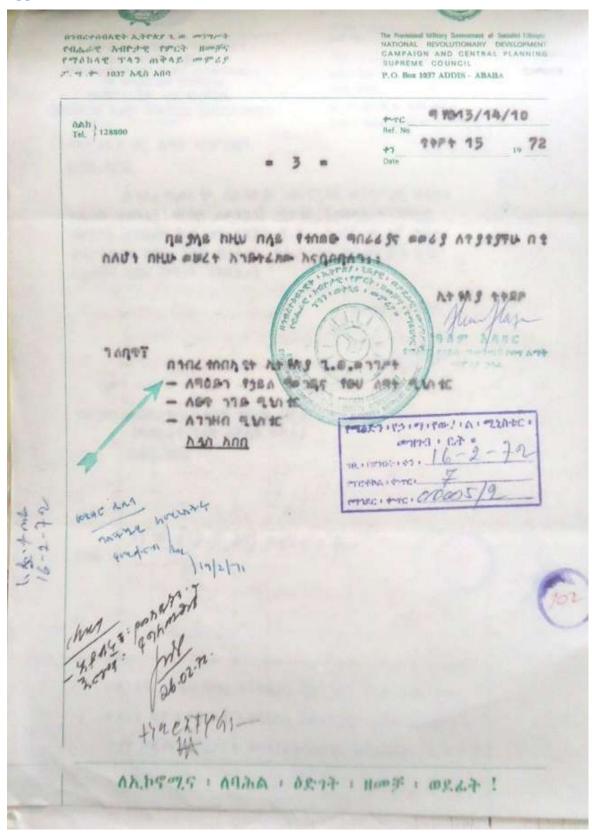
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Appendix - XVI









חדתב שע ממץ פנדץ

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