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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**



**ACHIEVEMENTS AND CHALLENGES OF RURAL WATER
SUPPLY AND SANITATION STRATEGIC PLAN
IMPLEMENTATION IN TOLE ANA OF SOUTH WEST
SHEWA ZONE**

BY

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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF DEVELOPMENT STUDIES
ENVIRONMENT AND DEVELOPMENT DEPARTMENT**

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A Thesis Submitted to the College of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Development Studies, Environment and Development

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Title
Achievements and Challenges of Rural Water Supply and Sanitation Program Implementation in Tole Ana of South-West Shewa Zone.

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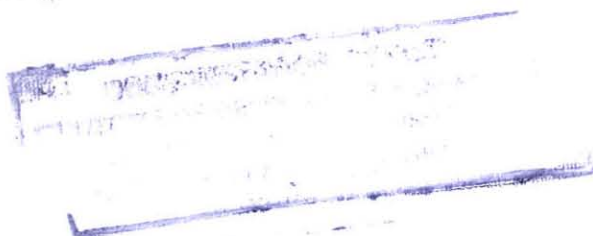
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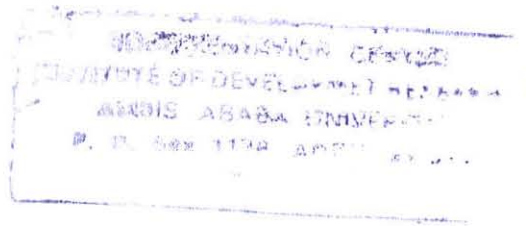
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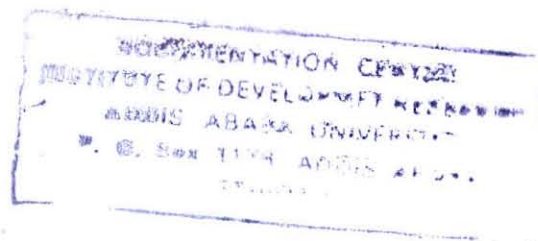
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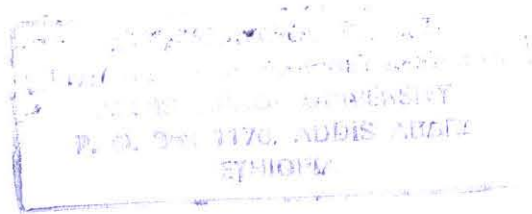
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Acronyms

AfDB – African Development Bank
AWT – Ana Water Team
ASG – Ana Support Group
BADEA – Arab Bank for Economic Development in Africa
CFT – Community Facilitation Team
CSA- Central Statistical Authority
DFID – Department for International Development, UK
DRA – Demand Responsive Approach
EFY – Ethiopian Fiscal Year
EU – European Union
FDRE – Federal Democratic Republic of Ethiopia
GPS – Global Positioning System
HH - Household
ICRC – International Committee for Red Cross
JICA – Japan International Cooperation Agency
KII – Key Informants Interview
LSPs –Local Service Providers
M&E- Monitoring and Evaluation
MDGs- Millennium Development Goals
MoFED- Ministry of Finance and Economic Development
MoWR- Ministry of Water Resources
NGOs- Non-Government Organizations
OBoFED- Oromia Finance and Economic Development Bureau
OBoWR- Oromia Water Resources Bureau
OSRA – Oromo Self Reliance Association
PASDEP- Plan for Accelerated and Sustained Development to End Poverty
PPP –Purchasing Power Parity
PVC – Polyvinyl Chloride
Qty - Quantity
R-WaSH – Rural Water Supply, Sanitation and Hygiene
RWSS- Rural Water Supply and Sanitation
SDPRP – Sustainable Development and Poverty Reduction Program
SNNPR- Southern Nations, Nationalities and Peoples Region
SPSS – Statistical Package for Social Sciences
SWOT –Strength, Weakness, Opportunities and Threats
TAAO –Tole Ana Administration Office
TAFEDO – Tole Ana Finance and Economic Development Office
TAHO – Tole Ana Health Office
TAWRO – Tole Ana Water Resources Office
TASP – Tole Ana Strategic Plan
TVET – Technical and Vocational Education and Training
UAP- Universal Access Program
UN – United Nations
UNDP- United Nations Development Program
UNICEF – United Nations International Children’s Fund
WaSH – Water Supply, Sanitation and Hygiene
WaSHCO- Water, Sanitation and Hygiene Committee
WATSAN- Water Supply and Sanitation
WBPS – World Bank Program Support Staff
WHO- World Health Organization
WRO – Water Resources Office
WSDP- Water Sector Development Program
WSS- Water Supply and Sanitation
WSSA- Water Supply & Sewerage Authority



Glossary of Some Terms

Community: Inhabitants in a given locality getting water supply service from one source and share other social services in common

Ganda : The last and the smallest local government's administrative unit having a similar meaning as Kebele

Ana : District level of government's administrative unit having similar meaning as Woreda

Zone: An administrative unit between Region and woreda comprising certain number of Anas (woredas).

Water supply service: delivering water supply services for domestic purposes.

Safe water: water supply service with adequate quantity and acceptable in quality

Access to water supply service: according to UAP access is defined as the ability of an individual/household/community to get the services within a reasonable distance and quantity. For rural communities access is 15 liters per capita within 1.5 km, while for urban communities access is 25 liters per day per capita within 0.5 km distance.

Sanitation: refers to the availability of toilet service with evidence of use and availability of other accessory hand washing facilities.

Water supply schemes: infrastructures (hardware) built to deliver water supply services.

Types of water supply schemes include:

- **Protected springs:** Natural springs protected from contamination by constructing structures at their sources. Some protected springs are without distribution (capped at spot) and others are with distribution pipe lines and more than one water point.
- **Hand dug wells:** Water well dug by human labor and hand tools. It could be open or fitted hand pump.
- **Machine drilled shallow well:** Water well drilled by drilling machine and fitted with hand pump.
- **Deep well/Borehole:** A machine drilled well fitted with motorized pump and distribution pipe line.
- **Expansion Scheme** – A scheme with extension pipeline, water points and sometimes with reservoir extended from previously constructed nearby water supply scheme (MoWR, 2005)

Abstract

The overall objective of this study is to assess the achievements of the five years strategic plan and challenges encountered in implementing the strategic plan in the study area of the South-West Shewa Zone. In doing so, the research was aimed at assessing and finding out major challenges that hindered the strategic plan's implementation in the study area and forward suggestions for future performance improvements of the water supply and sanitation development endeavors. During the study, both qualitative and quantitative research methods were employed. Household survey, Key Informants interview and observation methods were the major data collection tools used to generate primary data. Moreover, all the necessary and relevant secondary data were also used to substantiate the primary data. Data analysis of the research was done by using both descriptive statistics (for quantitative data) and triangulating the findings of different research tools and data sources one with the other (for qualitative data). It has been depicted that less emphasis was given to low cost and easily manageable water supply technologies such as on spot springs and hand dug wells with hand pump schemes. Implementing bodies have shown unjustified inclination to high cost water supply technologies such as deep wells and machine drilled shallow wells though there is good ground water potential which could be developed at community level with low cost and simple and easily manageable technologies. The absence of well organized water resources database (both developed and potentially to be developed) as to the area is also another problem encountered in making appropriate and cost efficient water supply technology selection especially on NGOs implemented projects. The weak integration among stakeholders is also another challenge which resulted in inefficient utilization of available scarce capital and human resources. The absence of well coordinated monitoring and evaluation system has also affected the construction quality of water supply projects and their timely completion. Moreover, the very limited financial, human and material resources capacity of local implementing bodies such as area water resources office, less emphasis for constructed water supply schemes' management and the scattered settlement pattern of the people have been also among challenges encountered during the implementation of the strategic plan which resulted in the slow pace of the water supply and sanitation development. Therefore, it is found recommendable to establish a well organized water resources database at Area level so that rational and appropriate water supply options' selection could be fairly made. It is also found important to focus on community based low cost and easily manageable water supply options that could be developed with the local capacity by mobilizing the community at large with the technical support of local service providers using the available limited capital resources. It is also recommendable to build the capacity of the Area water resource office by finance, logistics and materials and manpower (experienced professionals) so that it can give timely response for communities' inquiry and can perform its duties successfully with its full capacity. Moreover, it is found recommendable to give due emphasis for the developed water supply schemes' management to ensure their sustainability parallel to new water supply schemes construction. The coordination of all stakeholders being involved in the water sector development should also be well strengthened so that efficient utilization of available scarce resources and improved pace of the sector development could be achieved.

CHAPTER ONE

1. INTRODUCTION

1.1. BACKGROUND

Water is among the most essential requisites that nature provides to sustain life for plants, animals and humans. The total quantity of fresh water on earth could satisfy all the needs of human population if it were evenly distributed and accessible (Stumm 1986:201, quoted by Adriant and David, 1988).

Ethiopia being one of the Sub-Sahara African developing countries, is characterized by wide-spread poverty, poor infrastructural and social facilities, low per-capita income (PPP), high unemployment ratio, high mortality and morbidity rate, etc (MoWR, 2005). Water supply is one of the poor social services prevailing in the country that calls for due emphasis and significant improvement in order to reduce water-borne and water related health problems and thereby to create healthy and productive citizens.

In line with this, the Ethiopian government is determined to enhance the water sector development including the improvement of safe water supply and sanitation facilities to his citizens by setting different plans at different times. Among these endeavors, the government has ratified the Universal Access Program (UAP) in 2005 to provide safe water for 98% and 100% of the rural and urban population of the country respectively; with 100% improvement in hygiene and sanitation by the year 2012 mainly focusing on the use of low cost technologies at the community level (MoWR, 2008).

On the basis of the Universal Access Program, the government also prepared Plan for Accelerated and Sustained Development to End Poverty (PASDEP), which is a national plan for guiding all development activities of the country for 5 years from 2005/2006 to 2009/2010. The first 5 years plans of the UAP (PASDEP plans for the water sector) has targeted to increase access to safe water supply to 80% and 92.52% for rural and urban population of the country respectively by 2010 thereby reducing the malfunctioning of schemes to 10%(MoWR, 2008).

Based on the National Water Supply and Sanitation Universal Access Program, the Oromia Water Resources Bureau in its part set its Universal Access Program targets to reach the universal access of water supply and sanitation services to 100% by the end of 2012. To this end, the Bureau prepared a five years strategic plan lasting from year 2005/2006- 2009/2010 as part of the National PASDEP plan of the Water Sector.

According to the data obtained from Oromia Water Resource Bureau annual report of 2008/09, water supply access of the region by July, 2009 was 59.8% though there is substantial difference between rural and urban water supply access, which was 54.6% for rural and 94% for urban. Moreover, the data obtained from Federal Ministry of Health annual performance report of EFY 2000 revealed that the sanitation access in terms of latrine coverage for Oromia region was 35.4%. According to the unpublished water supply inventory report of 2007 conducted by Oromia Water Resources Bureau, the water supply accessed population of the study *Ana Tole* was 28.46%. The same report also depicted that 94.7% of the existing water supply schemes were functional while the remaining 5.3% were non-functional which showed the actual water supply access could be even less than the aforementioned figure.

Tole Ana, one of the eleven *anas* of South-West Shoa Zone of Oromia Regional State in its part prepared its own five years strategic plan as part of the regional strategic plan. At the base year of the strategic plan (2004/2005), Tole *Ana* was one of the *anas* with least water supply and improved sanitation accessed population. From the total 57,702 *Ana* population, only 6% and 1.37% of them were accessed to potable water supply and improved sanitation respectively up to 2004/05 budget year (TASP, 2005).

Despite the desperate existing situation, taking in to account the *ana's* water resource potential, the presence of resident professionals in almost all of the rural *gandas* (kebeles), the communities experience in collective action and willingness to contribute, the commitment of the Ana staff, NGOs and donors support together with the supportive decentralized institutional setup, the Ana is determined to raise the coverage of both rural water supply and sanitation to 100% with a proportionate behavioral change in the communities' hygiene practice, in partnership with all stakeholders by the end of the five years planning period.

1.2 STATEMENT OF THE PROBLEM

According to the International Association of Hydrologists' report of 2008, there were at least 1.1 billion people across the world that does not have access to safe drinking water. Many of these people live in rural areas and are among the poorest and most vulnerable to be found anywhere in the world. In sub-Saharan Africa, 300 million people have no access to safe water supplies – approximately 80% live in rural areas. Therefore, significantly increasing the coverage of rural water supply in Africa is fundamental in achieving many of

the internationally agreed Millennium Development Goals (MDGs). Without safe water near to dwellings, the health and livelihoods of families can be severely affected; children's education suffers as the daily tasks of survival take precedence over all other concerns.

Efforts made to enhance the rural populations' water supply access of Oromia region in the past four years (2005/06-2008/09) enabled to increase the number of rural population with access to safe and adequate water supply from 36.2% (2004/05) to 54.8 at the end of 2008/09 budget year. Similarly, the number of urban population with access to safe and adequate water supply increased from 83.9% to 94% in these four years. As a result, the overall population with access to potable and adequate water supply as to the region increased from 42.85% to 59.8% at the end of 2008/09 which is on average 4.25% water access increment per annum though the intended target of the water supply and sanitation UAP was to increase populations' access to safe water supply by 9% and above annually. Hence, the actual achievement of the first four years of the PASDEP plan lagged behind its initial plan almost by half. Consequently, 40.2 % of the people living in the region are still looking for access to safe and adequate water supply which needs big effort and commitment and revising the implementation strategies in the remaining three to four years of the UAP implementation period to attain the UAP targets (OBoWR, 2009).

Similarly, in the study *Ana Tolc*, the total population accessed to potable water supply in the base year of the five years' strategic plan (2004/2005) was only 6% whereas 94% of the Ana population was not accessed to potable water. Most of the Ana populations often use unprotected water sources such as traditional hand-dug wells, unprotected springs and rivers for both domestic consumption and livestock watering. This condition has imposed a significant health problem on the Ana population having aggravated the prevalence of water-borne and water related diseases (TASP, 2005).

The data obtained from Tole Ana health office revealed that the top ten diseases registered at Tole health centre in 2004/2005 were upper respiratory tract infection, malaria, intestinal parasites, diarrhea, fighting cases, tonsillitis, rheumatic pain, gastritis, eye diseases and skin infections of which six of them (malaria, intestinal parasites, diarrhea, rheumatic pain, eye diseases and skin infections) were water-borne or water related diseases. This being the case, efforts made in the past decades to solve this desperate condition were not satisfactory and hence the percentage of population accessed to potable water supply and improved sanitation remained low and the pace at which it is progressing is still very slow.

1.3 OBJECTIVE OF THE STUDY

General Objective:

The general objective of the study is to explore achievements and assess challenges of rural water supply and sanitation strategic plan implementation in Tole *Ana*.

Specific Objectives:

- 1) To explore achievement of water supply and sanitation universal access plan and examine the compliance of planned and executed water supply technology options.
- 2) To examine the coordination and participation issues of different stakeholders working on water supply and sanitation in Tole *Ana*.
- 3) To assess gaps and issues with reference to manpower, financial and material resources at Tole *Ana* Water Resource Office.
- 4) To explore challenges that hindered the five years' water supply and sanitation strategic plan implementation and
- 5) To examine the extent to which the UAP service delivery standards were attained by the newly constructed water supply services.
- 6) To see the water tariff setting procedures and examine the affordability of water tariffs by user communities.

1.4 RESEARCH QUESTIONS:

The research questions are:

- ❖ What improvements have been achieved by the water supply and sanitation five years' strategic plan in terms of coverage, number of users and number of constructed water supply schemes?
- ❖ Are planned and executed water supply schemes compatible with respect to technology mixes?
- ❖ What are the major issues of coordination and participation of stakeholders working on water supply and sanitation development undertakings?
- ❖ How is the existing water sector institutional capacity at Tole *Ana* with reference to human, financial and material resources?
- ❖ What are the major challenges those hindered the five years' water supply and sanitation strategic plan implementation in Tole *Ana*?
- ❖ Have the UAP service delivery standards been met by water supply schemes constructed by the five years' strategic plan?
- ❖ Is water tariff setting procedure participatory and are water tariffs affordable by users?

1.5 SIGNIFICANCE OF THE STUDY

Water is fundamental to life and health. It is also a precondition for realizing other basic human rights and in the fight against poverty. The vital importance of water for development is also reflected in the Millennium Development Goals (MDGs): by 2015, the number of people without access to safe drinking water and adequate sanitation must be cut in half.

Accordingly, the findings of this research are useful in many ways.

1. It provides baseline information on challenges of rural water supply and sanitation program implementation so that it narrows the research gap in the sub-sector.
2. The results of this study can also contribute in building knowledge base for academic and research community.
3. Finally, the findings and recommendations of the study will also help policy-makers and executive bodies at different administrative levels as an input in policy making and facilitates its implementation in the sub-sector.

1.6 SCOPE AND LIMITATIONS OF THE STUDY

The study has the following limitations:

- ❖ Since some rural *gandas* don't have infrastructural facilities such as roads, there is no any transport facility to reach these rural *gandas*. Hence, it was compulsory to travel on foot for about one to two hours during the work.
- ❖ Getting the desired governmental and non-governmental organizations' officials, experts and technicians for key informant interview was also a challenge since most of them were not available at their offices for different reasons such as for meetings, field works, experience sharing trips and etc.
- ❖ The difficulty to get well organized data as required from the relevant sector offices was also the other limitation of this study. There is poor data handling and management practice at all levels of the water sector from regional to Ana water resources office levels.
- ❖ There are other challenges which affected the water supply and sanitation development such as fund disbursement problems related to donors that are linked to the national procedural prerequisites which need to be dealt at national level and hence are not considered in this study.

1.7 STRUCTURE OF THE THESIS

This thesis embraced at the beginning an abstract of the main document which summarized the core components of the thesis. It also comprised an introductory part which embraced background, statement of the problem, objectives of the study, significance of the study and scope and limitations of the study. Different related literatures reviewed to support the research work have been also included as part of the thesis. Results and discussions, conclusion and recommendations have been also incorporated as major components of the thesis. Last but not least, references, glossary and annexes have been also indicated at the end of the thesis.



CHAPTER TWO

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORKS

2.1 CONCEPTUAL /THEORETICAL/ OVERVIEW

2.1.1 Approaches to Rural Water Supply and Sanitations (RWSSs)

2.1.1.1 Supply-oriented Approach

Since 1970s, there was a consensus that governments and donors should alleviate poverty in rural areas through providing basic needs such as drinking water, which was largely free at least in capital costs. This approach is now labeled as supply driven (Kleemier, 1995:1).

The basic needs/supply-driven approach/ has been adopted for its own elements that were taken to expand water services in the developing nations. The first element is that donors and governments provide the minimum level of improved water services such as hand pumps, to as many people as possible with available funds. The second one was to build up the capacity of government agencies to appraise, implement and manage schemes. And the third one was providing subsidies to rural water supply (Kleemeier, 1995:3).

The UNDP and World Bank Working Paper (1997:2) summarized the features of supply-oriented water supply approach as:

- a) Supply-driven: implementing agencies staff alone decided to construct water supply facilities to the communities based on prevalence rates of water-borne diseases; demand was not a consideration;
- b) Top-down decision-making: intended beneficiary communities had no role in determining design and service level issues; no financial stake; and no sense of ownership;
- c) Construct and handover to the community (Hit and down): no attempt was made to organize the community and build its capacity for operations and maintenance of water supply facilities and other post-construction activities improving hygiene sanitation practices.
- d) Overall results: The emphasis was on increasing coverage, without the necessary safeguards at community and government levels to ensure sustainable operation and maintenance of service of facilities. The water supply program had limited impact on the intended objectives; many of the facilities built did not last very long.

2.1.1.2 Demand –responsive Approach (DRA)

According to Gross et.al, 2001, demand – responsive programs give each community and the various groups in that community an informed choice of services and service management system. This means that all locally relevant groups, or stakeholders, get information on all relevant aspects and implication of the various water supply options. The information may include; the amount and quality of water provided; the purposes for which this water will be adequate; potential implications for health and socio-economic development; investment and recurrent costs involved; approximate walking distances; requirements and possibilities for sharing of service and costs(for example, through group connections or by forming user groups); prospects for service regularity and reliability; and differences in ease of maintenance (for example spare parts and technical skills required) and administration.

As a result, demand-responsive approach that bases itself at grass-root level admits the participation of all relevant stakeholders starting from the early stage of need assessment and projects identification to their implementation and to their final monitoring and evaluation, enhances the sense of ownership of the user communities on the constructed water supply schemes thereby improves the sustainability of the water supply schemes constructed. Hence, the Ethiopian government is being acting accordingly for the attainment of the UAP and MDGs targets.

2.2 RELATED LITERATURE

As to Oxman and Oxe stated and quoted by Andrei, there is very little that a government can do that will result in greater benefits than providing clean and healthy water to the population. With this action the incidence of diseases is reduced, bringing down global health costs thereby increasing overall productivity and contributing to political stabilization”

The Universal Declarations of Human Rights which was adopted by UN General Assembly in 1948 mentions on Article 25(1) as: ‘Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family including food, clothing, housing, medical care and necessary social services.’

Accordingly, the Ethiopian government has shown its determination to enhance the water sector development including the improvement of safe water supply and sanitation services for all people. To this end, Ethiopia has prepared different ambitious water sector

development plan targets at different times and launched actions accordingly. Some of the officially approved plans are the following:

- *MDG targets are to halve, by 2015, the proportion of people without sustainable access to safe drinking water and sanitation by achieving 63% access to safe water supply and 58% access to improved sanitation by 2015.*
- *The Ethiopian Government has also ratified the Universal Access Program (UAP) in 2005 with its targets to achieve 98% coverage of water supply in rural areas and 100% in urban areas; with 100% improvement in sanitation by the year 2012.*
- *The first 5 years (2006 to 2010) plans of the UAP (PASDEP for the water sector) targets to increase the rural and urban population access to water supply to 80% and 92.52% respectively by 2010 and reduce the malfunctioning schemes to 10% (MoWR UAP Document, 2005)*

2.2.1 WATER SECTOR DEVELOPMENT IN ETHIOPIA

As to Yishak, 1993 and quoted by Getachew, 2002, Ethiopia has been trying to supply potable water since about a century (during Menelik II era) but has not achieved much success. Development activities carried out so far in the water sector in Ethiopia in general shows a very low level of performance.

The Major factors for this low performance and the reason for the failure of the country's water resources to significantly contribute to the overall socio-economic development of the country is the absence of a well defined policy till recent time and the lack of huge investment that the sector requires (The FDRE MoWR, 1999). As a result, a large proportion of the population still has not got access to reliable and potable water.

2.2.1.1 Institutional Arrangements

Regarding the institutional arrangement until the 1990s, there were many authorities, agencies and department under the Ministry of Agriculture that were engaged in water supply and irrigation development. The public agencies those were involved in the water sector included the National Water Resources Commission (NWRC), Water Resources Development Agency (WRDA), Ethiopian Water Works Construction Agency (EWWCA),

Ethiopian Valleys Development Studies Authority (EVDSA), Development Projects Studies Authority (DEPSA), Water Supply and Sewerage Authority (WSSA), Water Well Drilling Agency (WWDA), and Irrigation Development Department (IDD). All irrigation was the responsibility of NWRC, and the construction of all water project infrastructures was undertaken by EWWCA or international contractors. WRDA was mainly responsible for the design, implementation and operation of large and medium-scale irrigation projects. In all cases, the end user of these large scale and medium-scale irrigation projects was the Ministry of State Farms. IDD was entrusted with the planning and construction of small-scale irrigation which were mostly utilized by agricultural co-operatives. Feasibility studies and planning of irrigation schemes were undertaken by EVDSA (which took over from VADA, Valleys Development Agency) and DEPSA. WSSA's responsibility was water supply services for urban and rural settlements. There was much duplication of effort among these myriad, autonomous and semi-autonomous agencies and wastage of resources. In the early 1990s, all these agencies were placed under Ministry of Natural Resources and Environmental Protection (MNREP), which ended up making the Ministry a gargantuan Monster (Desalegn, 1999).

With the creation of Ministry of Water Resources (MoWR) in 1994, there is now a unified public agency responsible for water development. Though there was considerable confusion and uncertainty regarding the Ministry's precise responsibilities and spheres of activity on the one hand, and its relationship with the regional authorities on the other hand in earlier period of Ministry's establishment, there is now a clear division of responsibility between MoWR and the relevant authorities in the regional administration in connection with the decentralization of power and responsibility in the water sector up to *ana* level in 2002.

Currently, the Ministry of Water Resources at Federal level, Regional water bureaus, zonal and *ana* water offices and *ganda (Kebele)* water committees and communities are responsible for water related studies, monitoring and evaluation of water sector development programs and projects, water resources and water supply schemes management (See Fig 1).

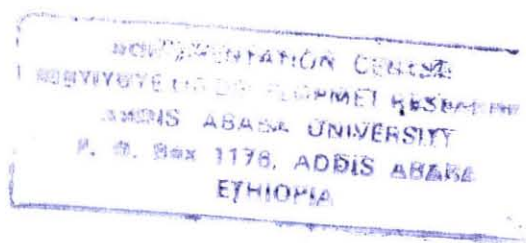
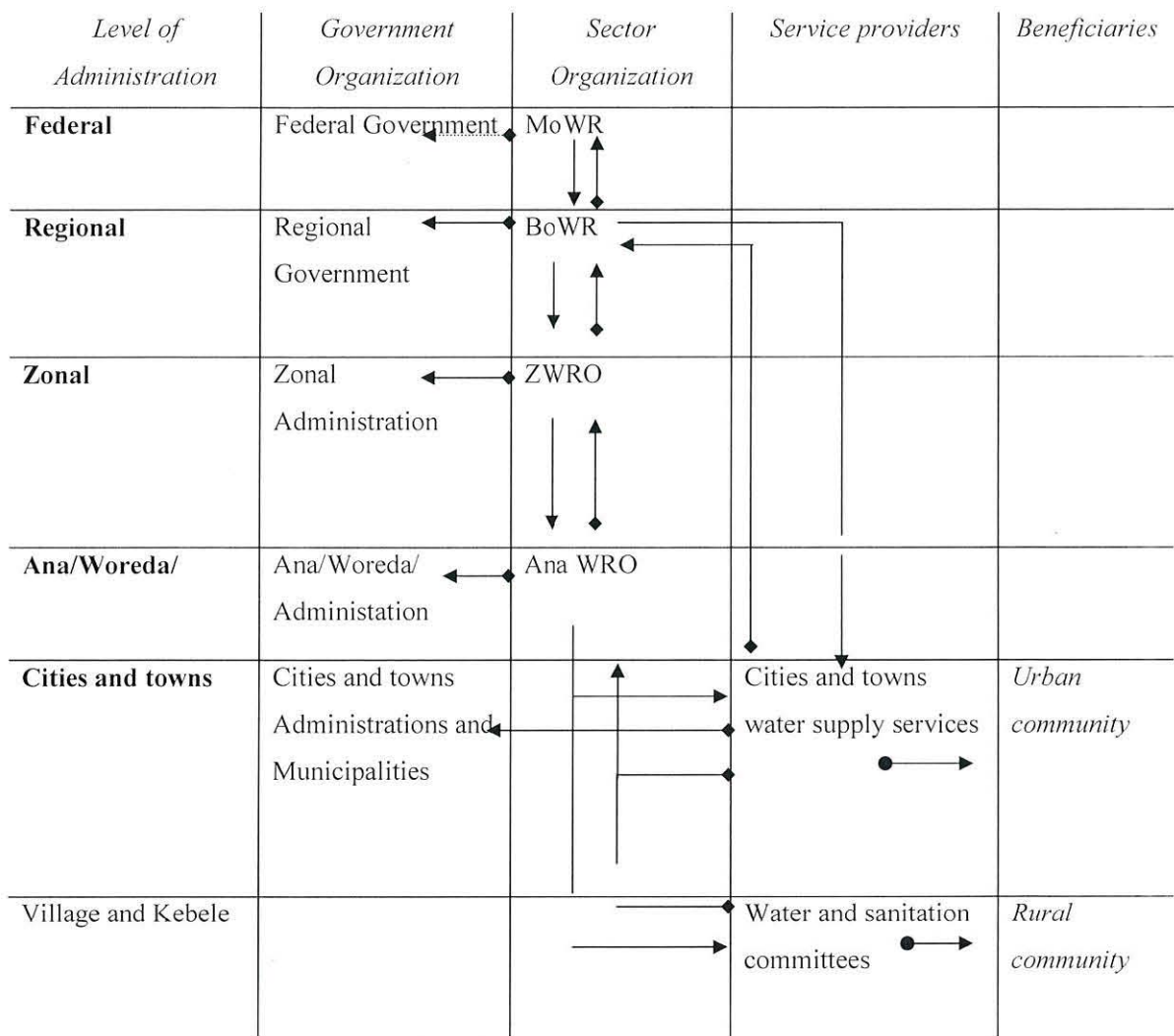


Fig.1 Institutional Arrangement of the Water Sector



Key:
 —————> represents technical support
 ◆————> represents reporting
 ●————> represents service provision

(Tegegn, 2008)



2.2.1.2 Legal Frameworks

For the proper utilization of the nation’s water resources, among other factors a sound water resource policy document, an effective water sector strategy for policy implementation and reliable financial capacity are decisively important. Despite this, until recently, the lack of a comprehensive sector policy and strategy, and the lack of a sector program negatively impacted on the sector development (Desalegn, 1999). The water supply and sanitation policy began in Ethiopia in the mid of 1980s. At that time the general policy of the government was to provide water and sanitation through its own public water sector

institution with the supply side approach. The whole water sector was generally envisaged as a supplier of “free” services which failed to consider the scarcity nature of water resource in the country. It is very lately that the country prepared Water Resource Management Policy (1999) and National Water Strategy (2001) (Tehome, 2007).

Until recent years , the lack of a comprehensive water resources management policy in Ethiopia have so far caused adverse effects among which the following are the major ones to be mentioned (The FDRE MoWR, 1999:ix):

- The lack of a sustainable and reliable water resources management strategy,
- Lack of efficient utilization of water resources,
- Prevalence of unrealistic and unattainable plans and programs,
- Non-objective oriented programs and projects,
- Uncertainties and ambiguities in planning,
- Prevalence of intensive centralism of management that does not focus on rural development,
- Lack of institutional stability,
- Lack of operation and maintenance activities of water schemes, and
- Ad hoc development practices lacking coherent objectives and continuity.

2.2.1.2.1. Water Resources Management Policy

The overall goal of Water Resources Management Policy is to enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available Water Resources of Ethiopia for significant socio-economic development on sustainable basis (MoWR, 1999).

The specific objectives of the water resources management policy are:

1. Development of water resources of the country for economic and social benefits of the people, on equitable and sustainable basis
2. Allocation and apportionment of water based on comprehensive and integrated plans and optimum allocation principles that incorporate efficiency of use, equity of access, and sustainability of the resources.
3. Managing and combating drought as well as other slow on-set disasters through, interalia, efficient allocation, re-distribution, transfer, storage and efficient use of water resources.

4. Combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures.
5. Conserving, protecting and enhancing water resources and the overall aquatic environment on sustainable basis (MoWR, 1999).

2.2.1.2.2 Integrated Water Supply and Sanitation Policy:

In Ethiopia since long time much effort has been made by the user communities, government and non-government organizations to improve the situation of water supply and sanitation in the country. But the achievement so far is still very low even by Sub-Saharan African standards (The FDRE MoWR, 1999:viii). It is believed that one of the major reasons for this low achievement is lack of integration and coordination of these activities. All stakeholders used to operate independently where there are duplications of efforts which exposed the country for much wastage of resources and time. In such a practice there is also no chance of experience sharing to avoid mistakes done in one place and replication & scaling up of good results.

In the area of water supply and sanitation the concept of integration is accepted not only from view point of pulling together the efforts of different stakeholders into single coordinated system, but it is also believed that the fulfillment of one without the other is not much meaningful. In order to create a healthy and productive households, communities, and hygienic society at large, water supply and sanitation facilities need to be fulfilled together.

These days, globally, nationally and locally the importance of integrating water supply and sanitation facilities as well as hygiene education is widely accepted and being practiced. In Ethiopia the following points are the major elements & justifications for the needs of 'Integrated Water Supply and Sanitation Policy (The FDRE MoWR, 1999:27-28):

- Recognize that water supply and sanitation services are inseparable and integrated at all levels through sustainable and coherent framework,
- Promote as far as possible that the development as well as the operation and maintenance of water supply and sanitation systems are carried out at decentralized and appropriate body,
- Ensure efficient and sustainable management of water supply and sanitation system by avoiding fragmented management on one hand and at the same time by avoiding over-centralization of management,

- Create conducive situation for participation of all stakeholders in integrated water supply and sanitation activities and legalize the same,
- Develop national standards, guidelines and procedures on the different aspects of water supply and sanitation, and
- Work in partnership with all concerned for water supply, drainage and wastewater master plans in major urban areas and prepare water supply and sanitation strategies in rural and other urban centers.

2.2.1.2.3 The National Water Strategy

The principal objective of the water resource strategy is to translate the national water resources management policy into action. More specifically, this strategy sets the road map as how to make meaningful contributions towards:

- Improving the living standard and general socio-economic well being of the Ethiopian people.
- Realizing food self-sufficiency and food security in the country.
- Extending water supply and sanitation coverage to large segments of the society, thus achieving improved environmental health conditions.
- Generating additional hydro-power.
- Enhancing the contribution of water resources in attaining national development priorities.
- Promoting the principles of integrated water resources management (MoWR, 2001).

2.2.1.3. The Water Sector Development Program (WSDP)

The next step which was found to be essential to put in action the prepared water resources management policy and the national water strategy was the preparation of the Water sector Development Program (WSDP). The WSDP defines concrete interventions in terms of projects and programs to achieve the water policy objectives using the guidelines set under the national strategy (FDRE MoWR, 2002).

The Water Sector Development Program is planned for 15 years period lasting from 2002 to 2016 which is again sub-divided into three 5-years period, i.e. the first five years (2002 - 2006), the second five years (2007 - 2011) and the last five years (2012 - 2016) in order to fit with the existing practice of 5-years overall government development plans at Federal & Regional levels (FDRE MoWR, 2002:iv). However, though it is sub-divided into three 5-

years periods, it doesn't correspond with existing federal & regional development plan periods. For instance the existing PASDEP program extends from 2005/06 - 2009/10 and none of the three 5-years development plans of WSDP coincide with it.

The major feature of WSDP is the inclusion of priority projects from river basins master-plan studies, and those identified by different stakeholders, especially those prioritized by regional governments. It provides an inventory of projects to be implemented over the period of 15 years (2002 - 2016) with required investment cost (FDRE MoWR, 2002).

Enhancing the number of people accessing to safe drinking water is one of the major development targets of WSDP. At base year (2001) of the development program water supply coverage of the country was about 30.9%. It was planned to reach 76% at the end of the program period (2016). Specifically looking into the program target, it was planned to increase the rural water supply coverage from 23% to 71% and urban water supply coverage from 74% to 98% by the end of the program period (FDRE MoWR, 2002:108).

2.2.1.4 Universal Access Program (UAP)

Being the Water Sector Development Program planned for 15 years (2002 - 2016) is operational; MoWR has formulated a more ambitious plan, named Universal Access Program (UAP) for water supply and sanitation component of WSDP. The core objective of UAP is to access water supply service to 98% and sanitation services to 100% of the rural population and 100% access of both water supply and sanitation services for urban population within planning horizon of 7 years (2005/2006 – 2011/2012). The idea of UAP was conceived starting from 2004 based on success stories of Community Led Total Sanitation, South Africa's experiences of setting appropriate and achievable service standards and as well as the Government of Ethiopia's political commitment to end poverty as set out in A Plan for Accelerated and Sustainable Development to End Poverty (Universal Access Program, 2006).

At the base year of the UAP, the national water supply coverage was about 35% and sanitation coverage is only 17.45%. The national sanitation coverage was doubled from 8% due to remarkable activities done in Southern Nations and Nationalities Peoples Region within a couple of years (Universal Access Program, 2006:9).

i) Enabling Environment for UAP Implementation:

The following points were identified as enabling environment for UAP implementation in Ethiopia (Universal Access Program, 2006:10):

- The existence of important policy documents like Water Resources Management Policy, National Water Sector Strategy, Water Sector Development Program, Water Resources Management Rules and Regulations, National Water Supply and Sanitation Master Plan, Millennium Development Goals Needs Assessments and others,
- Government policy of decentralization and the capacity of woredas being built in all respects (human power, budget, infrastructure & other logistics),
- Establishment of different technical and vocational training centres to fill the existing human power gaps,
- Preparation of different working manuals that will help as a guide for implementation of different water supply and sanitation technology options,
- Establishment of the Water Resources Development Fund that aims at enabling regions to practice the cost recovery principle for urban water supply and to enable them to obtain adequate loans to undertake design improvements and construction works.
- The Water Resources Development Fund providing loans to water utilities from the finance it obtains from international institutions so as to enable the water utilities to carry out upgrading works, and the like.

ii) Physical Targets of UAP

Quite a large number of physical targets were planned to be achieved within seven years planning horizon of UAP (See Table 2.1).

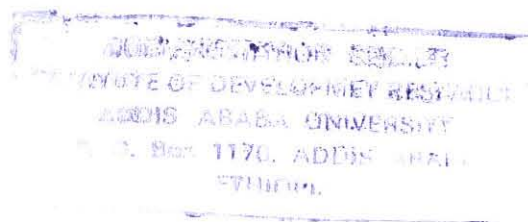


Table 2.1: Number & Types of Schemes to be built to raise rural water supply coverage to 98%

S/ N	Type of Water Scheme	Amhara	B/Gumuz	Gamb	Harreri	Tigray	Oromia	South	Afar	Somali	D/ Dawra	Total
1	Hand dug well (community) Av. depth 10m	33,239	195	146	139	1,677	30,218	3,410	278	414	26	69,745
2	Modern hand dug well av. depth 15m	16,622	583	257	98	2,409	11,820	3,224	1,585	1,819	151	38,568
3	Spring on the spot	1,459	86	87		1,345	1,763	9,685				14,426
4	Spring development (with motor or gravity system)	210										210
5	Motor driven stream						90					90
6	Gravity system stream						325					325
7	Medium stream							438				438
8	Shallow well (with hand pump)	4,275	623	160		3602	5,235	4516	258	553	25	19,247
9	Shallow well (with motor pump)	14					1,557					1,570
10	Deep well	680		3	28	113	1012	676	59	410	6	2986
11	Others (treated surface water)	18							1	1		20
12	Large spring 1							1				1
13	Large spring 2							1				1
14	Shallow well (with solar pump)					3	33					36
15	Shallow well (wind mill)					1	18					18
16	Cistern (with wall)					57						57
17	Pond (with hand pump)						565					565
18	Cistern (with plastic lining)								303	3,882	29	721
	Total	56,117	1,488	653	265	9,208	52,635	21,952	2,484	3,586	236	149,024

Source: Universal Access Program for Water Supply and Sanitation Services: 2006 - 2012, (2006:12)

As far as it is technically feasible /water is available and it is potable/ schemes with low cost and simple technologies for operation and maintenance are prioritized under the program. Accordingly, hand dug well fitted with hand pump, shallow well fitted with hand pump and spring on spot are the mainly proposed scheme types.

At the end of the program period about 13, 388,678 households will access household latrine. The construction of these facilities is estimated to cost about Birr 669,433,876 and this will increase the sanitation coverage in terms of latrine service to 100%. With regard to sanitation, the aforementioned budget is allocated for San Plats distribution and hygiene

education activities. Apart from these, different activities were also planned to raise urban water supply coverage to 100% by UAP.

Possible sources of finance for the program implementation are indicated in the planning document of UAP. World Bank, AfDB, UNICEF, DFID, UNDP, JICA, Finnida, EU- Water Facility & European Investment Bank, BADEA, Non-Government Organizations, Federal & Regional Governments and as well as Community matching funds were the possible sources of finance. During the preparation of the document, the required funds were secured from some donors, Federal & regional governments have committed themselves and the remaining gaps were planned to be searched in the course of program's implementation.

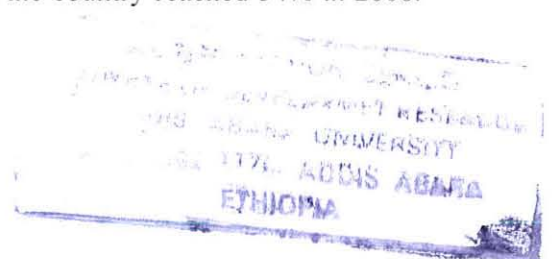
2.2.1.5 Organizational Structure of WSS Sector

According to Desalegn, 1999, though decentralization is critical to Ethiopia's development, the transfer of responsibilities to regions and *anas* has compounded the weak institutional capacity. Further aggravating this problem was the poor coordination between the various institutions at federal and regional levels, and with NGOs and donors.

The current organizational structure of the water sector comprises the Ministry of Water Resources at Federal level, Regional Water Resource Bureaus, Zonal and Ana Water Resource Offices, Cities and Towns Water supply services and WASH Committee and communities at *ganda* (kebele) level. (See fig 1).

2.2.2. PAST ACHIEVEMENTS AND FAILURES OF WATER SUPPLY AND SANITATION SUB-SECTOR

Though the definition of water supply coverage is controversial and different by various stakeholders, the coverage for water supply estimated at 19% in 1990 has increased to 30% in 2000. The sustainable Development and Poverty Reduction Program (SDPRP) appraisal report of June 2003 estimated the water supply coverage as 34%. The raw data from the MoWR Planning Department also indicated that the coverage estimated for 2004 is about 36.7%. Other estimates are also indicated in Table 2.2. Though complete and accurate data is not available, these figures are good indicators of the trend and the current status as well (Teshome, 2007). The MoWR's Water Supply and Sanitation UAP performance review report in 2008 revealed that the water supply coverage of the country reached 54% in 2008.



The latest report from Ministry of Water Resources also depicted that the national water supply coverage reached 62.2% by July 2009.

Table 2.2: Estimates of Water Supply Coverage in Ethiopia.

Year	Rural	Urban	National
<i>I. MoWR (Planning Department Data)</i>			
1990	11	70	19
1994	14.7	87	22.5
1995	15	87	23
2000	17.1	74.4	30.8
2003	24	82	33.7
2004	24.2	85	36.7
<i>II. SDPRP Appraisal Report (2003)</i>			
	25	85	34
<i>III. Millennium Development Goals – MoFED and UNCT 2004 (2000)</i>			
	24	72	30

(Teshome, 2007).

Table 2.3: The Trend of Water Supply Access in Oromia (2004/05-2008/09)

Year	Planned Water Supply Access (%)			Water Supply Access Achieved (%)			Beneficiaries
	Rural	Urban	Rural + Urban	Rural	Urban	Rural + Urban	
2004/05	39.2	85.7	44.7	36.2	83.9	42.85	11,052,714
2005/06	42.4	85.1	48.1	40.2	87.6	46.7	12,588,538
2006/07	48.2	86.3	53.6	44.63	90.4	50.93	14,118,739
2007/08	54	88	59.1	49.75	92.7	55.91	15,934,300
2008/09	60	90	64.5	54.6	94	59.8	17,430,629
Total population of Oromia by 2009							29,593,598

Source: OBoWR, 2009

From the above table, the total increment in water supply coverage in the past four years is found to be 17% which revealed the average annual increment of water supply coverage in the past four years 4.25%. But as to the UAP target, it was planned to increase the water supply coverage by 9% and above annually to attain the UAP target of 100% by 2012.

Among the main reasons given for the slow pace of progress in water supply services in the 1980s, the following are noteworthy and are still relevant today: the lack of comprehensive water legislation (until recently); inadequate investment resources; and the lack of national water tariff policy. Moreover, there has been a strong urban bias in water supply programs, and the rural areas have suffered as a result. On the other hand, the main reason for the poor record of sustainability of existing schemes in the rural areas is the absence of beneficiary participation and community management (Desalegn, 1999).

The governments' involvement in water development in the past has suffered from many shortcomings. There is first of all unnecessary red-tape. Plans are not executed in time, and projects take much too long to implement. Secondly, there has been a lack of technical competence on the part of the implementing agencies. Thirdly, there has been a lack of water policy and strategy, and guidelines on water development schemes and their management have been either unavailable or not clear and comprehensive. Fourthly, as has been noted above, the government has frequently used a top-down approach, and has not made efforts to win the confidence of the direct stakeholders (www.africa.upenn.edu/eue).

2.2.3. WATER SUPPLY CURRENT STATUS

Although the Federal government has articulated sector policies and strategies, complemented by a water sector development program and water supply and sanitation program, water supply and sanitation coverage is still found very low. It is even much below the average coverage of Sub-Sahara African countries. The major challenge now is their implementation. However, the weak institutional capacity in sector institutions at the federal government, local government institutions and the communities continues to pose a significant constraint for the sub-sector development. This has limited the planning, implementation and monitoring capacity at Federal, Regional and *ana* levels, while low private sector participation has resulted in limited competition and high implementation costs of water and sanitation projects (Teshome, 2007).

The water supply coverage estimated at 19% in 1990 has increased to 30% in 2000. At the base year of the water sector development program (2001), water supply coverage of the country was about 30.9% while the rural water supply coverage of the country was estimated at 23% (MoWR WSDP, 2002).

Similarly, at the base year of the Water Supply and Sanitation Universal Access Program (2005), the national water supply coverage has been estimated at 34% while the sanitation coverage was only 17.45%. The sanitation coverage was doubled from 8% due to remarkable activities done in Southern Nations, Nationalities and Peoples Region within a couple of years (Universal Access Program, 2006:9).

According to the Water Supply and Sanitation UAP review report of 2008, the national water supply coverage increased from 34% (at 2004/05) to 54% at 2007/08, i.e. there is an increment of about 20% coverage during the 3 years period. This shows that the coverage increased with an annual average rate of about 6.67% against the planned 9% and above annual average increment. In the UAP it was planned to achieve a coverage target of 64 % at the end of 2007/08, in which the incremental coverage would have been 30% within the first three years time of the program implementation.

2.2.4. CHALLENGES IN WATER SUPPLY DEVELOPMENT IN RURAL ETHIOPIA

MoWR in its UAP review document (2008) reported that in rural areas, only about 54% of the people had access to safe water. The difficulty in finding appropriate water sources coupled with scattered settlement patterns and nomadic lifestyles significantly influence the opportunity to increase and sustain access to water for the rural population.

Adequate quantities of water are required for healthy living: for drinking, cooking and washing. The world health organization recommends that the minimum daily amount of water per person should be 27 liters. Many people, however, manage on far less than 27 liters a day. The quantity of water people use is partly related to how much is conveniently available:

A survey during the dry season in the community of Guwa Meda in Wollo, Ethiopia showed that water collectors, on average, collected only five liters of water per day for each person in their household. They spent about 30 minutes walking to and from their source, a protected spring. Additional time was spent queuing at the source because most people preferred to collect water at a particular time, early in the morning or in the after noon, rather than throughout the day. If water sources are at a long distance from the village, this can significantly restrict the amount of water it is possible to carry home. In such a

situation, a primary objective of a water programme is to develop sources, or pipe water, closer to the point of use (Jan Davies et.al, 1993).

Collecting water is only one of the several activities women & children have to carry out during the day. They may be restricted to collecting water at certain times of the day; therefore, a high demand on a supply can be expected at preferred collection times. A potential problem of wells with insufficient yield is that they can become dry for short periods at these peak collection times. People then have to wait for the well to recharge.

The continued functioning of a water supply depends upon a reliable source and a reliable system of obtaining water from the source. The reliability of a source is often determined by seasonal changes. Some wells and springs may fail towards the end of the dry season owing to a drop in the water table. This is the time when water is needed most but when supplies are least reliable.

A water program in Wolayta, Ethiopia, conducted a survey of 100 hand dug wells in the dry season. The result showed that 60 of the wells dried up for a period of time during each day causing queuing problems, & five of the wells were completely dry (Jan Davies et.al, 1993).

The study based on the actual conditions of the 40 typical schemes surveyed in the four sample regions, i.e. Amhara, Benshangul, Oromiya and Southern Regions has proved that the problems of rural water supply reliability fall under: lack of finance, lack of skilled manpower, inadequate stakeholders participation, lack of co-ordination amongst stakeholders, lack of well institutionalized set up, appropriate regulatory framework and poor infrastructure. The study further indicates that the software and hardware aspects of rural water supply are not treated in a balanced manner. This has an adverse effect as population is increasing at 3% while sanitation is at a virtually non-existent level. The study also highlights that social work incorporating sanitation awareness, birth control, gender, community ownership and management that addresses these problems at grass roots level shall soon be launched thereby ensuring the reliability of access to safe water sources. Neglecting software aspects is putting a snare that thwart the relentless effort of some regions that have partially succeeded in constructing a relatively larger number of schemes (Getachew, 2002).

According to MoFED and UNDP MDG Need Assessment Report (2005), Ethiopia like other Sub-Saharan countries faces a number of challenges in improving water supply coverage. The major constraint is lack of adequate financing. While increasing funding to the sector is proved to be difficult in many countries, the use of available funds tends to be inefficient and potential sources of funding from system users remains largely under-utilized. Most systems and facilities are badly designed, poorly constructed and utilize technologies that are not appropriate. Imported technologies and equipments may be inappropriate in many applications and importing spare parts is frequently expensive and difficult. Condition with respect to access to safe water in urban areas is far better in terms of coverage, with about 85% having access to safe water sources. However, the reliability of supply is quite poor, both in terms of quantity and frequency of breakdowns (MoFED and UNDP, 2005).

In rural areas, poor maintenance appears to be a common problem. A number of issues that need to be addressed in this regard are (MoFED and UNDP, 2005):

- I. Inadequate emphasis on promotion and participatory and informed demand articulation during the planning stage results in poor technology choices and a lack of community ownership of the scheme.
- II. Poor user fee collection, both due to inadequate management and up-front clarity of rules results in lack of resources to undertake timely maintenance of assets.
- III. Lack of or poorly developed supply chains (in relation to technology choices) that make access to spare parts difficult and unduly costly.
- IV. Inadequate technical support and
- V. Lack of access to credit for bridge finance for sudden or major repairs and augmentation.

Finally, this report summarized challenges and issues in the water supply sector as:
i) Sustainability ii) Capacity and iii) Finance.

The UAP three years' (2005/06 – 2007/08) review report prepared by MoWR has also revealed that the national water supply and sanitation performance in these years has lagged behind the intended UAP targets. Problems indicated for the low performance of the program were:

- The strength of the program management is weak at all levels and the implementation capacity of the sector in terms of human resources is also weak,

- The UAP plan at the national and regional levels is not cascaded down to Zone, Woreda and Kebele levels. Thus, there are no UAP plans at these levels in compliance with the UAP targets,
- The UAP is not well advocated and promoted to all stakeholders of the sub-sector at all levels (from federal to the community levels) and their support not sufficiently utilized for the implementation,
- Regions gave low priorities to low cost technologies in their implementation which would have served more people with the same expenditures,
- The government budget allocation to the program implementation is relatively low in some regions and donors fund disbursement is slow to use it efficiently.

2.3 CONCEPTUAL FRAMEWORK FOR EFFECTIVE IMPLEMENTATION OF WATER SUPPLY AND SANITATION STRATEGIC PLAN

From the literature reviewed and discussed in detail, the author has summarized the following key points and formulated a conceptual framework as stipulated in Fig 2.

First of all, the strategic plan to be effective, the planned physical facilities of water supply schemes need to be constructed timely, the intended number of users should be accessed to safe and adequate water and the water supply and sanitation coverage targets should be attained within the planned period. There should also be coordinated active stakeholders' involvement in place at local levels. The coordinated effort of sector offices at *Ana* level, user communities, NGOs and donors and local service providers is very decisive for the successful implementation of the strategic plan.

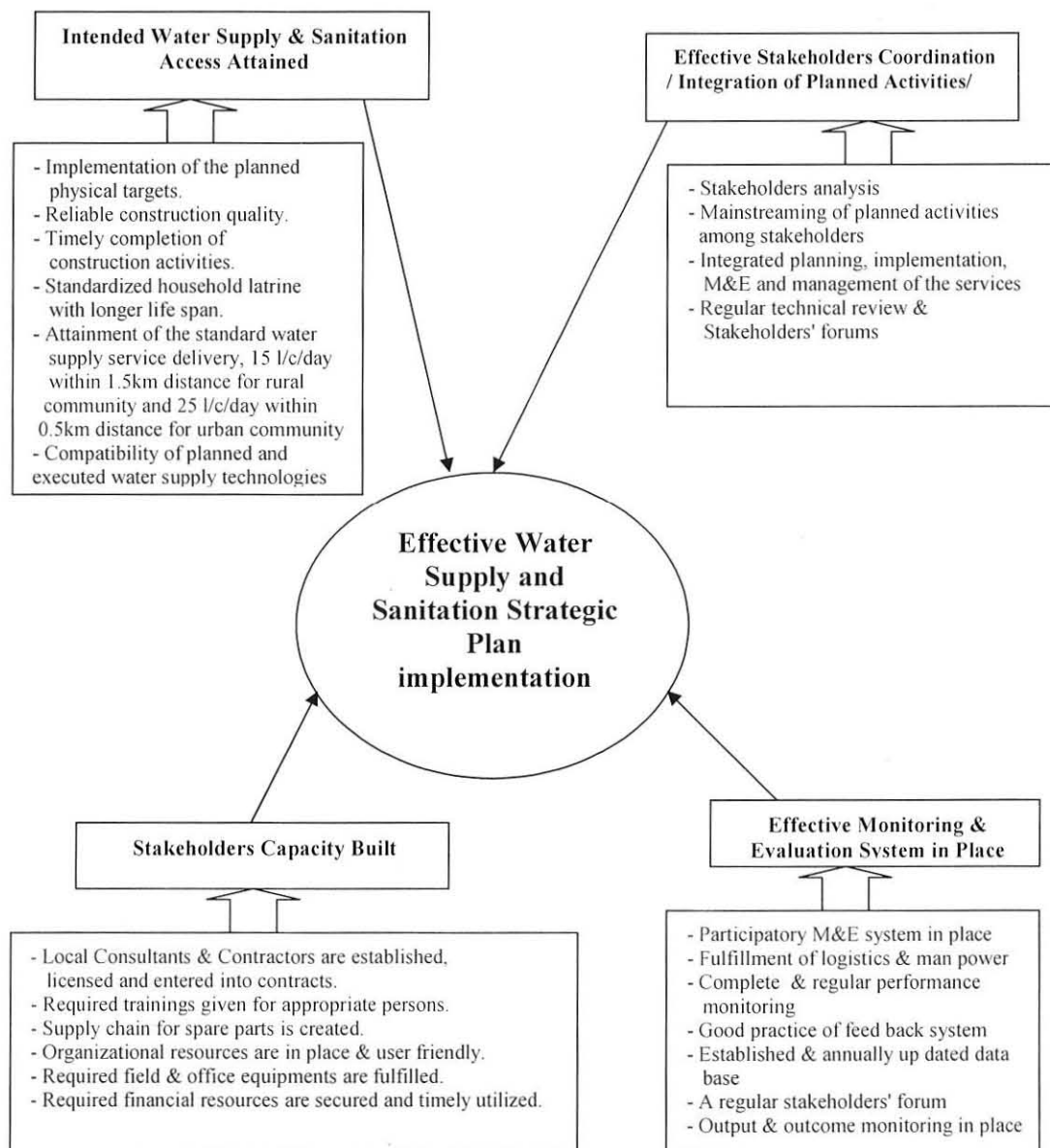
On the other hand, participatory M&E system contributes much for effective implementation of the strategic plan. In order to do this, Tole *Ana* need to be capacitated with the required manpower and logistics. There should be performance monitoring of the strategic plan; and performance monitoring need to include all planned activities and should be done on regular basis without interruption. Apart from these, the *Ana* need to undertake output monitoring to provide immediate feedback on performance, and decisions based on findings that can be built into next annual plan. Further more, outcome monitoring need to be done to suggest possible strategic changes.

There should also be compatibility of planned and executed water supply technology options as per identified and selected by the planning team based on the potential water resources available so as to ensure efficient capital resources utilization. The water supply schemes to be constructed should also meet the national universal access program standards of water supply

service delivery, supplying 15 liters per capita per day within 1.5 km distances for the rural community.

The implementation capacity of the water sector especially at *Ana* level was very weak both in the public and private sector. Hence, building the sector's human resources, material resources and financial resources at *Ana* level are among the critical issues need to be addressed for the effective implementation of the five years strategic plan.

Fig 2: Conceptual Framework of Effective Water Supply and Sanitation Strategic Plan Implementation:



Source: Adapted from Getachew (2002), Tegegn (2008) and Samuel (2009)

CHAPTER THREE

3. DESCRIPTION OF THE STUDY AREA AND METHODOLOGY

3.1 DESCRIPTION OF THE STUDY AREA

Tole *Ana* is one of the eleven *Anas* of South – West Shewa Zone of Oromia region. The *Ana*'s capital Bantu town is found in South-West direction from Addis Ababa at about 83kms of which the first 61 km is along A.A.- Jimma highway while the last 22km is all weather gravel road leading from Asgori Town to Bantu departing towards the South. Bantu Town is 75 km far from the zonal capital Wolisso.

The *Ana*'s total population projected for 2009 is 68,223 of which 34,474 (50.53%) are males while 33,749 (49.47%) are females (CSA, 2007). With respect to the proportion of rural-urban population of the *Ana*, the rural population accounts for 65,158 (95.5%) while the urban population is 3,065 (4.5%). Tole *Ana* has an area coverage of 410.2 km² (OBoFED, 2009).

Tole *Ana* comprises 24 rural and 1 urban *gandas* (kebeles). It shares its boundary with Becho *Ana* in the West, Kersa Malima *Ana* in the East, Sodo Dachi *Ana* in the South and South-East, Seden Soddo *Ana* in the South-West, Ilu *Ana* in North-West and Sebeta Awas *Ana* in the North-East.

Several perennial rivers and streams flow through the *ana* namely Gamegna, Shenkora, Watira, Teji and Awash those serve as water sources for domestic consumption for communities who are not yet accessed to potable water sources and for their livestock watering.

Poor infrastructural facilities, poor extension services, shortage of health institutions, and lack of potable water supply, electric light service and fuel station are some of the major problems in the *Ana*. On the other hand, it has large potentials of water resources and large plain area which is conducive for development.

3.1.1 TOLE ANA WATER SUPPLY AND SANITATION STRATEGIC PLAN

Tole *Ana* was one of the *Anas* with very low safe water and sanitation coverage in South-west Shewa zone during the five years strategic plan preparation. At the base year of the strategic plan (2004/05), from the total 57,702 population of the *Ana*, only 6% of them were accessed to potable water supply. The sample survey conducted in the *Ana* during the

strategic plan preparation and reports from respective *gandas* evidenced that the overall coverage of latrine in the rural Tole stands at 1.78% (institutions and household owned latrines combined) while at the households level the coverage remains as low as 1.37%.

According to the water supply and sanitation strategic planning team's investigation, the major factors contributing to this desperate rural water supply and sanitation situation were lack of finance for constructing facilities, lack of skilled human and organizational resources at both *Ana* and community levels, limited number or absence of private service providers and above all the past development approach pursued that puts the government as a provider.

At operational levels, the main problems identified with the existing water schemes were related to maintenance and operation, mainly breakage, absence of spare parts suppliers, lack of the required minimal skills and absence of thorough follow-up.

On the other hand, based on the *Ana's* good potential water resource, the communities experience in collective action and willingness to contribute, the commitment of the *Ana* staff and AWT, combined with the rural water supply and sanitation plan strategy which is based on demand responsive approach with ultimate goal of enabling the community own & manage water supply and sanitation schemes, NGOs and donors support and the supportive decentralization of power and responsibility up to *Ana* levels, Tole *Ana* was determined to raise the coverage of both rural water supply and sanitation coverage to 100% within the five years strategic plan period.

In order to realize this over the five years strategic plan period, 133 water supply schemes benefiting 54,267 people together with a number of improved latrine demonstrations were planned to be undertaken through organizing and building the capacity of stakeholders particularly the community, local service providers and *Ana* staff so as to ensure effectiveness and sustainability.

For the construction of new water supply projects and other operation costs, the financial resources required amounts nearly 18.7 million Birr. The projects' construction cost constitutes over 90% of the total cost estimated to undertake the strategic plan and to achieve the expected results by the end of the strategic plan period, mid 2010.

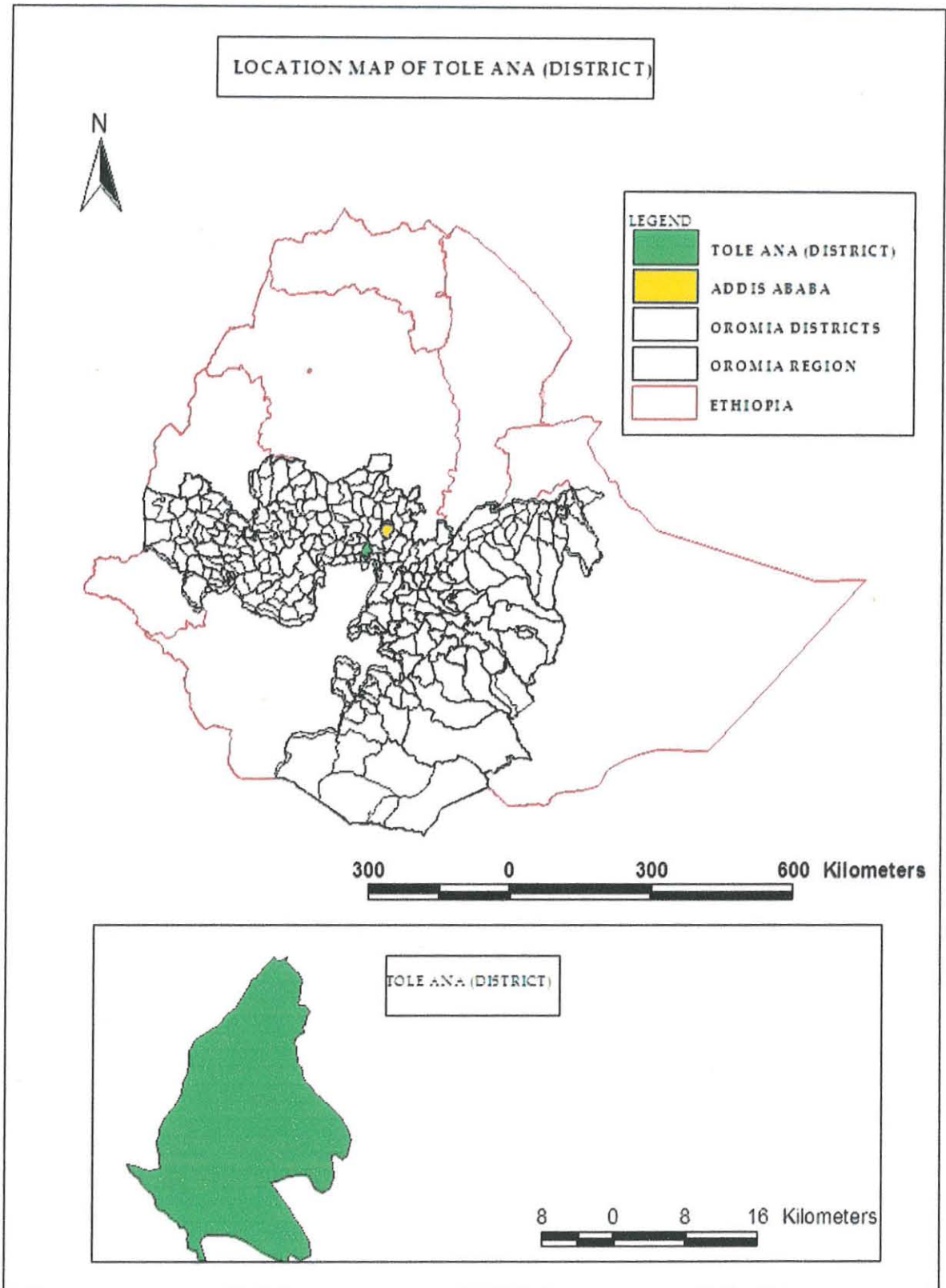
The four result areas expected from the five years' strategic plan were: Community ownership and management of safe and sustainable water schemes (133), Construction of 133 water schemes, improved latrines owned, managed and maintained by HHs, improved awareness on water supply and sanitation and strengthened capacity of LSPs and *Ana* staff.

Table 2.6 Activity and Budget Plan for the Five Years' Water Supply and Sanitation Strategic Plan of Tole Ana.

Description	Unit	QTY	Yearly distribution of quantity					Yearly distributed Budget required in birr				
			1998	1999	2000	2001	2002	1998	1999	2000	2001	2002
Construction												
Study and design	Scheme	133	18	20	29	45	21	22,500	25,000	36,250	56,250	26,250
Spring on spot	No.	5	1	1	1	2	0	12,000	13,800	15,870	36,501	0
Hand dug well +Hand pump	No.	22	3	1	7	7	4	75,000	28,750	232,138	266,958	175,429.60
Shallow well + Hand pump	No.	98	13	17	19	33	16	1,105,000	1,661,750	2,135,837.50	4,266,054.40	2,378,648.50
Deep well + Motorized pump	No.	8	1	1	2	3	1	550,000	632,500	1,454,744	2,509,433.40	961,949.50
Rehabilitation of Non-functional schemes	No.	3	3	0	0	0	0	25,500	0	0	0	0
<i>Total budget required for constructing new schemes and for rehabilitation works</i>								1,790,000	2,361,800	3,874,839.50	7,135,196.80	3,542,277.60
Total Budget required for the five years								18,704,114				

Source: TASP, 2005

Fig 3. Location Map of Tole Ana



3.2 METHODOLOGY OF THE STUDY

3.2.1 RESEARCH DESIGN:

In terms of its approach, this study belongs to a case study research which focuses on intensive investigation of water supply and sanitation strategic plan achievements and challenges in the specific study *ana* Tole. In terms of its purpose, this research belongs to evaluative applied research which is aimed to evaluate the past achievements and identify challenges those hindered the plan performance and finally come up with important recommendations to enhance future water sector development interventions.

3.2.2 DATA SOURCES AND METHODS OF DATA COLLECTION

Relevant data for this study, from both primary & secondary sources have been collected, analyzed and interpreted in this study using different research tools.

3.2.2.1 Primary data.

Primary data have been collected through formal household survey, key informants' interview and observation methods.

a) Household survey:

Household survey is one of the research tools which have been used for quantitative primary data collection depicting the achievements attained so far by the five years strategic plan of Tole Ana. Formal household survey has been conducted on sample households selected from user communities of water supply schemes constructed by the five years strategic plan since 2005/06 using structured questionnaire. For conducting household survey, from 24 water supply schemes constructed and started operation since 2005/06, six schemes (25%) were selected using stratified proportionate random sampling. Hence, 2 deep wells, 3 shallow wells and 1 hand dug well schemes were selected for the household survey. From each of these water supply schemes, 10 households were randomly selected and included in the household survey embracing a total of 60 households as sample households. Before going into the household survey, a half day orientation was provided for six interviewers selected from the six water supply schemes user communities on the questionnaire prepared for this purpose and on the intended aim of the research work. All interviewers are rural

development facilitators who have college diploma and significant experience on working with the respective local communities.

Accordingly, the necessary and relevant data depicting the accessibility of constructed water supply services within 1.5km for the rural user communities, daily service delivery hours of the water supply schemes, daily per-capita water consumption of the user people, tariff setting procedures, tariff types and tariff rates of the water supply services, affordability of water tariff by user community and adequacy of the water supply services for the user community and other related data have been collected.

b) Observation method: Observation method has been also used to assess physically the constructed water schemes and sanitation facilities, their construction quality and their functionality (status).

c) Key informants' Interview (KII): Key informants are among the best sources of detail information in qualitative type of researches like this one. KII was made with individuals of both sexes as conditions permitted from kebele representatives, community elders, local service providers (LSPs), Ana (woreda) staffs (Administration, Water, Health, Education, Finance and Economic Development office heads or representatives and experts), zonal water resources office head and higher professionals, regional Bureaus' professionals and officials and NGO program managers and coordinators.

Through KII, primary data relevant to the level of water supply and sanitation service improvement (in terms of coverage, number of users and constructed improved water supply and sanitation schemes), capacity building activities (in terms of hiring and training human power, materials provision, budget allocation), construction quality of water supply and sanitation infrastructures, completion of projects within the planned timeframe, participation and coordination issues of stakeholders have been collected.

3.2.2 2 Secondary data

Secondary data related to the sector policies, strategies, development programs, achievements and challenges of water supply and sanitation development plans' and programs' implementation in the country, in Oromia Region and in Tole *Ana* which are found relevant to the research work have been collected. The major secondary data were collected from literature review, journals, internet web sites, regional, zonal and *ana* water

offices (strategic plans, inventories and reports) and from the MoWR (national sector policies, strategies and sector development program documents).

3.2.3 SAMPLING TECHNIQUE:

Among 20 administrative zones of Oromia Region, South-West Shewa zone is purposively selected. The reason for selecting it is that though it is one of the zones which have good accessibility and opportunity for development for its proximity to the national capital Addis Ababa where different NGOs, contractors, suppliers etc are located, but surprisingly it was found to be one of the zones in Oromia Region with minimal water supply coverage during the launch of the water supply and sanitation UAP in 2004/05.

Tole *Ana* was found to be one among the least water supply covered *anas* (only 6%) during the preparation of the regional water supply and sanitation five years strategic plan in 2004/05. Hence, it is deliberately selected for the study to examine the extent to which the water supply and sanitation universal access plan targets could be achieved having started from this minimal coverage to attain 100% by the mid of 2010 as to the *Ana*.

Water supply schemes constructed from the commencement of the five years strategic plan onwards are stratified into four groups based on the existing different water supply technology options constructed under the program (7 Deep well, 22 shallow wells, 2 hand-dug wells and 1 on spot spring (incomplete)). Among these constructed water supply technology options, 25% of them comprising 2 deep wells, 3 shallow and 1 hand dug well schemes have been selected by proportionate random sampling technique. But the incomplete spring on spot water source was omitted from the four strata since it is not yet started service due to construction defects. 10 households (about 15% of the user households) from each water supply scheme user communities have been selected for the household survey by random sampling technique accounting a total of 60 households from the six water supply schemes' user communities.

3.2.4 METHOD OF DATA ANALYSIS

Upon successful completion of the data collection work, the collected data were edited and coded. Quantitative data were entered in to SPSS software & then analyzed by quantitative data analysis method using descriptive statistics such as percentage, ratios, mean and ranges.

Quantitative data analyzed using descriptive statistics include the number of users benefited, the change in coverage and number of schemes constructed, average distance of schemes from user community, per capita water consumption of user communities, service delivery hours of water supply schemes, time elapsed for waiting turns and water tariffs of sample water supply schemes.

The qualitative data gathered through KII and field observations such as construction quality, adequacy of water services, constancy of service delivery, affordability of water tariffs capacity building and stakeholders' coordination related information have been validated using triangulation method by cross-checking the same data from different sources and/or using different data collection tools.



CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1 RESULTS AND DISCUSSIONS BASED ON DATA FOR TOLE ANA.

4.1.1 ACHIEVEMENTS OF WATER SUPPLY AND SANITATION STRATEGIC PLAN IMPLEMENTATION IN TOLE ANA.

Water supply and sanitation UAP is basically a national program set as to the country and then shared among regions based on their water resources potential, implementing capacity and the expected user community to be served. During the initial preparation of the program, relevant professionals were involved from each region and contributed their share in identifying strategies, setting national targets and selecting priority technology options compatible with their region for the attainment of the national UAP targets within the specified program period. Then, regions have prepared their own Water Supply and Sanitation UAP with their own regional targets and water supply and sanitation intervention options in compatible with the national targets and strategies.

As to the national water supply and sanitation UAP target, it was planned to increase the national water supply coverage from 35% (2004/2005 base year coverage) to 98% by the end of 2012 by increasing the number of population accessed to potable water supply from 21,667,122 to 72,565,412 by year 2012 by additionally supplying 50,898,290 populations with potable water. Likewise, as to Oromia region, it was planned to increase the regional water supply coverage from 38% in 2004/2005 to 100% by the end of 2012 by increasing the number of population accessed to potable water from 8,783,088 to 28, 27,927 additionally supplying 19,450,839 population with potable water (MoWR UAP, 2005).

Oromia Water Resources Bureau, as part of the regional water supply and sanitation UAP, has prepared its five years strategic plan (PASDEP) for the period of 2005/2006 -2009/2010 which is used as guiding plan for the zones and *anas* five years' strategic plan preparation. As a result, the UAP for water supply and sanitation prepared as to the region is not well communicated and shared up to zonal and *ana* levels but it is rather the regional five years strategic plan that was shared among the zones and *anas*. Hence, the zonal and *ana* water supply and sanitation five years strategic plan targets were not set in accordance with and for the attainment of the regional UAP targets but it is on the basis of the regional five years strategic plan targets.

Tole *Ana*, being one of the 275 *Anas* (259 rural and 16 urban *Anas*) in the region, has prepared its five years strategic plan for the years 2005/2006 – 2009/2010 with the target of attaining 100% water supply access and 100% improved sanitation. So as to attain this target, a total of 133 water supply schemes were planned for construction in the five years plan period comprising 5 springs on spot, 22 hand-dug wells, 98 shallow wells and 8 deep wells in the 24 rural *gandas* of Tole *Ana* (TASP, 2005).

As to the five years strategic plan, universal access of water supply (100% population access to water supply) was planned to be achieved from the base year (2004/05) coverage of 6% through the construction of 133 new water supply schemes and rehabilitation of three non-functional existing schemes. From these newly planned water supply schemes, additional 49,012 rural people are expected to get access to potable water supply. All households (14,151) of the *Ana* are also planned to be accessed to improved sanitation (i.e to increase from 1.37% household pit latrine coverage to 100% within the five years time). Among the 133 new water supply schemes planned to be constructed, 27 of them (20.3%) were low cost and easily manageable water supply technologies options comprising 5 springs on spot and 22 hand-dug wells; 98 schemes (73.68%) were medium scale shallow wells while only 8 schemes (6 %) were high cost and complex technology options (8 deep wells with motorized pump and with distribution system). The average base year prices of these technology options were estimated at 12,000, 25,000, 85,000 and 550, 000 Birr for spring on spot, hand dug well, shallow well and motorized deep well with distribution system respectively (TASP, 2005).

4.1.1.1 Water Supply Component Achievements.

i) Achievements in terms of new water supply schemes construction

In the first four years of the strategic plan (2005/2006 – 2008/2009), 112 water supply schemes comprising 5 springs on spot, 18 hand dug wells with hand pump, 82 shallow wells with hand pump and 7 motorized deep wells with distribution were planned to be constructed. Whereas the actual achievement of these four years revealed that only 25 water supply schemes embracing 1 spring on spot (yet incomplete), 2 hand dug wells with hand pump, 13 shallow wells with hand pump, 7 motorized deep wells with distribution and 2 expansion schemes have been constructed. Hence, the four years' actual achievement of new water supply projects' construction is only 22.3% of the plan (TAWRO, 2009).

ii) Achievements in terms of increased potable water accessed population.

The population of Tole Ana based on the 2007 national housing and population census, was projected to be 68, 223 in July 2009. A total of 64, 162 populations of the Ana were planned to be additionally accessed to water supply service through the construction of 133 new water supply schemes to attain the water supply universal access target. Out of the 64, 162 expected populations to be accessed to potable water in the five years plan, 51,329 populations were planned to be served in the first four years time (2005/06-2008/09). But the four years' actual achievement in terms of people additionally accessed to potable water is 26,735 people accounting only 52% of the planned target. Up to July 2009, from the total 68,223 population of the Ana only 30,170 people were accessed to potable water supply (TAWRO, 2009).

iii) Achievements in terms of increased water supply coverage

It was planned to increase the water supply coverage of the Ana from 6% at the base year 2004/05 to 81.2% at the end of 2008/2009 with an average per annum water supply coverage increment target of 18.8%. Whereas, the actual achievement of water supply coverage of the Ana at the end of 2008/2009 is found to be 44.2% having achieved an average per annum water supply coverage increment of 9.55%. Hence, the actual water supply coverage achievement is only 54.4% of the planned target. When this achievement is compared with the national UAP performance target, it has fulfilled the universal access program performance target which demands an average per annum water supply coverage increment rate of 9% and above.

When the last four years *Ana's* performance is compared with the regional performance, the regional water supply coverage was 42.3% at the end of the second five years plan (in July 2005) and it reached 59.8% in the fourth year of the third five years plan (in July 2009) having achieved an average per annum water supply increment of 4.38%. Hence, the achievement of Tole ana in terms of water supply coverage increment per annum (9.55%) is almost two fold of the region's achievement and hence it is relatively good performance. But from the Anas target point of view, it is not yet satisfactory as it was planned to achieve 18.8% water supply coverage increment per annum so as to attain 100% water supply coverage at the mid 2010.

Hence, if the Ana's water supply coverage performance trend of the last four years persists similarly, universal water access could be achieved just after five years which is compatible with the newly set five years' regional plan target which is achieving universal water access at the end of 2014/15.

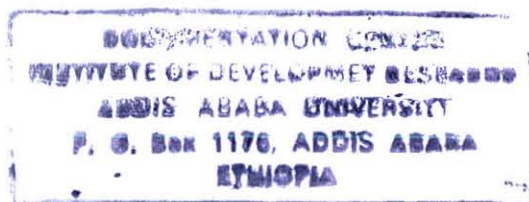
iv) Achievements in terms of reducing non-functionality of water supply schemes

During the five years water supply and sanitation strategic plan preparation, there were only ten water supply schemes in Tole *Ana* comprising 1 motorized deep well with distribution system and nine shallow wells with hand pump. Among these water supply schemes two schemes were non-functional due to hand pump damage and source (well) problem. Hence, the rehabilitation and maintenance of these non-functional schemes so as to bring them back to their operation was caught as supplementary strategy besides constructing new water supply schemes.

But as to the data obtained from the Ana water resources office, there are currently 35 community water supply schemes in Tole Ana comprising 8 motorized deep wells, 2 expansion schemes, 22 shallow wells with hand pump, 2 hand dug wells with hand pump and 1 spring on spot. Among these water supply schemes, it has been expressed and observed during field visit that 7 schemes embracing 2 motorized deep wells, 3 shallow wells, one expansion scheme and one on spot spring are non-functional due to different reasons. One deep well stopped giving service due to pump and switchboard related problem while the second deep well stopped operation due to pipeline (leakage) problem. The three shallow wells stopped service as a result of hand pump damage and source (well) related problems. The spring on spot is non-functional due to poor construction quality (leakage of the spring box). Similarly, one expansion scheme is not offering service due to pipe leakage problem.

At the base year (2004/05), there were 2 (20%) non-functional schemes out of the existing 10 schemes in the *Ana*. Just after four years in January 2009, there are still 7 (20%) non-functional schemes out of the existing 35 community water supply schemes in the Ana. Hence, with regard to reducing non-functional water supply schemes, there is no satisfactory achievement registered in the past four years of the five years' strategic plan implementation period.

As to key informants of both ana and zonal water resources offices, the major reasons cited for the increasing number of non-functional schemes are shortage of operation and



maintenance budget, lack of transportation facilities (specifically at Ana level), poor project construction quality due to weak monitoring especially on water schemes with distribution systems such as Migridi-Weserbi.

Moreover, these key informants described that though the number of newly constructed water supply schemes is increasing year after year, there is no equivalent emphasis given to ensure their sustainability. There is no adequate training provided on schemes' management for water committee, scheme caretakers, local mechanics and motor operators due to absence of training budget. The budget being allocated for operation and maintenance is also very limited and doesn't take into account the increasing number of water supply schemes in the *ana*. The absence of logistic (transportation) facility is also another challenge for undertaking timely maintenance works since it is difficult to transport maintenance tools and equipments like tripods using motor bicycle.

Therefore, so as to attain the intended target of accessing sustainable and safe water supply and basic sanitation to all people, besides focusing on the hardware aspects (construction of new water supply schemes), due emphasis need to be given for the software aspect such as training water committees, scheme caretakers, motor operators, local mechanics and local service providers parallel to capacitating the ana water office by logistics, manpower and finance (budget).

4.1.1.2 Sanitation Component Achievements.

As far as sanitation is concerned, at the base year of the five years strategic plan preparation, the status of improved sanitation use in Tole *Ana* was almost non-existent. The households' sanitation coverage (specifically latrine coverage) of the *Ana* was at 1.37% where out of the total 11,284 households of the *Ana* only 155 households were evidenced to have pit latrines (TASP, 2005).

It is indisputable that sanitation work requires an integrated effort and involvement of different stakeholders such as Water Bureau, Health Bureau, Education Bureau and the user community at large. Sanitation interventions require both the construction of sanitation facilities and bringing attitudinal change of the community through continuous awareness creation education until they internalize it and start to use the constructed sanitation facilities permanently. From economic point of view, the construction of sanitation facilities such as

pit latrines, hand washing facilities and solid waste disposal ditches were expressed by key informants at community level that they are not beyond the capacity of the user community. But what has been described to be challenging for the attainment of the universal access to improved sanitation is changing people's attitude on the necessity of using sanitation facilities, keeping environmental sanitation and maintaining personal hygiene.

Though the lion's share responsibility to enhance the sanitation condition of the *Ana* in particular and the region in general goes to the regional health bureau, improved sanitation in the absence of water supply is hardly possible. Hence, the role of the regional water resource bureau and the *Ana* water resources office in achieving improved sanitation is highly crucial.

During interview made with key informants of both the health and water resources bureaus' officers and experts at both regional and *Ana* levels have expressed that the coordination between these two sector Bureaus on sanitation program is weak though both of them are striving to attain a shared vision of creating healthy and productive citizens in the region. For instance, by the time the water office provides training for user communities, sanitarians from health office are not invited to participate. It has been also expressed during discussions that the major cause for this weak coordination is the absence of sanitation program coordinating unit as to the region that could organize these sector bureaus and offices and closely monitor the sanitation program performance of each sector as per their responsibility.

As far as sanitation achievement of Tole *ana* is concerned, the households' sanitation coverage (latrine possession) has increased from 1.37% (155 households) in 2004/05 to 74.83% (10248 households) out of the total 13,695 households of the *Ana* in December 2009 in the past four years time. But when households with evidence of latrine use are considered, the coverage reduces to 72.25% (9894 households are confirmed to use their pit latrines from the total 13,695 households of the *Ana*). But in strict terms, if improved sanitation is taken from the point of view of both the availability and evidence of use of latrines and hand washing facilities, the improved sanitation coverage drastically falls to only about 2.58% (353 households out of the 13,695 households residing in the *Ana*) (TAHO, 2009).

Moreover, when the quality standards of constructed pit latrines is observed and confirmed by key informants of community elders, most of them are poor quality latrines with out shelter (with out both top and side covers) that are highly susceptible to collapse during rainy seasons since the soil type in the area is just black cotton soil. Hence, the coordinated effort and commitment of user communities, health extension workers and water office community

promoters is very decisive in bringing the intended attitudinal change among the communities.

When the cumulative outcome of both improved water supply and sanitation achievements in Tole *Ana* with regard to communities' health improvement in the past four years is examined, there has been a significant improvement in the health condition of the people living in the *Ana* especially in connection to reduced number of cases in water-borne and water related diseases. When the number of cases on water borne and water related diseases registered in the *Ana* in 2004/05 and 2008/09 are compared, Malaria, Intestinal parasites, Diarrhoea, Rheumatic pain (comprising diseases like typhus, typhoid and others) and eye diseases have shown a significant reduction of cases by 575, 679, 815, 242 and 27 respectively though there is some increased number of cases on skin diseases by 261 (See table 4.1).

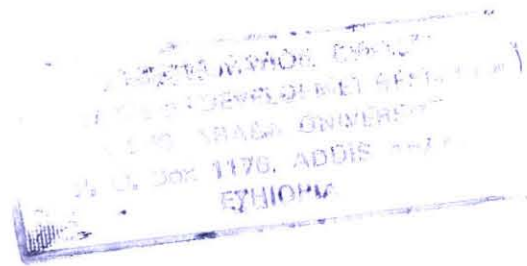


Table 4.1: The ten top diseases registered as to Tole Ana at the base year of the UAP (2004/05) and at the end of 2008/09

Base year (2004/05)		Year 2008/09		Changes in number of cases of water-borne or water-related Diseases		
Diagnosed Diseases	Number of cases	Diagnosed Diseases	Number of cases	Disease type	Reduced number of cases	Increased number of cases
Upper Respiratory Tract Infection	1316	Fighting cases	903	Malaria	575	
Malaria	1207	Upper Respiratory Tract Infection	902	Intestinal Parasites	679	
Intestinal Parasites	1109	Malaria	632	Diarrhea	815	
Diarrhea	1015	Intestinal Parasites	430	Rheumatic pain	242	
Fighting cases	653	Skin diseases	385	Eye diseases	27	
Tonsillitis	494	Lower respiratory tract infection	383	Skin infections		261
Rheumatic pain	442	Eye diseases	328			
Gastritis	403	Gastritis	306			
Eye Diseases	355	Urinary tract infections	202			
Skin infections	124	Diarrhea	200			
Total	7118		4671		2338	260

Source: TAHO, January 2010

4.1.2 COMPATIBILITY OF PLANNED AND EXECUTED WATER SUPPLY TECHNOLOGY OPTIONS

Out of the four years planned 112 water supply schemes, 23 schemes (20.53%) were low cost and easily manageable technology schemes (5 springs on spot and 18 hand dug wells with hand pump), 82 schemes (73.22%) are medium scale water technology options (shallow wells with hand pump) while 7 schemes (6.25%) are high cost technology schemes (7 motorized deep wells with distribution system).

But out of the 25 water supply schemes constructed in the past four years, 3 schemes (12%) are low cost and easily manageable water supply schemes comprising 1 spring on spot and 2 hand dug wells with hand pump, 13 schemes (52%) are medium scale water supply schemes (shallow wells with hand pump) while 9 schemes (36%) are high cost technology schemes embracing 7 motorized deep wells with distribution system and 2 expansion schemes. Hence, it is observed that the proportion of low cost and easily manageable water supply schemes has reduced from 20% in the initial plan to 12% in the actually executed water supply schemes while the proportion of high cost water supply technology schemes has increased from 6.25% in the initial plan to 36% in the actually executed water supply schemes.

This inclination to high cost technology schemes has multifaceted impact on the attainment of universal access of water supply to all people. For first and for most, high cost technology water supply schemes as their name imply need very huge capital demanding a significant hard currency for the purchase of pumps, generators, pipes and fittings and different spare parts. Hence, for developing countries like ours which are in deficit of adequate working capital and hard currency, couldn't achieve their development goals unless they exercise optimal and proper use of their limited capital at hand. Hence, in areas where there are low cost water supply technology options such as springs on spot and hand dug wells like the case of Tole Ana, first priority need to be given for such water supply options rather than sticking more on high cost technology options like motorized deep wells and motorized springs with distribution system.

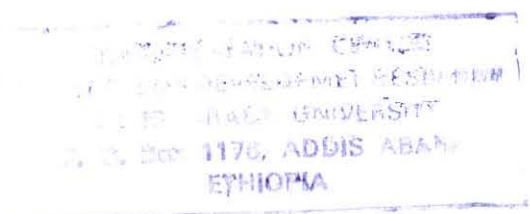
Secondly, high cost technology water supply schemes are so complex to be managed by the capacity of the community. The community couldn't handle the maintenance of these schemes at time of damage and the maintenance expense of these schemes is also high demanding the purchase of different spare parts imported from abroad, pump rewinding,

undertaking engine overall and mobilizing or hiring service rigs for borehole fishing and rehabilitation.

Thirdly, any damage on high cost technology water supply schemes may result in longer time of service delivery interruption, for instance until service rigs are obtained for fishing from the regional bureau or hired from private sector. Pump rewinding, undertaking engine overall and getting the necessary spare parts on market also take longer duration which compels water supply service delivery interruption for months.

Fourthly, the running cost of high cost technology water supply schemes such as motorized deep wells and motorized springs in the rural parts of the region in particular and the country in general is really getting unbearable as a result of the persistent global fuel price increment. In line with this, the water tariff of two sample motorized deep well water supply schemes (namely Migridi-Weserbi and Sobo-Chancho water supply services) those were included in the household survey revealed that their current water tariff per metre-cubic of water is 12 Birr and 15 Birr respectively. When these water tariffs are compared with the water tariff of Addis Ababa water supply service, the bottom (initial) water tariff for private connection in Addis Ababa water supply service is 1.75 Birr per metre-cubic of water which is less by almost seven to nine folds from the aforementioned rural water tariffs. The reason behind is that these rural water supply schemes use gasoline fuel for their engine operation while Addis Ababa water supply service uses hydro-power electric sources for driving water from Akaki area boreholes besides the Gefersa and Lega Dadi Dams.

As a result, with the current trend of fuel price increment, tariffs of engine operated rural water supply services will be unaffordable by the user community and hence will have a significant impact on the attainment of the universal access of water supply for all people by providing at least 15 litres per capita per day. Hence, to ensure sustainability of such schemes, shifting of engine driven schemes to hydro-power driven schemes will significantly reduce their operation costs. Moreover, proper training has to be given for water committee members on schemes' management focusing both on the operation and maintenance and financial management of rural water supply schemes. But the best option which should be given first priority is low cost and easily manageable water supply options development in areas where the water resources potential is promising like the case of *Tole Ana*.



4.1.3 STAKEHOLDERS' COORDINATION:

For successful implementation of any development program or plan, the coordination of all relevant stakeholders is very crucial. All relevant stakeholders have to actively involve starting from the planning stage (where the foundation of the development intervention is established and shared vision and responsibility is set out among stakeholders) to the final implementation, monitoring and evaluation and the management of the constructed water supply schemes.

Accordingly, the Ana Water Team (AWT) together with the Ana Support Group (ASG namely Ditcha) (a consulting firm hired for facilitating the WaSH program) has prepared the five years strategic plan of the Ana having made thorough stakeholders analysis. In this process, the potential stakeholders who could have a significant contribution to and impacts on the implementation of the water supply and sanitation development program were identified and have been tried to participate them in the planning process.

With this, the *Ana* has identified user communities, community based organizations, governmental organizations (zone, regional and federal level Administration, Water Resources and Health offices) and locally operating private sectors as stakeholders for the water supply and sanitation development in the *Ana*.

But when the actual coordination and involvement of these stakeholders in the implementation of water supply and sanitation strategic plan in Tole ana is examined, some stakeholders are examined to have good coordination (integrity) with the water resource office supporting the sector development while others have shown weak coordination.

i) Co-ordination with user communities

Regarding the coordination and participation of user communities on the water supply development, it is described by the *Ana* key informants that there is a big disparity among user communities. The reasons cited for this are the severity of the existing water supply problem (some communities may have traditional hand dug wells as an option while others don't) and the level of communities' awareness on the necessity and importance of potable water supply and improved sanitation. Communities having severe water supply problem and better awareness on the importance of potable water supply have actively participated both in

terms of labour and cash contributions and in properly managing their schemes after projects' completion.

On the other hand, some communities who have traditional hand dug well options and less awareness on the importance of potable water supply failed to contribute their labour in trench excavation and hence pipes are exposed to sun and physical damages being not covered underground. Some communities are also found reluctant to contribute the 5% cash contribution for water supply projects' construction either due to procedural problems or due to lack of awareness such as Asgori water supply scheme in Armufo Sole Kebele where they fail to contribute the 5% cash contribution for the water supply project and also fail to manage their water supply scheme properly and hence it get damaged as observed during the field survey.

On the contrary, some water supply schemes like Allabo are found exemplary for their proper scheme management where they fenced their schemes properly and prepared a lock for it, they also arranged a turn among members of user community to take care of the scheme without spending any payment for scheme caretakers. In doing so, they managed to save their money and opened an account at Oromia credit and saving share company – Bantu Branch and saved about Birr 750 within eight months service time from a shallow well with hand pump scheme which have a monthly water service charge of 2 Birr per household.

Generally, though there is some effort made to work in coordination with user communities on high cost water supply options like deep wells and some shallow well schemes, there is no significant work done with regard to community based low cost and easily manageable water supply construction as intended due to the lack of capital budget support for such water supply options.

ii) Co-ordination with governmental Organizations

Regarding the coordination of the *Ana* water resources office with governmental organizations working in the *Ana*, key informants from the local communities and *Ana* sector offices expressed that the *Ana* Administration was very committed for the sector development with regard to fair budget allocation and building the capacity of the *Ana* water resource office. Moreover, by establishing good governance and developing good development partnership it managed to attract about five NGOs and one donor working on water supply and sanitation development in the past four years. Accordingly, the *Ana* Administration has been awarded from the existing *Anas* in the zone for its good governance

and commitment to development. It has been also expressed that there is good coordination between the water resource office and finance and economic development office in connection to budget release, work supervisions and reporting and information exchange. Hence, there is good coordination between the *Ana* water resources office, *Ana* administration and *Ana* finance and economic development offices in enhancing the sector development.

But key informants from both *Ana* water resource office and *Ana* health office confirmed that the coordination between *Ana* water resources office and *Ana* health office is weak especially in the provision of awareness creation education for the community on the importance of potable water supply, improved sanitation and hygiene and on some related trainings provision though both of them are striving to attain the same objective of creating healthy and productive people of high productivity.

iii) Co-ordination with the private sector

Concerning the coordination of *Ana* water resources office with the private sectors such as local service providers such as masons, artisans, hand dug well diggers and local spare part suppliers; though relevant training has been provided to five local service providers to enhance the water sector development, their contribution for the sector development is expressed to be very minimal. In the past four years time, there is only one on spot spring development, two hand dug wells construction and four well heads construction (for drilled shallow wells) have been undertaken in the *Ana* by the technical support of these local service providers. Hence, it could be said that efforts in coordinating, capacitating and marching in to operation of local service providers in to water development works is still at its infant stage in the *Ana* though there are skilled people who could support the water sector development with this regard.

According to the water supply and sanitation universal access program strategy, much support of the private sector is expected in enhancing the water sector development especially on community based water supply schemes construction such as hand dug wells with hand pump and springs on spots, which are the top priorities in water supply universal access program. The major reason cited for the incapability to use these local service providers in community based water supply schemes development is the absence of budget allocated for supporting such water supply options development due to unjustified inclination to high cost technology water supply options.

Moreover, there is no any local spare part supplier in the *Ana* that could facilitate the timely maintenance of water supply schemes. Water committees will go to Addis Ababa in search of spare parts for hand pumps and generators spending huge money for transport and allowances which sometimes gets more than the price of the spare part itself.

iv) Co-ordination with NGOs

Though there was no NGO in the *Ana* during the preparation of the five years strategic plan that was considered as a stakeholder, the *Ana* managed to attract five NGOs who supported the water supply and sanitation development effort namely Hope 2020, OSRA (Oromo Self Reliance Association), Tiret Community Empowerment for Change, ICRC (International Committee for Red Cross) and Bekiner. These NGOs have contributed their share for the sector development by soliciting fund, constructing new water supply schemes and enhancing the capacity of the community in managing their water supply schemes by providing pertinent trainings.

Specifically, Hope 2020 has constructed three deep wells with distribution system and one expansion scheme in the *Ana* in the past four years time with the participation of the user communities both in terms of labour and 5% cash contribution. The *ana* water resources office experts have also involved in supervising the drilling and construction of these projects and mobilising the user communities on these water supply projects. The total cost of these four projects is Birr 5,460, 510.99 of which Hope 2020 covered 95% of their cost (Birr 5,187,485.45) while these four user communities covered 5% of their project cost (Birr 273,025.54). These four user communities namely Kursiti, Tullu Teji, Allenu Shenkora and Tumme Wayu have contributed 120 Birr, 120 Birr, 205 Birr and 150 Birr per household respectively for their water supply projects as 5% cash contribution which revealed the commitment of people for water supply development (TAWRO, 2009).

OSRA, Oromo Self Reliance Association, though it started water development intervention in the *Ana* lately, it has drilled and constructed two shallow wells with hand pump for Tullu Gijo community (Besi –Abukeku Kebele) and Golba community (Dowa – Bise Kebele) with total project cost of Birr 248,688 (Birr 122,000 for Tullu Gijo project and Birr 126,688.40 for Golba project). OSRA has also integrated water supply projects with sanitation and hygiene facilities such as shower houses, washing basins and demonstration (model) community latrines construction.



Concerning the coordination of OSRA with Ana water resources office and other relevant ana offices and with the user community, it is expressed by key informants of ana water resources office and ana administration that OSRA is being working in close collaboration and communication with ana water resources office, ana administration and the respective user communities at all stages of the water supply projects. It involves user communities and relevant development partners starting from the initial stage of top priority communities selection, sensitizing the selected communities, borehole site selection and land allocation for borehole, during implementation of water supply projects, at time of training provision for local mechanics and water committee members and in providing awareness creation education on the necessity and importance of potable water, improved sanitation and personal hygiene for the use communities. OSRA is expressed to do more of facilitation works (availing funds, contracting projects for contractors, arranging trainings and supplying some tools and barbed wire for fences) while the study and selection of sites, supervision of projects' construction and provision of trainings and awareness creation education is conducted by *Ana* water resources office experts and technicians. OSRA also managed to submits formal projects' performance reports to *Ana* and zonal water resources offices and to the regional water bureau regularly on monthly or if not quarterly basis as it necessitates. Generally, the co-ordination of OSRA with relevant stakeholders and the approach it follows in the water sector development is expressed to be a good example for other NGOs working in the water sector.

The other NGO who intervened in the Ana was Tiret Community Empowerment for Change. It availed Birr 12,000 fund for one spring on spot development for Tumme Yayya community and contracted out for one local service provider (Mason) but unfortunately the scheme is not yet completed due to poor construction quality (improper spring capping). Hence, the role of this NGO was restricted just on raising the fund as it is not committed up to the final service delivery of the water supply and capacitating water committee members and local mechanics for the scheme sustainability. Similarly, ICRC (International committee for Red Cross – Woliso Branch) has raised a fund for two hand dug well construction in Abebie rural town with technical support of Ana water office experts and technicians which were successfully completed and are currently providing water supply service for Abiebe town. Bekiner has also constructed one deep well with distribution system for Bantu 01 Kinder Garten which is currently providing potable water supply service for the students and the school community.

Generally, the coordination among Ana water office, ana administration, user communities and NGOs is examined to be good even though much has to be done in mobilising user communities and local service providers in low cost and easily manageable water supply development, actively participating NGOs in capacity building of water committees and water supply schemes and Ana water resources office through training and operation and maintenance tools and equipments provision.

Summary of Stakeholders' Coordination related issues:

1. The implementation of water supply and sanitation programs with active involvement and in coordination with user communities is very crucial for the timely completion of water supply projects, for efficient use of scarce capital resources, for maintaining construction quality of water supply schemes and above all to ensure sustainability of water supply schemes through creating sense of ownership on the constructed water supply schemes. Hence, the water sector and other partners working in the water sector have to give due emphasis to work with and actively involve the user communities at all stages of the program starting from the problem identification to the final monitoring and evaluation and capacitating them for the management of the constructed schemes.
2. The role of the private sector for enhancing the water sector development is also very decisive particularly for water supply schemes intended to be constructed at community levels such as hand dug wells with hand pumps and springs on spot. Hence, the locally existing human resources such as local service providers have to be given due emphasis for future water sector development interventions to improve the current slow pace of the sector development.
3. The role of NGOs in water supply and sanitation development is significant in soliciting and raising funds, implementing water supply and improved sanitation and hygiene facilities and in enhancing the public awareness on the necessity and importance of potable water, improved sanitation and hygiene practices. Their role is also remarkable in ensuring the sustainability of constructed water supply schemes and related facilities by providing trainings for water committee, local mechanics, scheme caretakers and operators and by building the capacity of the constructed water supply schemes and the *ana* water resource office through the provision of some technical tools. With this regard, though there was a good start and some efforts were

made in attracting and striding NGOs into the sector development undertakings, more has to be done in monitoring their works and arranging regular discussion forums to create a shared vision and to bring them into the track line of the government's policy and strategy priority.

Hence, strengthening the coordination and collaboration of *Ana* water resource office with NGOs is very crucial so as to enhance the sector development at a rapid pace.

4. These days, emphasis from international funding agencies for the water sector development is getting increasing and hence their role is becoming very significant. Hence, for countries like Ethiopia with investment capital deficit, the fund contribution of donors for the water sector will be of great importance if properly and efficiently utilized. The contribution of World Bank fund for WaSH program implementation in Tole Ana was remarkable in the past four years both in the construction of new water supply schemes and building the capacity of both rural water supply schemes and *Ana* water resources office. The major problem often raised in connection to such funds is related to fund disbursement (timely fund release) as intended.

So, if the current problem of fund disbursement is solved through close communication with donors and if close supervision of water supply schemes construction and fund utilization is in place, donors will have a significant role for the water supply and sanitation universal access program targets and the Millennium development goals attainment.

4.1.4 INSTITUTIONAL CAPACITY BUILDING

First of all, institutional capacity building of the water sector at all levels is very decisive to enable it to play its roles and perform its duties and responsibilities successfully. Institutional capacity comprises human resources, logistic and material resources and financial resources. It is the fulfillment of these all institutional capacity components that makes an institution capable to implement its plans and programs efficiently and effectively.

In line with this, building the institutional capacity of *Ana* water resources office by enhancing its human, logistic and materials and financial resources was set as one of its strategies for the successful implementation of the five years water supply and sanitation strategic plan (TASP, 2005).

i) **Human Resources:**

During the preparation of the *Ana* water supply and sanitation strategic plan in 2004/2005, the existing manpower of Tole *Ana* water resources office was only 3 employees among which two of them were with educational backgrounds of 8-12 grades while one (head of the office) has a college diploma in General Agriculture. But as to the five years target, it was planned to reach the office's manpower to 100% through recruiting experienced professionals capable of implementing the strategic plan.

But the organizational structure of the office has been revised lately by merging the *Ana* water resources office with *Ana* irrigation development office which required a total manpower of 31. Whereas, the actual existing manpower of Tole *Ana* water resources office after four years (in January, 2010) is 10 among which 7 are water supply technicians while three are irrigation technicians. Among these ten staffs, nine of them are new graduates from Woliso and Asella TVET Colleges in water supply and sanitation, electro-mechanical and irrigation technologies having one to four years experiences. Hence, despite the 100% human resource fulfillment target of the strategic plan, the existing manpower of Tole *Ana* water office is still very minimal accounting only 32% of the total required manpower.

When the human resource status of Tole *Ana* water resource office is compared with the cumulative status of the whole Oromia *Anas* water resource offices' human resource, it is found very low. As to the cumulative Oromia *Anas* water resource offices' manpower status 69.6% of the required manpower has been fulfilled while 30.6 % is still vacant. But for Tole *Ana* water resource office the vice versa holds true since the existing manpower is 32.3% while the vacant job titles account for 67.7% of the required manpower for the office (See Table 4.2).

Table 4.2: Summary of Existing Human Resources at Oromia Region Water Resource Bureau, Zonal and Ana Water Resource Offices and Urban Water Supply Services.

<i>Level of the Water Sector</i>	<i>Approved job titles</i>	<i>Job titles filled by man power</i>	<i>Vacant Job titles</i>	<i>Percentage of fulfilled job titles</i>	<i>Percentage of vacant job titles</i>
<i>At Regional Bureau Level</i>	296	237	59	80.1	19.9
<i>At Zonal Offices' level</i>	1,043	550	493	52.7	47.3
<i>At Ana Offices' level</i>	7,627	5,309	2,318	69.6	30.4
<i>At Urban water supply services level</i>	612	510	102	83.3	16.7
<i>Total manpower as to the region's water sector</i>	9,578	6,606	2,972	69	31
<i>S/ West Shewa Zonal WRO manpower</i>	59	24	35	40.7	59.3
<i>Tole Ana WRO manpower</i>	31	10	21	32.3	67.7

Source: OBoWR, 2009

The major problems raised for low human resource capacity of the office are lack of experienced professionals willing to work at *Ana* levels those could lead and show directions for the newly hired staff members, high workers' turnover in search of better salary, allowances and living condition and budget constraint as to the *Ana* to fulfill all job titles within the planned period. The absence of on job training for the newly hired workers to acclimatize or familiarize them with the practical working environment is also raised as another problem related with human resources' capacity building. In the past four years, the two newly established Woliso and Asella TVET Colleges as to Oromia Region have played a significant role in filling the prevailing manpower demand and supply gap particularly at *Ana* level by producing appropriate water supply and irrigation technicians for the water sector.

The other strategy planned to enhance the water sector human resource capacity of the *Ana* was through capacitating *Ana* WaSH Team (AWT), local service providers (such as masons, carpenters, local mechanics, and hand dug well diggers) and creating capable community facilitators in the *Ana*. With this regard, a series of training were given for 7 members of AWT on planning, implementation, monitoring & evaluation techniques, operation and management of water supply and sanitation systems & hygiene promotion activities. Two community facilitating teams (CFT), each of them comprising memberships of 3 multidisciplinary fields were also established to assist the *Ana* in mobilization, training & coaching the community in the strategic plan implementation. This is an additional capacity

created for the Ana, but the established local consultancy firms (CFT) were dissolved due to failure of the other community project cycles. Five technical (local) service providers were also selected and provided with the necessary theoretical and practical trainings which finally demonstrated their capacity in building small water supply schemes including 2 hand-dug wells, one spring on spot and four well heads construction of machine drilled shallow wells. These local service providers are trained to alleviate the shortage of local contractors in the construction of community based low cost and easily manageable water supply schemes for enhancing the water sector development in the *Ana*.

ii) **Logistic and Materials Resources:**

There was no any vehicle or motor bicycle as to Tole *Ana* water resources office during the preparation of the five years water supply and sanitation strategic plan. The *Ana* water resources office staff members were compelled to travel on foot up to 20 kms for fieldwork to answer the question of the user communities, be it be the question of study for new water supply projects construction or the maintenance of non-functional schemes. Hence, it was part of the plan to capacitate the office with logistics at least to equip it with motor bicycle so that it could perform its duties successfully. In line with this, the office is found successful since it has got its own motor bicycle supplied by WaSH program. But the major challenge raised by key informants of the *Ana* water resources office in relation to logistics (transportation) is the lack of vehicle for transporting heavy tools and equipments such as Tripods to undertake timely maintenance of rural water supply schemes.

Concerning material resources, there was no any office equipment like computer, printer, type-writer, duplicator and photocopy machine etc in the office before four years, where workers of the office were forced to send hand-written reports, study documents and plans for higher bodies such as to the zonal offices and to the bureau. But now they managed to have their own computer with printer supplied by World Bank Assisted R-WaSH program that enabled them to prepare clear and quality rural water supply study documents, reports and plans and is being trying to create water resources data base as to the *Ana* (including both already constructed water supply schemes and potential water resources to be developed in the future). Moreover, they have been supplied with dewatering pump together with generator for undertaking hand dug wells construction. The office is also provided with the necessary operation and maintenance tools and equipments such as tripods, moulds, open and closed wrenches, pipe threader, pipe cutter, multimeters, screw drivers and pinsa (See Annex 14).

It has been described during discussion made with key informants of Ana water resource office that there is no any effort made to fulfill professional equipments as to the office. Professional equipments such as GPS, deep meter, surveying instruments, geophysical instruments, geologic hammer, topo-maps, aerial photos and different software programs such as Autocad and Watercads are totally unavailable as to the office though they are very crucial to undertake the necessary professional works as to the desired quality and standard. Hence, though some of them are too costly to fulfill them at once, a step by step measure need to be taken to capacitate the office through time.

iii) **Financial Resources:**

Though financial constraint is initially assumed during the strategic plan preparation, a strategy was set to overcome the threat with this regard. Some of these options and their level of success are depicted as follows:

a) Actively involving the user communities in water supply and sanitation development

Active involvement of user communities in water supply and sanitation development endeavor has multifaceted advantages. First and for most, it creates sense of ownership on the water supply and sanitation facilities intended to be constructed which is very decisive element for schemes' sustainability. This is realized through their active involvement at all stages of the project in contributing their opinion and indigenous knowledge, labor, material and financial resources in identifying and prioritizing problems, in site and technology selection, in designing the system, during implementation, in monitoring and evaluation and finally in the management of the constructed water supply and sanitation facilities.

Hence, user communities have a significant role in filling the prevailing gap between the development need and available limited budget for implementing water supply and sanitation development works. In connection to this, user communities in Tole *Ana* have contributed a lot in terms of labor by excavating trenches for pipe laying work in seven deep wells with distribution system and two expansion schemes constructed in the past four years whose value is estimated at Birr 224,000 (Tole *Ana* water resources office). Concerning cash contribution of user communities, in ten water supply projects executed by World Bank fund and Hope 2020 in past four years in the *Ana*, users have contributed 5% of these water supply projects' cost in cash accounting a total of Birr 422,619.53 (See table 4.3). Therefore,

leaving aside other minor user communities' contribution in loading and unloading of different drilling and construction materials, the contribution they made in cash and for trench excavation alone in the past four years is amounting Birr **646,619.53**. Hence, the support user communities made for the water sector development in the past four years in Tole *Ana* is remarkable though much more was expected (**about 1.15 million Birr**) especially by involving them in low cost water supply schemes' construction such as hand dug wells and spring on spot schemes but are not actually executed as intended (WBPST and TAWRO, 2009).

Table 4.3: List of water supply projects in which the respective communities involved in 5% cash contribution

Name of the user community (water supply scheme)	Type of scheme	Total Project Cost (100%)	Use communities' cash contribution (5%)	Major Fund sources
Migridi Weserbi	Deep well with distribution system	2,174,739	108,736.94	World Bank
Beticha Cheleleka	Shallow well with hand pump	53,810.75	2,690.54	World Bank
Tulu Shuke	Shallow well with hand pump	53,810.75	2,690.54	World Bank
Hada -Areda	Shallow well with hand pump	53,810.75	2,690.54	World Bank
Tullu Gijo	Shallow well with hand pump	53,810.75	2,690.54	World Bank
Alle	Expansion Scheme	452,467.37	22,623.37	World Bank
Sobo	Expansion scheme	149,430.80	7,471.54	World Bank
Kursiti and Tullu Teji	Deep well with distribution system	2,461,996.66	123,099.8	Hope 2020
Tumme Wayyu	Deep well with distribution system	1,767,516.00	88,375.8	Hope 2020
Allenu Shenkora	Deep well with distribution system	1,230,998.33	61,549.92	Hope 2020
Total		8,452,391	422,619.53	

Source: TAWRO and WBPSS.

b) Enhancing Water Sector Development through Equitable Capital Budget Allocation among Projects' Implementing Sector Offices in the Ana.

During early years of decentralization of governmental organizations to *Ana* level since 2002, it was common to hear comments from *Ana* water resource offices in the region that the office was not in a position to be seen equitably with other sector offices which were

having their organizational structure at Ana level prior to the 2002 decentralization such as Agriculture and Rural Development Offices, Education Offices etc by Ana Cabinet in every aspect may it be in building the capacity of human resources, arranging offices and equipping them with the necessary office furniture and equipments, and allocating equitable budget both capital and recurrent to undertake the sector's development activities.

It is on the basis of this threat that ensuring equitable capital budget allocation among project implementing sector offices in the *Ana* was given emphasis in the five years strategic plan of the water office as one option to implement the intended development plan successfully. With this regard, it is expressed by *Ana* water office key informants that the role of the zonal water resource office to improve the awareness of the *Ana* cabinets on water resources development undertakings, the roles and responsibilities of *Ana* water office and to create good outlook for the water sector was great.

In view of this, during interview made with key informants of *Ana* finance and economic development office, they expressed that water resource office is one of the sector offices in the *Ana* that was given top priority with regard to capital budget allocation in the past four years time. To confirm what key informants have said, it has been tried to review the budget plans and annual budget reports of both the water resources office and finance and economic development office on the budgets allocated as to the *Ana* and for the water office. From these reviewed documents it has been observed that in the last four years time (2005/06 - 2008/09) the percentage of capital budget allocated for the water office was found 41%, 56%, 33% and 43% of the total capital budget allocated for the *Ana* in the budget years 2005/06, 2006/2007, 2007/2008 and 2008/09 respectively (See table 4.4).

As a result, the threat on equitable capital budget allocation for the water resources office have been solved and even *Ana* water resources office has received more emphasis than other project implementing sector offices having received a share of up to one-third to half of the *Ana* capital budget. In these four years time a total of capital budget allocated for the water sector is Birr 678,320 with an average per annum capital budget allocation of Birr 169,580.

Table 4.4: Block grant budget allocated as to Tole Ana and Tole Ana Water Resource Office in the past seven years.

Budget Year	Total Block Grant Budget of Tole Ana	Budget allocated by type				Budget Allocated for Water Sector				Percentage of capital budget allocated for water Office from the total Ana capital budget (%)
		Recurrent			Capital Budget	Recurrent			Capital Budget	
		Total	Salary	Operation cost		Total	Salary	Operatio n cost		
2002/03	3,464,957				169,056				-	0
2003/04	4,301,467				862,458				156,831	18
2004/05	4,701,165				774,800				338,155	44
2005/06	5,226,427	5,052,024	3,663,023	1,389,001	107,626	35,649	28,493	7,156	44,636	41
2006/07	6,593,279	5,827,672	5,422,225	805,139	365,914	42,538.2	34,073.2	8,465	203,627	56
2007/08	10,047,567	8,029,664	7,044,158	985,506	776,057	72,923	55,333	17,590	256,057	33
2008/09	11,016,111	10,400,797	9,424,217	976,580	409,000	96,298	72,938	23,360	174,000	43

Source: TAFEDO, 2009.

Remark: The over-utilized budget indicated in the water sector in 2006, 2008 and 2009 is as a result of the additional budget allocated for the water sector.

c) **Soliciting Fund Sources and Attracting NGOs Supporting the Water Sector Development.**

The third strategic option thought to alleviate the budget constraint threat in implementing the five years strategic plan was soliciting different fund sources (donors) and making efforts to attract NGOs (both local and international) working on water sector by preparing different projects' proposal and undertaking different promotion works as to the *Ana* through mass medias and magazines.

During the preparation of the five years water supply and sanitation strategic plan in 2004/05, there was no any donor or NGO who was supporting the water sector development of the *Ana* other than projects being implemented by government budget (both regional and ana budgets). But in the past four years period of the strategic plan (2005/06 – 2008/09), the number of NGOs who were involved in water supply development in this *Ana* reached five namely Hope 2020, OSRA, Tired Community Empowerment for Change Association, ICRC and Bekiner.

Moreover, one donor namely World Bank fund has also made significant contribution for water supply, sanitation and hygiene development undertakings in the *Ana* in the past four years. Currently, there is also a new WaSH program funded by DFID which is being entering in to operation as an extension of World Bank funded WaSH program. Key informants at *Ana* level expressed that this all is the result of the coordinated efforts made by the *Ana* administration and *Ana* water resources office together with regional water resource bureau.

These NGOs and donors namely Hope 2020, OSRA, Tired Community Empowerment for Change, ICRC, Bekiner and World Bank fund have spent about Birr 5,187,485.47, 248,688.00, 12,000.00, 20,000, 800,000.00, 2,563,098.00 respectively accounting a total of Birr 8,831,271.47 as a whole (TAWRO, 2009).

Hence, the strategy of the five years plan with regard to soliciting fund and attracting NGOs to fill the budget constraint gap is found successful which need to be strengthened more until the universal access of water supply and improved sanitation is attained.



d) Capacitating and harnessing local service providers into the water supply development undertakings.

The fourth strategy to overcome the financial constraint assumed to be faced during implementing the five years strategic plan was capacitating and harnessing local service providers in water supply and sanitation development undertakings. In doing this, it was expected to implement low cost and easily manageable water supply schemes at fair and reasonable costs by involving local service providers as local contractors. Hence, building the capacity of local service providers such as masons, artisans, hand dug well diggers and local mechanics by providing pertinent trainings which could enable them to accomplish quality water supply development activities both new constructions and maintenance of the already constructed schemes at community level was one of the strategies set in the five years' strategic plan implementation. Among water development activities they are expected to involve, the major ones are construction of hand dug wells, spring on spot development, well head construction for shallow wells, water points construction for expansion schemes and maintenance of damaged water supply schemes.

In line with this, a capacity building training has been given for five local service providers so as to enhance the water supply development of the *Ana*. As a result, they managed to execute four well heads construction for shallow wells implemented by *Ana* budget. They also constructed one spring on spot and two hand-dug wells in the past four years. But the number of hand dug wells and springs on spot planned in the five years strategic plan were 22 and 5 respectively. Therefore, the contribution of local service providers in the construction of community based water supply development activities is found to be very limited when compared with the intended plan.

As key informants among local service providers expressed, the major problem indicated for less contribution of local service providers for water supply development of the *Ana* was the absence of capital budget allocated for such community based low cost and easily manageable water supply technology options both by the *Ana* and NGOs working on water supply development undertakings in the *Ana*. Hence, the intended efficient utilization of available scarce capital resources through mobilizing local service providers into water sector development rather than using national and international contractors was not successful as planned.

4.2 RESULTS AND DISCUSSIONS WITH REFERENCE TO SAMPLE COMMUNITIES AND HOUSEHOLDS.

So as to enhance the research results obtained from key informants' interview, field observation and from secondary sources which have been discussed in the previous sub-chapter, the research results obtained from the household survey of 60 sample households selected from six sample communities are presented as follows.

4.2.1 ADEQUACY OF CONSTRUCTED WATER SUPPLY SOURCES AND USERS' PER CAPITA WATER CONSUMPTION.

Both the national Universal Access Program and the five years' strategic plan of Tole *Ana* have set the implementation monitoring indicator of supplying at least 15 liters per capita per day for rural people is applicable for water supply projects constructed and being constructed since 2005/06. In connection to this, the household survey conducted on 60 households selected from six communities revealed that 100% of them responded that the constructed water supply sources in these six communities are adequate in terms of their discharge for user communities. They expressed that there is no water deficit related to the constructed water supply sources in terms of the quantity of water they are supplying.

Concerning the per capita water consumption, from the 60 sample households surveyed 63.3% of them are consuming less than 15 liters per capita per day while 36.7% are consuming 15 liters and above per capita per day. The average per capita water consumption per day of the 60 sample households is found to be 14 liters which is below the national Universal Access Program and the *Ana's* strategic plan standard. The per capital water consumption per day of the 60 households ranges from 2.2 liters to 66.6 liters which showed that there is a big disparity among user households in the quantity of water they consume. Key informants from these sample user communities indicated that though the water sources have adequate water discharge, due to short service delivery hours of these water supply sources accompanied by long waiting time for queue particularly on hand dug well and shallow well sources, users are compelled to consume water quantity below the standard.

When the per capita water consumption per day of water supply users from on spot water sources such as hand dug wells and shallow wells is compared with water supply users from deep wells with distribution system, a significant difference has been observed. The mean (average) per capita water consumption per day of 40 households using hand dug well and

shallow well sources is 12 liters while the mean per capital water consumption per day of households using water from deep well sources is 18 liters. Likewise, among the 40 sample households using water from on spot sources only 30% of them have managed to consume 15 liters and above per capita per day while among 20 sample households using water from deep wells with distribution system 45% of them have managed to consume 15 liters and above per capita per day.

4.2.2 ACCESSIBILITY OF THE CONSTRUCTED WATER SUPPLY SOURCES

Similar to the minimum standard limit of availing 15 liters of safe water per capita per day for rural people set by the Universal Access Program and five years' strategic plan of Tole *Ana*, accessing of safe water supply within 1.5 km distance for rural people is also the other monitoring indicator. Among the 60 sample households surveyed, 95% of them reported that they have been accessed to water supply within 1.5 km distance while 5% of them reported that they travel more than 1.5 km distance to access safe water sources. In terms of time elapsed to access safe water sources, 95% of them have reported to travel for 15 minutes or less, 3.3% travel for 16-30 minutes while 1.7% of them reported to travel more than half an hour to access the constructed safe water supply sources. Hence, the majorities of the user communities have been accessed to water supply within the set standard of 1.5km distance. But for those users who travel more than 1.5 km distance, another option has to be sought to achieve the Universal Access Program goal.

4.2.3 DAILY WATER SERVICE DELIVERY HOURS AND TIME ELAPSED FOR WAITING QUEUE

The daily water supply service delivery hour and time elapsed for waiting turns to fetch water have been indicated by key informants of community elders to have a significant impact on the quantity of water supply fetched per household in rural areas. The survey conducted on 60 households of six selected water supply user communities depicted that the mean daily water supply service delivery hour of the six water supply schemes is 4 hour, specifically two hours early in the morning and two hours in the after noon. The daily water supply service delivery hour of these schemes ranges from 2 hours on public water points to 24 hours for private house connections. Likewise, the mean (average) time elapsed for waiting turns to fetch water as reported by 60 households of these six sample water supply

schemes is 30 minutes though there has been a considerable difference between users getting water from on spot sources and from deep wells with distribution system. The average time elapsed for waiting queue to fetch water from on spot water sources such as hand dug wells and shallow wells as reported by the 40 households using such water sources is 40 minutes while the 20 sample households using water from deep wells with distribution system reported that the time they spent to wait for turns is 20 minutes.

The short water service delivery hour accompanied by longer time of waiting for turns on hand dug well and shallow well water sources have been expressed to restrict water users of these sources from fetching more water as they demand. But this problem has been expressed not that much a challenge for water users from deep wells with distribution system sources since they can fetch as many times as need as the time they spent for waiting a queue is shorter. So, besides constructing new water supply schemes, management related challenges such as short daily service delivery hours and longer duration for waiting turns on spot servicing giving water sources need to be solved through discussion to attain the minimum standard of availing 15 liters per capita per day for rural people.

4.2.4 TYPES OF WATER FEE, SETTING PROCEDURES AND AFFORDABILITY

Basically, there are two major water use fee types under operation in Tole Ana in particular and in Oromia Region in general. The first is a flat rate type of water fee to be paid at uniform rate among all user households on monthly basis. This type of water fee is common for springs on spot, hand dug wells with hand pump and shallow wells with hand pump water supply schemes. The second type of water fee is tariff based type where the water fee is paid either at the instance of service delivery on public water points or on monthly basis for private customers who have house connections as per the quantity they consumed. Similarly, among the six sample water supply schemes, four of them comprising three shallow wells and one hand dug well with hand pump are using a flat rate water fee on monthly basis. Whereas, the two deep wells with distribution system use tariff based water fee where users are asked to pay the water fee by the time they fetch water on public water points or on monthly basis for those who have private house connections.

The mean water use fee of the 4 sample water supply schemes giving water services on the spot (three shallow wells and one hand dug well schemes) is 2 Birr per household per month though it ranges from 1 Birr to 3 Birr among these schemes. The mean water tariff of the two deep wells with distribution system is 13.50 Birr per meter cubic. Specifically, Migridi –

Weserbi and Sobo-Chancho water supply schemes have a water tariff of 15 Birr and 12 Birr per meter cubic respectively for water sold on public water points. But the water tariff of Sobo-Chancho water supply for private customers having house connection is 9 Birr per meter cubic. Though the intention of collecting these water use fees was to cover at least the running and maintenance cost of the rural water supply schemes, due to the absence of close follow up and proper training, five of the sample water supply schemes reported that they don't have saving bank accounts. But one water supply scheme namely Allabo has opened a saving account and deposited more than 700 Birr in eight months time of its service provision.

Regarding water fee (tariff) setting, from the 60 sample households 88.3% of them responded that the water fees of the six sample water schemes were set having actively participated the user communities and reached on consensus before the tariff is put on operation while 11.7% of them reported that the water fees were set merely by water committee members and the procedure followed was non-participatory. Particularly, tariff setting procedure of Sobo-Chancho water supply service was reported to be non-participatory where the water committee itself decided the water tariff. As a result, controversial water tariff have been observed on this water supply scheme. The water tariff for lower income group users on public water points is 12 Birr per cubic meter while the water tariff for better income groups who have private house connection is 9 Birr per cubic meter. This was expressed as made intentionally by water committee members having private house connections just to benefit themselves. Hence, water tariffs have to be set considering the running and maintenance costs which need to be covered by the revenue collected from water sales, by actively involving user communities so that consensus among users be attained before the tariff is put into action.

Regarding affordability of water fees, the survey conducted on 60 sample households of six sample water supply schemes revealed that 100% of them responded that the current water fees on use are affordable. They also responded that there is no one who failed to use the developed water sources in connection to affordability related problems.

4.3 WATER SUPPLY AND SANITATION STRATEGIC PLAN IMPLEMENTATION CHALLENGES IN TOLE ANA.

4.3.1 Procedural Inconsistency:

The procedural challenge raised by key informants of community elders in water supply and sanitation program development is absence of consistency in the prerequisites demanded from user communities during water supply projects' construction. This is to mean that some communities are asked to involve both in terms of labor and in 5% cash contribution while others are not requested to pay the 5% cash contribution. This procedural inconsistency among neighboring communities created a problem in actively involving the communities on water supply projects.

Some programs such as World Bank assisted WaSH program and an NGO called Hope 2020 asked for 5% cash contribution from user communities as a compulsory prerequisite and hence in such water supply and sanitation programs communities are obliged to pay the 5% cash contribution prior to the commencement of the water supply project. On the other hand, for water supply projects being constructed by regional and ana government budget, it is not a necessity to contribute 5% cash but it is enough to participate just only in terms of labor.

In connection to this, on one water supply scheme constructed by World Bank funded WaSH program two years before (Asgori community), each user household was asked to contribute 60 birr. At the initial stage they negotiated to contribute this cash and they asked some time to complete the payment. But just after the construction of the water supply project for them, they started to raise one basic question:

“Our neighboring community called “Jirru” have got potable water supply without any cash payment but we are requested to pay 60 Birr per household. So both of us being tax payers for government, why do such disparity between two adjacent communities do occur?”

Surprisingly, in this community after one year time of the project completion, out of 73 households only five of them have paid the 5% cash contribution due to this procedural inconsistency. One elder innocently told me during the household survey having said “Sixty birr is not that much difficult for me to pay but the approach has to be made uniform for all communities, either all communities have to pay or all communities have to be exempted from 5% cash contribution”.

4.3.2 Challenges in Selecting Water Supply Technology Options.

Basically, water supply technology selection is determined by different factors such as available water resource potential of the area, population size of user communities, people's settlement pattern, topographic feature of the area, available technologies to extract water resources and available fund for water development etc. Hence, during the selection of water supply options two, three or more factors could be optimally combined to come up with the best water supply technology option. In water supply development, the order of priority from best to worst water sources selection for development is springs on spot or gravity springs, hand dug wells, motorized springs, shallow wells, motorized deep wells and finally river diversion or earth dam with sand filter system based on the available water potential of the area.

For instance, in areas where the settlement pattern is dense and large user population is available, gravity springs, motorized springs, deep wells with distribution system or river diversion (Earth dam) with sand filter system could be selected based on the available water resource in the area and the fund available at hand for the water supply development. But in areas where the settlement is scattered and smaller user population is available, springs on spot, hand dug wells with hand pump, shallow well with hand pump, roof catchments or cisterns could be selected again based on the available water resource in the area and the fund available for development.

Accordingly, Tole ana being one of the anas in South-west Shewa with good surface and ground water potential, there is good opportunity to make best water supply technology selection based on the settlement pattern of the people and the size of user population intended to be supplied with potable water in compliance with the available fund at hand for the water supply development. Considering all these conditions, 5 springs on spot, 22 hand dug wells, 98 shallow wells and 8 deep wells were proposed in the five years strategic plan to attain the water supply universal access in Tole Ana by 2010.

But during implementation, stakeholders who were involved in water supply development in the ana merely emphasized on high cost technology water supply options such as deep wells and machine drilled shallow wells having undermined low cost technology water supply options such as on spot springs development and hand dug wells with hand pump which could be constructed by local technical capacity (by local service providers) and require limited capital. For instance, from the planned 8 deep wells seven of them have been



constructed while from 22 hand dug well and 5 springs on spot only 2 hand dug wells and 1 spring on spot have been constructed in Tole *Ana*.

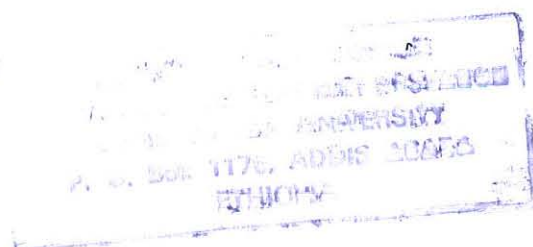
This unjustified inclination to high cost water supply technology options resulted in inefficient utilization of the scarce capital resources obtained from different sources by continuous and huge efforts. As a result, many people who could be supplied with potable water with very limited capital cost were found incapable of getting the intended potable water supply service in the planned time. Besides this, in areas where hand dug wells and shallow wells are productive, constructing deep well or motorized spring schemes is just imposing high operation and maintenance cost on the user community (high tariff to cover running costs such as fuel cost and other maintenance expenses).

Therefore, wise and rational water supply technology selection should be made for efficient scarce resources utilization, timely completion of water supply development projects and for the ease of constructed schemes management. Hence, all stakeholders who are being involving in water supply development in Tole *Ana* should make wise and rational selection of water supply technology options to take advantages of efficient utilization of scarce resources, timely completion of potable water supply projects, to provide users with affordable water service charges and for the ease of constructed schemes management by the local community capacity.

4.3.3 Low Institutional Capacity

As already been discussed under capacity building related issues section, for successful implementation of any program or plan, institutional capacities have to be strengthened with respect to human resources, logistic and material resources and financial resources. In line with this, though different efforts were made as to Tole *Ana* water resource office, still there are some capacity related challenges which need be addressed for successful implementation of water supply and sanitation program to attain water supply and sanitation universal access targets. Among others, the major challenges with regard to institutional capacity of Tole *Ana* water resource office are shortage of human resource particularly lack of capable and experienced professionals, lack of transportation facilities such as vehicle for field works like rural water supply study, operation and maintenance of damaged water schemes and for monitoring of water supply projects construction.

The total absence of professional field equipments and materials such as GPS, surveying instruments, geophysical instruments, Deep-meter, geologic hammer, topo-maps, aerial



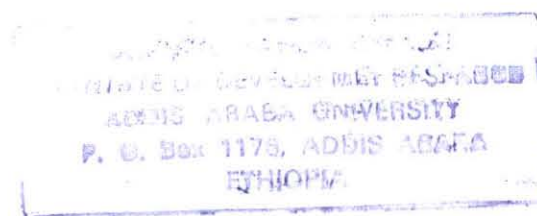
photos and software programs such as AutoCAD and WaterCAD are also other capacity related challenges that have a significant impact on the quality of rural water supply study and in establishing water resource database system as to the *Ana*.

The other capacity related challenge in implementing the water supply and sanitation strategic plan is financial constraint. Though this challenge was anticipated from the beginning during the five years strategic plan preparation, there were some strategies planned to overcome this challenge. Among these, attracting NGOs and donors which could support the water sector was one. Tole *Ana* was found successful with this regard having attracted about five NGOs and one donor in the past four years and secured a total fund of Birr 8,811,271.47 from these NGOs and donor. But the strategy planned to actively participate user communities and local service providers in water supply development interventions especially in the construction of low cost technology water supply schemes was not successful due to the lack capital budget or fund allocated for supporting such water supply options both by *Ana* budget and NGOs and donors. Hence, financial constraint has significantly impacted the water supply and sanitation strategic plan implementation in many aspects particularly in low cost water supply technology options where with limited capital support it was possible to undertake many water supply projects through active participation of user communities and utilizing local service providers as contractors with fair contract prices.

4.3.4 Absence of Well Organized Water Resource Database

It is indisputable that the availability of well organized water resources database (both potential and developed) is very decisive for reliable, practical and rational planning, efficient resource allocation and for easing operation and maintenance of work of already constructed water supply schemes.

With this regard, works done so far are not satisfactory. Data related to existing potential water resources such as available springs with their geographic location and *gandas*, their peak minimum flow and their nature (be artesian, gravity, etc) should be made available for water supply intervention at any time. Like wise, available ground water related data in each *ganda* such as the depths of existing hand dug wells, shallow wells and deep wells with their discharges and static and dynamic water levels have to be made available for additional water development interventions at any time the need arises. Moreover, available surface water potentials such as rivers, streams, lakes and ponds have to be registered together with their



nature (be permanent or intermittent) with their relative locations such as their *gandas*, the potential command area they can irrigate etc have to be well registered and organized in to a database for any development intervention.

But practically, as key informants of *Ana* water resource office described, efforts made with regard as to Tole *Ana* is found very insignificant as there is no such water resource database organized in computerized form and made ready for manipulation as to the office except some preliminary data collected and documented in the five years water supply and sanitation strategic plan document. This problem was similarly raised at zonal and bureau levels while discussing with key informants at both levels having strictly stressed the necessity and importance of this valuable resource for rational, economical and modern water sector development at all organizational levels starting from community level to the final Federal MoWR.

Hence, since the availability of such well organized water resource database is fundamental for practical and reliable planning and is being the first question often raised by development partners such as NGOs and donors who are going to intervene in water supply and sanitation development activities, due emphasis has to be given to organize the water resource database of the *Ana* in particular and the region in general in computerized form for ready use at any time the need arises.

4.3.5 Lack of Due Emphasis for Rural Water Supply Schemes' Management

For the attainment of water supply and sanitation universal access development program targets, besides the construction of new water supply projects, ensuring the sustainability of the already constructed water supply schemes is very decisive. In connection to this, though there is a good government's commitment to enhance the water sector development, key informants of the water sector at all levels shared a common opinion that there is a big disparity between the emphasis given for new water supply projects construction and for constructed schemes' management endeavors.

As a result, the lion's share of the budget allocated for water sector by government goes to new water supply construction. On the contrary, despite the increasing number of constructed schemes year after year, the budget allocated for operation and maintenance of the constructed schemes and for training of water committees, scheme caretakers, operators and other local service providers to ensure the sustainability of the already constructed schemes is very minimal. Moreover, the absence or lack of logistic facilities such as service rigs, mobile

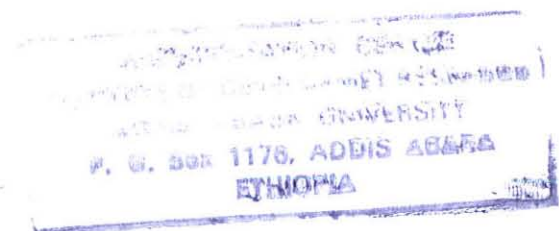
workshops and vehicles which are very crucial for the operation and maintenance of rural water supply schemes has also a significant impact in maintaining the functionality of the constructed schemes.

In line with this, the number of non-functional schemes at the base year of the five years water supply and sanitation strategic plan (2004/05) was two among the existing 10 water supply schemes in Tole *Ana*. But after four years (in 2008/09), though the number of water supply schemes increased from 10 to 35, the number of non-functional schemes has also increased from 2 to 7 schemes which significantly affected the attainment of the water supply and sanitation universal access target of accessing all people in the *Ana* with adequate and potable water supply and improved sanitation by the end of 2010.

Therefore, besides efforts being made to enhance the water supply access to people through new water supply projects construction, adequate emphasis has to be given for the management of the constructed water supply schemes through allocating reasonable and fair budget for operation and maintenance of constructed schemes and for training of water committees, scheme caretakers, operators and local service providers. Moreover, capacitating the logistic capacity of the water sector at all levels through purchasing new service rigs, mobile workshops, trucks and field vehicles to fill the prevailing gap step by steps is very crucial to cope up with the increasing demand for operation and maintenance support of rural water supply schemes in connection to the increasing number of constructed water supply schemes year after year.

4.3.6 Construction Price Escalation of Water Supply Projects.

As key informants at regional water resources bureau and at zonal and *ana* water resource offices level expressed, in the past four years the construction cost of water supply projects showed very drastic increment. During the preparation of the five years strategic plan of Tole *Ana*, the average unit cost of spring on spot, hand dug well with hand pump, shallow well with hand pump and deep well with distribution system (derived from contract prices of water supply projects which were under-construction in that year) was Birr 12,000, 25,000, 85,000 and 550,000 respectively. But the data obtained from Oromia Water Resources Bureau revealed that the average unit cost of these water supply projects has increased to Birr 52,000, 41,500, 98,000 and 2,200,000 respectively. Hence, this three to four folds increment



of construction cost has significantly impacted the water supply and sanitation development of Tole Ana in particular and the region in general.

The major reason indicated for this by key informants is that the increased number of water supply development projects supported by government budget, NGOs and different donors such as World Bank, Africa Development Bank, UNICEF, UNDP, DFID, BADEA etc on one hand and limited number of national and international contractors working in the water sector on the other hand. It is expressed that there are occasions when competitive bidders are unavailable for water supply projects' construction bids and hence the Bureau is compelled to rebid up to three times for a single bid. As a result, this demand - supply gap has created conducive environment for bidders to forward much escalated bid prices for water supply projects. Moreover, the global price increment of steel in the past four years has also affected the prices of casings and steel pipes being utilized in water supply projects. To alleviate the escalated steel pipe cost, water supply projects are currently being designed with PVC pipes. Oromia Water Works Construction Enterprise has also established a Plastic Factory at Kaliti which mainly produces PVC pipes and fittings to enhance the water sector development.

4.3.7 Existing Settlement Pattern of the People

The settlement pattern of the people by itself may not be a challenge for water supply and sanitation development unless it is accompanied by the absence of appropriate water supply development options and/or failure to select appropriate water supply options to solve the shortage or absence of potable water supply of a specific *ganda* or community.

Tole *Ana* is characterized by scattered settlement pattern where a given *ganda* is subdivided in to about three to six communities which are found scattered apart from each other. Each community often comprises from 70 to 90 households under it. Again each community comprises on average three development teams mostly having 25 to 30 households.

In some *gandas* and communities having very scattered settlement pattern, there is an occasion when low cost technology water supply options such as hand dug wells with hand pump or springs on spot are totally unavailable. Hence, in such conditions the next option to look for is high cost technology options like machine drilled shallow or deep boreholes or motorized springs with distribution system. As a result, the drilling of many shallow wells with hand pumps (on average up to 5 to 6 shallow wells per *ganda*) will be compulsory to cover the whole population of that specific *ganda* with potable water supply. Again, if shallow wells with hand pump water supply options are not promising as to the *ganda*,

springs or deep wells with distribution system may be alternative options based on the available ground water potential of the area taking into consideration the nature of people's settlement pattern within the *ganda*. Hence, it is when scattered settlement pattern is accompanied by the absence of low cost water supply technology options such as springs on spot and hand dug wells with hand pump that it becomes a challenge since it is very uneconomical to construct many machine drilled shallow wells, deep wells or springs with distribution system for very limited people who are very sparsely populated.

For instance, in one *ganda* of Tole *Ana* namely Besi Bilida, there are five shallow wells drilled so far but has not yet covered the water supply demand of the people residing within the *ganda* and hence are asking for more water supply services. This is as a result of the very scattered settlement pattern of the people accompanied by the absence of hand dug well water supply option as to the *ganda*. Likewise, in Kursiti Areda Leka *ganda*, there are two motorized deep wells with distribution system constructed in the past four years. This is also the result of the scattered settlement pattern of the people accompanied by the absence of water supply options such as hand dug well with hand pump, shallow well with hand pump or spring on spot. As a result, more than four million Birr was invested on Kursiti Areda Leka *ganda* to supply the whole population of the *ganda* with potable water supply service by drilling two motorized deep wells with distribution system at Kursiti and Areda Leka villages independently.

Generally, the scattered settlement pattern of the people in Tole *Ana* accompanied by the absence of low cost water supply options such as hand dug wells with hand pumps and springs on spot in some *gandas* or the failure of the study and design team to investigate exhaustively the available water supply options (unjustified inclination to propose high cost water supply options) have brought a significant impact on efficient utilization of the available scarce capital resources as to the *Ana* in particular and as to the region in general. Moreover, the construction of two high cost water supply technology options such as two deep wells within one *ganda* (on average having 425 households and 2125 population) has imposed a load on the user community to pay a high tariff water service charge to cover the running and maintenance cost of the scheme since about 212 households are compelled to run one deep well with distribution system covering all the running and maintenance cost of the scheme.

Hence, for people with such scattered settlement pattern, very careful and rational water supply technology option selection which thoroughly investigated the existing water

resources potential of the area and considered the user communities' capacity to run the constructed water supply scheme in a sustainable manner should made.

4.3.8 Weak Monitoring and Evaluation of Water Supply Projects' Construction

To support successful implementation of the five years water supply and sanitation development plan of Tole *Ana*, participatory M&E System was adopted. It is a community-centered monitoring and evaluation system. The process is built around the community, who as the principal beneficiary and implementer, and who are responsible for the long term management of the system. Users are the best sources of information about how the program is being implemented, how facilities are functioning and how they are being used. As managers, they also require data which can be used to take corrective actions if things are not going according to plan (MoWR, 2004).

Monitoring & Evaluation is an essential management function – and monitoring and evaluation that is participatory is the best mechanism for capacity-building. What is important is the process must be affordable and the result is useable.

As expressed by key informants of water resources office, the monitoring system used for water supply and sanitation development projects undertaken by the *Ana* budget and by other stakeholders such as NGOs and donor funded projects was participatory which is undertaken with the active involvement of the user communities, *Ana* Water Team and *Ana* water resources office experts and technicians. The major problem raised by key informants of *Ana* water resource office in connection to monitoring is on projects being carried out by regional budget for which the responsible body to monitor them is given to the zonal water resources office. The study and design work of these projects is carried out by zonal water resources office experts (though the projects are found in Tole *Ana*) and the construction contract agreement document is signed between the contractor and the regional water resources bureau at regional level and a copy of it is sent for zonal water resources office.

As a result, though the *Ana* water resources office is found just nearby to such water supply projects, since it doesn't have any design document and contract agreement document of these projects, there is no formal ground for it to undertake the monitoring of such water supply projects which are being implemented by the regional budget. The zonal water

resources office in its part undertakes the monitoring of these projects irregularly either on monthly or quarterly basis as there are many other similar projects being constructed in the zone by different stakeholders working in the water sector. The monitoring of such projects is influenced by the logistic and human resource constraints at zonal level as there are limited logistic facilities such as vehicles to undertake monitoring of all projects very closely as desired. Human resources constraint is also raised as a challenge especially in connection to professionals such as engineers and geologists, to undertake the regular monitoring of such projects' drilling and construction activities together with the study and design works and other contract administration activities at zonal office level.

Hence, it is observed that in water supply schemes constructed by the regional budget, there are some construction defects such as leakages of pipelines and incompatibility of pumps and generators which brought a problem in providing water supply services in a sustainable manner after their completion and hence created an operation and maintenance work load on the *Ana* water resources office.

So, there should be a close coordination in monitoring of such projects' activities between zonal and *Ana* water resources office in such a way that zonal water resources office better send the study and design and contract agreement documents to *Ana* water resources office with full responsibility of undertaking the monitoring of such projects and the *Ana* water resources office in turn should send valuable timely monitoring feedbacks to the zonal water resources office so that corrective actions could be taken by the zonal water resources office as the mandate is fully given to it.

4.3.9 Challenges Related to Stakeholders' Coordination.

For the success of any development program, the coordinated effort of all stakeholders for the attainment of commonly shared vision and goals is very decisive and essential. To this end, the five years' water supply and sanitation strategic plan of Tole *Ana* was expected to attain its goals of 100% access to potable water and improved sanitation by mid 2010 for the whole *Ana* population with the intention that all stakeholders will contribute their share and perform with their maximum capacity.



But practically, there were some coordination challenges observed during the past four years' implementation periods of the five years' strategic plan. The coordination between *Ana* water resources office and local service providers trained for supporting the water supply development was found very weak due to the absence of capital budget allocated for the *Ana* water office for undertaking low cost water supply technology options specifically for hand dug wells and springs on spot, on which the role of local service providers contribution was expected to be high. There was also coordination problem between *Ana* water resources office and *Ana* health office in working together on water supply and sanitation development interventions. For instance, Sanitarians' were not invited to involve in trainings provided by water office for water committees and for communities newly supplied with potable water in enhancing the awareness of communities on the necessity and importance of potable water and improved sanitation. Moreover, the lack of coordination between zonal and *Ana* water resources offices in monitoring and evaluation of water supply projects implemented by the regional government budget significantly impacted the construction quality of these projects. Some of water supply projects which were constructed by the regional government budget were found non-functional due to construction quality related problems such as leakages of the pipeline system, incompatibility of electromechanical equipments such as pumps, generators and switch boards.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

- ❖ Tole *Ana* first of all prepared a very ambitious strategic plan whose target is to achieve universal access of potable water supply and improved sanitation to the whole population of the *Ana* by mid 2010 starting from 6% base year potable water access in 2004/2005. To achieve this target, on average the percentage of increment in water supply access per annum of 18.8% was expected during the five years plan period which is more than four folds when compared with the past four years actual per annum increment of water supply access of the region (4.5%).
- ❖ The construction cost of water supply projects was highly escalated by two to four folds in the past four years due to the increased number of water supply projects being constructed and the limited number of contractors working in the water sector development. Moreover, the global price increment in steel has also increased the casing and steel pipes cost which are commonly used for water supply development. Hence, this price escalation has aggravated the existing budget constraint problem.
- ❖ The five years strategic plan implementation was constrained by budget, experienced professional human resources and logistics which significantly impacted the attainment of the planned targets. But efforts made in attracting and participating NGOs and donors in water supply development endeavors were successful where five NGOs and one donor were involved in water supply development in the past four years. The involvement of user communities on water supply projects implemented in the *Ana* was also good though there is a disparity among user communities. But the effort made to mobilize and actively participate rural communities and local service providers on community based water supply options such as hand dug wells and on spot springs was very weak which needs special attention.
- ❖ Regarding the attainment of the national universal access target of availing potable water of 15 liters per capita per day within 1.5km distance for rural population, the constructed water supply schemes in the last four years have attained their targets. As confirmed by the household survey result, 95% of the 60 households responded that they have got access to potable water within 1.5km distance and the water sources have the capacity of availing 15 liters per capita per day for user communities. But due to the limitations in service delivery hours per day of on spot service giving water supply schemes and longer

time elapsed for waiting long queue, only 36.7% of the respondents expressed to use 15 liters and above per capita per day while the rest 63.3% expressed to use water amounting below the minimum standard.

- ❖ Though the strategic plan planning team has tried to identify the appropriate water supply options to be developed in each *ganda* of Tole *Ana*, there was unjustified inclination to high cost water supply technologies by implementing parties such as *Ana* water resources office, NGOs and donors which imposed significant impact on efficient utilization of available scarce capital resources.
- ❖ Less emphasis was given to the already constructed water supply schemes management since the budget allocated for operation and maintenance of constructed schemes and for training of water committees, scheme caretakers (local mechanics) and motor operators to ensure schemes' sustainability is very limited as compared to the fast increasing number of newly constructed water supply schemes.
- ❖ Despite the threat that the *Ana* water resource office often raises in connection to unfair capital budget distribution among project implementing sector offices at *Ana* level, it was found that Tole *Ana* water resources office has got very fair capital budget share in the last four years compared to other sector offices having received from one –third to half of the *Ana's* capital budget share.
- ❖ The absence of well organized water resources database (database of both potential water resources to be developed and the already developed water resources) as to Tole *ana* affected the quality of the planning process and efficient utilization of scarce capital resources as depicted by the inappropriate selection and unjustified inclination to high cost and complex water supply technology options.

5.2 RECOMMENDATIONS

- Establishing well organized water resources database as to Tole *Ana* in particular and as to the region in general is very essential and decisive for the water sector development in the region and hence should be given due emphasis.
- For the attainment of universal access of potable water and improved sanitation to all people in Tole *Ana*, the coordinated effort of all stakeholders comprising user communities, relevant sector offices, NGOs, donors, local service providers such as masons, artisans, local mechanics, spare part suppliers etc is very essential and has to be more strengthened in future water sector interventions. Particularly mobilizing the mass community on community based water supply and sanitation development undertakings,

capacitating local services providers through training and harnessing them into the water sector development and allocating capital budgets for supporting such low cost and easily manageable water supply options where the water potential is promising, should be given top priority and due emphasis.

- Since the construction of new water supply schemes is not an end by itself unless it is accompanied by proper water supply schemes management to ensure their sustainability, due emphasis has to be given for water supply schemes management by capacitating them through provision of proper trainings for water committees, scheme caretakers, local mechanics and other local service providers together with the provision of some technical operation and maintenance tools.
- Building the capacity of *Ana* water resources offices by qualified and experienced manpower, finance, logistic facilities, equipping them with the necessary operation and maintenance equipments and professional field equipments is very decisive which need to be given emphasis so as to enhance their implementing capacity and enable them operate with their full capacity for the attainment of the water supply and improved sanitation universal access targets.
- There has to be Sanitation Program Coordinating Unit at both regional and *Ana* levels who coordinates sector offices those have a role in the program implementation such as water resources bureau, health bureau, finance and economic development bureau and education bureau so that every sector can contribute its share and perform its duties and responsibilities under close monitoring of this coordinating unit.
- The current monitoring and evaluation procedure which created a gap in taking share responsibility among different water sector hierarchies especially for projects being implemented by regional budget has to be decentralized up to *Ana* level together with full responsibility and accountability accompanied by close feedback communications and corrective decisions between these water sector strata.
- There should also be procedural uniformity on the prerequisites demanded from user communities on water supply projects' construction in such a way that all communities better contribute the 5% cash contribution and support water supply projects in labor so that sense of owner ship could be developed by user communities on the constructed water supply scheme.

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Annexes

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Annex 1: Name of gandas, number of households & location of rural *Gandas* in Tole Ana (2005)

No.	Name of the Ganda	Number of households	Total Population	Distance from the Woreda capital (km)	Location in relation to the Woreda capital
1	Bantu Town	409	1635	Reference	
2	Dowa - Bisee	573	2984	20	NE
3	Sobo Chancho	655	3050	14	NE
4	Alle	487	2206	18	NE
5	Besi Abukeku	731	3489	13	N
6	Besi Bilida	797	3883	10	NE
7	A/Silassie -Gichilla	619	2932	9	NE
8	Weserbi Migridi	460	2282	7	N
9	Tullu Teji	534	2496	6	N
10	Jewara Kora	744	3592	6	NE
11	Malima Tume Chifa	393	2111	11	S
12	Qursiti – Areda Leka	469	2435	3	N
13	Golole - Temsea	746	3610	18	SE
14	Dhokat	302	1582	17	S
15	Allenu Shenkora	248	1221	11	SE
16	Tumme Yayya	297	1504	9	S
17	Koche Mariam	243	1279	6	S
18	Kura Lukku	238	1268	3	E
19	Bantu Bodha	399	2044	2.5	SW
20	Armufo Teji	230	1252	6	NW
21	Armufo Sole	357	1833	4	W
22	G/Bubbisa	447	2383	15	SW
23	Tumme Wayyu	398	2139	13	SW
24	Malima Seden Botone	631	3117	17	S
25	Billi -malima	286	1373	4	N
	Total	11693	57700		

Source: TASP, 2005

Annex 3: List of Existing Water Supply Schemes and Water Access by *Gandas* in 2005

No.	Name of the Ganda	Ganda Population	Water Supply Scheme			Beneficiary Size	Scheme Status	Coverage	
			Type	Quantity	Location (Goxi)			Nominal (2005)	Effective (2005)
1.	Besi Bilida	3883	Shallow well	1	Gnea	450	Functional	11.6	11.6
2.	Sobo - Chancho	3050	Shallow well	1	Chancho	400	Functional	13	13
3.	Migridi Weserbi	2282	Shallow well	6	Areda Guddo	250	Non-functional(84)	30.6	27
					Areda Guddo		Functional		
					Areda Guddo		Functional		
					Migridi	450	Functional		
					Teji		Functional		
Teji	Functional								
4.	Tulu Teji	2496	Shallow well	1	Jijiga	250	Non-functional	10	0
5.	Tumme fi Yayya	1504							
6.	Qursiti Areda Leqa	3610							
7.	Gololee fi Tamsa'aa	2435							
8.	Dowa – Bise	2984	-	-	-	-	-	-	-
9.	Alle	2206	-	-	-	-	-	-	-
10.	Besi - Abukeku	3489	-	-	-	-	-	-	-
11.	A/Silassie -Gichilla		-	-	-	-	-	-	-
		2932							
12.	Jewara Kora		-	-	-	-	-	-	-
		3592							
13.	Malima Tume Chifa	2111	-	-	-	-	-	-	-
14.	Dhokat		-	-	-	-	-	-	-
		1582							
15.	Allenu Shenkora		-	-	-	-	-	-	-
		1221							
16.	Koche Mariam		-	-	-	-	-	-	-
		1279							
17.	Kura Lukku		-	-	-	-	-	-	-
		1270							
18.	Bantu Bodha		-	-	-	-	-	-	-
		2044							
19.	Armufo Teji		-	-	-	-	-	-	-
		1252							
20.	Armufo Solee		-	-	-	-	-	-	-
		1833							
21.	Gonnan Bubbisa		-	-	-	-	-	-	-
		2383							
22.	Tumme Wayyu		-	-	-	-	-	-	-
		2139							
23.	Malima Seden Botone		-	-	-	-	-	-	-
		3117							
24.	Bili –Malima		-	-	-	-	-	-	-
		1373							
	Rural total	56,067	Shallow well	9	-	1800	-	3.23	2.6
25	Bantu 01 (Town)	1635	Deep Well	1	-	1635	Functional	100	100
	Total as to the Ana	57,702	Schemes	10	-	3435	-	6	5.3

Source : TAWRO

Annex 2: Projected population of Tole Ana for 2009 (based on 2007 Population and Housing Census)

S.N.	Name of the Kebele (Ganda)	Population size			Number of Households
		Males	Females	Total	
1.	Bantu Boda	814	942	1,756	599
2.	Kura Luku	1,535	1,411	2,946	361
3.	Bili Malima	908	763	1,671	339
4.	Kursiti Areda Leka	1,688	1,536	3,224	553
5.	Tullu Teji	1,243	1,439	2,682	546
6.	Jewaro Kora	1,354	1,363	2,717	532
7.	Besi Abukeku	1,959	2,074	4,033	814
8.	Dowa -Bise	1,660	1,675	3,335	646
9.	Sobo-Chancho	1,691	1,897	3,588	722
10.	Alle	1,218	1,315	2,533	516
11.	Golole Temsea	2,032	2,128	4,160	790
12.	Dhokat	748	825	1,573	323
13.	Allenu Shenkora	838	705	1,543	318
14.	Tumme Yayya	1,548	1,372	2,920	594
15.	Koche Mariam	855	930	1,785	373
16.	Malima Tumme Chirfa	1,227	1,293	2,520	513
17.	Malima Seden Botone	1,827	1,862	3,689	748
18.	Tumme Wayyu	1,666	1,532	3,198	648
19.	Gonan Bubbisa	1,347	1,273	2,620	533
20.	Armufo Sole	1,229	1,142	2,371	483
21.	Armufo Teji	915	890	1,805	370
22.	Besi Bilida	1,835	1,393	3,228	685
23.	Abebie Silassie Gichila	2,158	1,593	3,751	725
24.	Weserbi Migridi	1,261	1,387	2,648	519
25.	Bantu 01	1,108	1,151	2,259	461
Total		34,664	33,891	68,555	13,711

Source: TAAO

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Annex 4: List of Existing Water Supply Schemes in Tole Ana in July, 2009.

S.N.	Name of the Scheme	Kebele (Ganda)	Scheme type	Number of users	Status of the scheme	Commission year
1.	Arede Gudo 1	Migridi Weserbi	Shallow well	325	Non-functional	1988
2.	Arede Gudo 2	Migridi Weserbi	Shallow well	290	Non-functional	1988
3.	Migridi 1	Migridi Weserbi	Shallow well	320	Functional	1988
4.	Teji 1	Migridi Weserbi	Shallow well	410	Functional	1988
5.	Teji 2	Migridi Weserbi	Shallow well	450	Functional	2009
6.	Migidi - Weserbi	Migridi Weserbi	Deep well	600	Non-functional	2009
7.	Mamma	Tullu Teji	Shallow well	410	Functional	1996
8.	Tullu Teji	Tullu Teji	Expansion Scheme	2360	Non-functional	2007
9.	Arede Leka	Kursisti Arede Leka	Deep well	1265	Non-functional	2007
10.	Golole -Temsea	Golole Temsea	Deep Well	3829	Functional	2007
11.	Allenu	Allenu Shenkora	Deep well	1527	Functional	2008
12.	Alle Kusaye	Sobo Chancho	Deep well	2890	Functional	2007
13.	Welisuma (Bise 1)	Sobo Chancho	Shallow well	420	Functional	2005
14.	Alle	Alle	Expansion scheme	1050	Functional	2008
15.	Gnea	Besi Bilida	Shallow well	380	Functional	2005
16.	Gobene	Besi Bilida	Shallow well	359	Functional	2007
17.	Walgo	Besi Bilida	Shallow well	335	Functional	2007
18.	Sokole	Besi Bilida	Shallow well	370	Functional	2007
19.	Allabo	Besi Bilida	Shallow well	350	Functional	2009

S.N.	Name of the Scheme	Kebele (Ganda)	Scheme type	Number of users	Scheme status	Construction year
20.	Bise 2	Dowa -Bise	Shallow well	390	Functional	2007
21.	Guto	Dowa -Bise	Shallow well	350	Functional	2008
22.	Golba	Dowa -Bise	Shallow well	420	Functional	2008
23.	Tumme - Yayya	Tumme - Yayya	Shallow well	410	Functional	2006
24.	Tumme - Wayyu	Tumme - Wayyu	Deep well	1500	Functional	2006
25.	Kursiti	Kursiti Areda Leka	Deep well	1500	Functional	2007
26.	Tullu Gijjo	Besi Abukeku	Shallow well	410	Functional	2007
27.	Jirru	Armufo Teji	Shallow well	350	Functional	2009
28.	Leka	Amufo Teji	Shallow well	350	Functional	2009
29.	Asgori	Armufo Sole	Shallow well	626	Non-Functional	2009
30.	Chore	Armufo Sole	Shallow well	420	Functional	2009
31.	Kora	Jewaro - Kora	Shallow well	300	Functional	2009
32.	Kemisa 1 (Abebie 1)	Abebie- Sillasie- Gichila	Hand dug well	170	Functional	2008
33.	Kemisa 2 (Abebie 2)	Abebie- Sillasie- Gichila	Hand dug well	340	Functional	2008
34.	Meti	Tumme Yayya	Spring on spot (incomplete)	500	Non-functional	2008
35.	Bantu 01	Bantu 01	Deep well	3459	Functional	1999

Source: TAWRO, 2009

Remark: Since three water supply schemes are found in school compounds (Tullu Teji, Abebie and Bantu 01 K.G) and are only serving the school community (students and teachers), they are not included in these community water supply schemes list. The number of students being served by these three schemes which are found in school compounds has been deducted from the total population accessed to potable water supply to avoid redundancy of user community counts. But the number of teachers and their families living permanently in these schools compound are considered as users (200 user teachers including their families).

Annex 5: Summary of Existing Number of Water Supply Schemes in Tole Ana at the Base year 2004/05 and after four years (2008/09)

Scheme type	Existing Schemes in 2005	The last four years (2006-2009)		Existing schemes in 2009	Percentage of each water supply technology options in the four years plan	Percentage of newly constructed water supply schemes technologies from the total
		Plan	Achieved			
Deep wells with distribution	1	7	7	8	6	28
Expansion Scheme			2	2	0	8
Shallow wells		98	13	22	87.5	52
Springs on spot		5	1	1	5	4
Hand dug well		22	2	2	19.64	8
Total schemes	10	112	25	35		
Total population of the zone	57,702			68,555		
Total Population accessed to potable water	3,345		26,735	30,170		
Percentage of potable water supply accessed population	6			44.2		
Average percentage of water access increment per annum for the last four years			9.5			

Source: TAWRO

Annex 6: Summary of Existing Number of Water Supply Schemes in South-West Shoa Zone at the Base year (2005) and after Four years (2009)

Scheme type	Existing schemes		Additional schemes constructed (2006-2009)	% of each newly constructed scheme technologies from the total
	Up to 2005	Up to 2009		
Deep well with distribution	42	55	13	2.93
Shallow well with hand pump	172	316	144	32.5
Hand dug well with hand pump	57	266	209	47.18
Spring with distribution	10	15	5	1.13
Spring on spot	37	89	72	16.25
Total schemes	308	741	443	
Total population of the zone	1,122,554	1,292,268	169,714	
Total Population accessed to potable water	356,637	625,497	268,860	
% of potable water supply accessed population	31.8	48.4	16.6	
Average percentage of water access increment per annum for the last four years			4.15	

Source: SWSHZ WRO

Annex 7: Existing Number of Sanitation Facilities by HH and Institutions per Ganda (2005)

No.	Ganda	HHs	No. of latrines		Latrine Coverage (%)		No. of Ancillary Sanitation facilities		
			HH	Institutions	HH	General	Showers	Washing Basins	Cattle trough
1	Dowa Bise	573	30	1	5.2	5.4	-	-	-
2	Sobo Chanco	655	10	5	1.5	2.3	-	-	-
3	Alle	487	5	2	1	1.4	-	-	-
4	Besii Abukeku	731	4	3	0.5	0.9	-	-	-
5	Besi Bilida	797	8	2	1	1.2	-	-	-
6	Abebie Silassie Gichilla	619	12	1	1.9	2.1	-	-	-
7	Weserbi Migridi	460	0	2	0	0.4	-	-	-
8	Tullu Teji	534	15	4	2.8	3.5	-	-	-
9	Jewaro Kora	744	19	0	2.5	2.5	-	-	-
10	Malima Tume Chirfa	393	0	2	0	0.5	-	-	-
11	Kursiti Areda Leka	469	7	2	1.5	1.9	-	-	-
12	Golole -Temsea	746	10	3	1.3	1.7	-	-	-
13	Dhokat	302	3	1	1	1.3	-	-	-
14	Allenu Shenkora	248	5	0	2	2	-	-	-
15	Tumme Yayya	297	5	1	1.6	1.6	-	-	-
16	Koche Mariam	243	0	2	0	0.8	-	-	-
17	Kura Lukku	238	6	3	2.5	3.8	-	-	-
18	Bantu Bodha	399	0	1	0	0.25	-	-	-
19	Armufo Tejii	230	0	0	0	0	-	-	-
20	Armufo Sole	357	1	2	0.28	0.84	-	-	-
21	Gonnan Bubbisa	447	0	1	0	0.2	-	-	-
22	Tumme Wayyu	398	0	4	0	1	-	-	-
23	Malima Seden Botone	631	0	3	0	0.47	-	-	-
24	Billi - Malima	286	15	1	5.2	5.6	-	-	-
	Ana (Rural) Total	11284	155	46	1.37%	1.78%	0	0	0

Source: TAHO, 2005

Annex 8: Existing Sanitation Facilities and Latrine Coverage of Tole Ana (January, 2010)

S.N	Name of Kebele	Total Population	Total households	Total households with latrine	Number of households without latrine	Number of households with evidence of use	Number of households with latrine and hand washing facility	Sanitation Coverage (%)
1	Bantu Boda	2993	624	376	248	338	10	54.17
2	Gonan Bubisa	2665	555	445	110	433	10	78.02
3	Malima T/Chirfa	1919	375	332	43	332	29	88.53
4	Jewaro Kora	2659	554	372	182	372	33	67.15
5	Bili Malima	1696	353	136	217	136	2	38.53
6	Armufo Sole	2415	360	130	230	130	1	36.11
7	Besi Bilida	3273	628	608	20	608	2	96.82
8	Dhokat	1616	329	235	94	145	5	44.07
9	Tumme Wayyu	3244	649	351	298	351	3	54.08
10	Besi Abukeku	4070	814	490	324	490	1	60.2
11	Dowa Bise	3380	680	569	111	569	1	83.68
12	Tullu Teji	2731	563	553	10	553	181	98.22
13	Allenu Shenkora	1589	331	245	86	176	6	53.17
14	Golole Temsea	3951	690	655	35	512	5	74.2
15	Koche Mariam	1940	388	291	97	291	10	75
16	Malima Seden Botone	3895	779	682	97	682	2	87.55
17	Tumme Yayya	3090	618	402	216	402	3	65.05
18	Armufo Teji	1930	386	179	207	179	1	46.37
19	Migridi Weserbi	2696	541	540	1	540	3	99.82
20	Abebie Silassie Gichila	3775	755	579	176	579	5	76.69
21	Kursiti Areda Leka	2880	576	434	142	434	9	75.35
22	Sobo Chancho	3760	752	686	66	686	2	91.22
23	Kura Lukku	1880	376	288	88	288	8	76.6
24	Alle	2690	538	208	330	206	1	38.29
25	Bantu 01	2405	481	462	19	462	20	96.05
	Total	69142	13695	10248	3447	9894	353	72.25

Source: TAHO, January 2010

**Annex 9: Existing Sanitation Facilities and Latrine Coverage of Oromia Region
(January, 2010)**

Name of the zone/town	Population size	Number of Households	Number of Households who have Pit latrine	Percentage of Sanitation coverage (Based on pit latrine possession)
Arsi	2,905,068	605,223	483,366	79.87
West Arsi	1,799,434	374,882	241,256	64.36
Bale	1,422,483	296,351	213,363	72
Borena	1,015,943	211,65	89,433	42.25
Guji	1,231,466	256,555	78,468	30.59
Hararge Baha	3,042,625	633,880	352,445	55.6
Hararge Lixa	1,912,384	398,413	241,960	60.73
llu Abba Bora	1,472,546	306,780	146,440	47.73
Jimma	2,906,271	605,473	388,013	64.08
East Wollega	1,284,653	267,636	121,970	45.57
West Wollega	1,545,117	321,899	251,672	78.18
Horro Guduru Wollega	658,416	137,170	73,961	53.92
Kellem Wollega	903,126	188,151	146,626	77.93
Finfinne Surrounding Special Zone	823,745	171,614	31,573	18.4
East Shewa	1,393,034	290,215	222,904	76.81
North Shewa	1,645,208	342,752	289,765	84.54
West Shewa	2,192,954	456,865	403,005	88.21
South West Shewa	1,087,861	226,638	151,848	67
Adama Town	273,108	56,898	44,469	78.16
Asella Town	101,117	21,066	15,056	71.47
Bushoftu Town	156,680	32,642	15,175	46.49
Jimma Town	189,948	39,573	28,264	71.42
Nekemte Town	100,949	21,031	13,975	66.45
Shashemene Town	111,282	23,184	10,574	45.61
Total as to Oromia	30,175,418	6,286,545	4,055,581	64.51

Source: OBoWR, ADB Support Staff

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Annex 10 : Comparison of occurrences in the ten top diseases registered as to Tole Ana in 2004/05 and at the end of 2008/09

S.No.	Base year (2004/05)		Year 2008/09		Changes in number of cases of water-borne or water-related Diseases		
	Diagnosed Diseases	Number of cases	Diagnosed Diseases	Number of cases	Disease type	Reduced number of cases	Increased number of cases
1	Upper Respiratory Tract Infection	1316	Fighting cases	903	Malaria	575	
2	Malaria	1207	Upper Respiratory Tract Infection	902	Intestinal Parasites	679	
3	Intestinal Parasites	1109	Malaria	632	Diarrhea	815	
4	Diarrhea	1015	Intestinal Parasites	430	Rheumatic pain	242	
5	Fighting cases	653	Skin diseases	385	Eye diseases	27	
6	Tonsillitis	494	Lower respiratory tract infection	383	Skin infections		261
7	Rheumatic pain	442	Eye diseases	328			
8	Gastritis	403	Gastritis	306			
9	Eye Diseases	355	Urinary tract infections	202			
10	Skin infections	124	Diarrhea	200			
	Total	7118		4671		2338	260

Source: TAHO. January 2010.

Annex 11: List of Tole Ana WaSH Team Members

S.No.	Name of Ana WaSH Team Members	Sex	Educational Background
1.	Gelaye Lenjisa	Male	TTI
2.	Merga Awasie	Male	College Diploma
3.	Teshome Daeti	Male	College Diploma
4.	Tilahun Lemessa	Male	College Diploma
5.	Desta Gurara	Male	College Diploma
6.	Aregash Daba	Female	College Diploma
7.	Guluma Defaru	Male	College Diploma

Source: OBoWR , WaSH Support Staff

Annex 12: List of Community Facilitator Team (CFT) Members of Tole Ana

S.No.	Name of CFT member	Sex	Educational Background
1.	Aregash Likassa	Female	12 complete
2.	Boressa Nega	Male	12 complete
3.	Shimelis Hailu	Male	12 complete
4.	Bayush Kebeta	Female	12 complete
5.	Gobene Bayera	Female	12 complete
6.	Disassa Ashame	Male	12 complete

Source: OBoWR, WaSH Support Staff

Annex 13: List of Local Service Providers (LSP) Trained on water supply development activities in Tole Ana.

S.No.	Name of LSP member	Sex
1.	Tariku Lemessa	Male
2.	Melese Alemayehu	Male
3.	Workneh Assefa	Male
4.	Kassahun Feyisa	Male
5.	Kinde G/Mariam	Male

Source: OBoWR, WaSH Support Staff

Annex 14: Existing Material Resources of Tole Ana Water Resource Office:

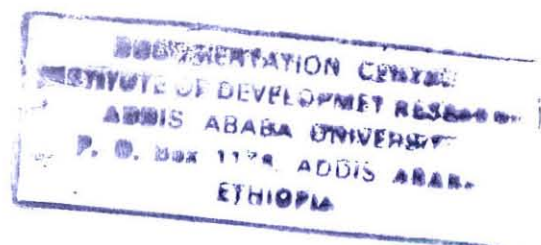
S.N.	Item	Unit	Quantity	Status	Remark
I	Office Equipments				
1	Chair	Pcs	11	functional	
2	Table	Pcs	8	functional	
3	Desk top computer	Pcs	1	functional	
4	Printer	Pcs	1	functional	
5	Fixed phone line	Pcs	1	functional	0113130050
II	Technical tools				
1	Multimeter	Pcs	1	functional	
2	Test light	Pcs	2	functional	
3	Open and closed wrenches	Pcs	4	functional	inadequate
4	Pipe cutter	Pcs	1	functional	
5	Pipe threader	Pcs	1	functional	
6	Screw Driver	Pcs	4	functional	
7	Pinsa	Pcs	3	functional	
8	Tripod	Pcs	1	functional	
III	Machines and transportation facilities				
1	Dewatering pump	Pcs	1	Non-functional	Being under-maintenance
2	Generator	Pcs	1	Functional	
3	Motor Bicycle	Pcs	1	functional	

Remark – As far as professional equipments and materials are concerned, the Ana (Woreda) Water Resources Office doesn't have any professional equipments and materials like surveying instruments, Geophysical instruments, GPS, Drawing boards, software like Autocad and Watercad, topographic maps and aerial photos.

Annex 15: Approved Job Titles and List of Existing manpower in Tole Ana Water Resources Office

S.N.	Position	Qualification	Level of Education	Year of experience	Service year in this organization	Sex
1	Head, Ana Water Resource Office	-	-	-	-	
2	Secretary	-	-	-	-	
3	Customer Service	-	-	-	-	
4	Water Supply Construction process owner	-	-	-	-	
5	Engineer	Water supply	10+3	2	2	F
6	Geologist/Hydrogeologist	-	-	-	-	
7	Socio-economist	-	-	-	-	
8	Water supply and sanitation technician	Water supply	10+3		7	M
9	Water supply and sanitation facility process owner	Electro-Mechanic	10+3	3	3	M
10	Electrician	Electro-Mechanic	10+3	4	4	M
11	Mechanic	Electro-Mechanic	10+3	2	2	M
12	Plumber	-	-	-	-	-
13	Water supply and sanitation technician	Water supply	10+3	5	4	M
14	Water supply and sanitation technician	Water supply	10+3	1	1	M
15	Water resource management process owner	-	-	-	-	-
16	Engineer	-	-	-	-	-
17	Water quality technician	-	-	-	-	-
18	Civil Engineer	-	-	-	-	-
19	Irrigation and drainage dedicated team owner	-	-	-	-	-
20	Engineer	Irrigation technology	10+3	2	2	M
21	Engineer	Irrigation technology	10+3	2	2	M
22	Engineer	Irrigation technology	10+3	2	2	M
23	Engineer	-	-	-	-	-
24	Geologist/Hydro-geologist	-	-	-	-	-
25	Agronomist	-	-	-	-	-
26	Sociologist	-	-	-	-	-
27	Surveyor	-	-	-	-	-
28	Surveyor	-	-	-	-	-
29	Mechanic	-	-	-	-	-
30	CAD technician	-	-	-	-	-
31	Process assistant	-	-	-	-	-

Source: TAWRO



Annex 16: Approved Job Titles and List of Existing Manpower of South-West Shewa Zone Water Resources Office

S.N.	Position	Qualification	Level of Education	Year of experience	Service year in this organization	Sex
1	Head, Zonal Water Resource Office	<i>Water supply</i>	<i>College Diploma</i>	21	17	M
2	Secretary	<i>Typing</i>	<i>Academic</i>	6	2	F
3	Plan and budget preparation works executer			-	-	
4	Executer for monitoring and evaluation works of plan execution	<i>Economics</i>	<i>B.A.</i>	<i>3 months</i>	<i>3 months</i>	<i>M</i>
5	Information and documentation expert					
6	Human Resources Management works executer	<i>Electricity</i>	<i>College Diploma</i>	16	1	F
7.	Driver III	<i>Academic</i>		5	2	M
8.	Driver III	<i>Academic</i>		1	1	M
9.	Driver III					
10	Driver III					
11.	Costumer service					
12	Water Supply Construction core process owner	<i>Hydro-geology</i>	<i>M.Sc.</i>	13	13	M
13	Secretary	Water supply technology	<i>College Diploma</i>	6	1	F
14.	Engineer	Hydraulic Engineering	<i>B.Sc.</i>	6	6	M
15	Engineer	Hydraulic Engineering	Advance Diploma	4	4	M
16	Engineer	Civil Engineering	<i>B.Sc.</i>	4 months	4 months	M
17	Community coordinator	Law	<i>B.A.</i>	20	6	M
18	Community coordinator					
19	Geologist/Hydro-geologist					
20	Geologist/Hydro-geology					
21	Electro-Mechanical	Auto-Mechanic	Technical Diploma	23	4	M
22	Geo-physist					
23	Surveyor	Surveying	College Diploma	1 month	1 month	F
24	GIS and remote sensing expert	Geology	<i>B.Sc.</i>	2	2	M

S.N.	Position	Qualification	Level of Education	Year of experience	Service year in your organization	Sex
25	Electrical/Civil Engineer and Core process owner of Water supply facility					
26	Water/Civil Engineer					
27	Sociologist/Socio-Economist					
28	Community Auditor					
29	Electrician	Electro-Mechanical technology	College Diploma	4	4	M
30	Mechanic	Auto-Mechanics	College Diploma	13	13	M
31	Plumber	Auto-Mechanics	College Diploma	5	5	M
32	Mechanical/Electrical Engineer	Electro-Mechanical technology	College Diploma	4	4	M
33	Chemist/Biologist	Laboratory technology	College Diploma	21	21	M
34	Irrigation water supply and drainage Core Process owner					
35	Secretary					
36	Engineer	Irrigation Engineering	B.Sc.	1	1	F
37	Engineer	Irrigation Engineering	B.Sc.	3	3	M
38	Engineer	Irrigation Engineering	B.Sc.	1	1	M
39	Engineer					
40	Engineer					
41	Engineer					
42	Geologist/Hydro-geologist					
43	Hydrologist					
44	Agronomist					
45	Agronomist					
46	Environmentalist					
47	Pedologist					
48	Economist					
49	Sociologist					
50	Surveyor	Surveying	College Diploma	1 month	1 month	
51	Surveyor					

S.N.	Position	Qualification	Level of Education	Year of experience	Service year in your organization	Sex
52	Surveyor					
53	CAD Expert					
54	GIS Expert					
55	Information and Documentation Center Expert					
56	Water Resource Engineer					
57	Water quality Expert/ technician					
58	Hydrologist					
59	Hydro-geologist					

Source: SWSHZWRO

Remark : According to the current organizational structure of the zonal water resource office, the approved job titles are 59 (22 for the water sub-sector , 26 for irrigation and drainage sub-sector and 11 supporting staffs of both sub-sectors). Out of these approved job titles, only 24 workers have been assigned so far accounting 40.67% of the total job titles approved for the office.

Annex 17: KII Participants and their Organization

S.N.	Organization	Position	Quantity
1	Regional Water Resources Bureau	Planning, Programming and Monitoring and Evaluation Process Team	2
		WaSH Program Coordinator	1
		WaSH Program Support Staff	1
3	Regional Health Bureau	Sanitation and Hygiene Program Support Staff	1
4	NGO		
	OSRA	Program Manager	1
	OSRA	Monitoring and Evaluation Program Officer	1
5	Zonal Water Resources Office	Delegate of zonal water resources office and Water Supply Construction Process Owner.	1
		Water Supply Facility Process Team - Representative	1
		Water Resources Engineer	1
		Irrigation water supply and Land drainage process team	1
5	Tole Ana/Woreda/		
	Ana Water Resources Office	Head	1
		Experts	2
	Tole Ana Office of Finance and Economic Development	Delegate of the Office and Purchasing and Financial Administration process team owner	1
		Budget expert	1
	Tole Ana Health Office	Experts	2

Annex- 18 : List and Background of Key Informants:

S/N	Name	Organization	Position in the Organization	Educational level	Profession	Job Experience
1	Ato Gelaye Lenjisa	Woreda Administration	Current Chief Administrator	TTI		
2	Ato Abebe Mosisa	Ana Finance & Economic Dev't Office	Process Owner of Purchasing and Financial Administration	B.A	Accounting	
3	Ato Retta Mekonnin	Ana Finance & Economic Dev't Office	Planning and Budget Executer	B.A	Accounting	
4	Ato Birhanu Yadessa	Tole Ana Health Office	Communicable diseases monitoring and prevention			
5	Ato Alemayehu Leta	Tole Ana Health Office	Communicable diseases monitoring and prevention			
4	Ato Shiferaw Misganaw	Ana Water Resources Office	Head	10+3	Irrigation technology	2
5	Ato Solomon Tadesse	Ana Water Resources Office	Mechanic	10+3	Electro-mechanical technology	2
6	W/ro Ifu Shumi	Ana Water Resources Office	Engineer I	10+3	Water supply and sanitation technology	2
7	Ato Kinde Tadesse	Zonal Water Resources Office	Delegate of Head, ZWRO	M.Sc.	Hydrogeology	13
8	Ato Mesfin Assefa	Zonal Water Resources Office	Irrigation water supply process owner	B.Sc.	Irrigation Engineering	3
9	Ato Nuguse Feye	Zonal Water Resources Office	Engineer	B.Sc.	Civil Engineering	4 months
10	Ato Terefe Damesa	Zonal Water Resources Office	Delegate, Water supply facility process team	10+3	Electro-mechanical technology	7
11	Ato Lechisa Edosa	Oromia Water Resources Bureau	Head, Planning, Budgeting and M&E process team	M.A	Environment and Development	19
12	Ato Samuel Tolesa	Oromia Water Resources Bureau	WaSH Program Coordinator	M.A	Environment and Development	20
13	W/ro Woynshet Tafesse	Oromia Water Resources Bureau	Senior Planning Expert	B.Sc.	Agricultural Economics	21
14	Ato Melka Beyene	Oromia Water Resources Bureau	WaSH program regional support staff	B.Sc.	Geology	17
15	Ato Aberra Aseffa	Oromia Health Bureu	Sanitation and hygiene support staff	B.Sc.	Sanitarian	
16	Dr. Alemayehu Mechesa	OSRA	Program Manager	Ph.D	Hydrogeology	22
17	Ato Wondimu Geleta	OSRA	M&E Program Officer		Economics	22

Annex 19: Structured Questionnaire for household survey in Tole Ana

Survey Objective: To examine the accessibility, per capita water consumption, adequacy, affordability tariff setting procedures and to explore the level of community involvement in the implementation of the water supply scheme. I cordially request you to provide information to the best of your knowledge, and I assure you that no information will be processed according to the name of the informant.

Not	Household identification number		
2	Date of interview		
	Name of interviewer		
	Name of supervisor		
3	Ana /Woreda/		
4	Ganda /Kebele/		
5	Got /Hamlet/		
6	Name of household head or partner		
7	Sex of household head or partner		
8	Family size of the household		
9	Education status		
10	Accessed to safe water supply	1. Yes 2. No	
11	Type of safe water supply source	1. Hand dug well with hand pump 2. Spring on spot 3. Shallow well with hand pump 4. Spring with distribution system 5. Deep well with distribution system	
12	Construction year of the water supply scheme (UAP implementation year)	1. 2006 2. 2007 3. 2008 4. 2009	
13	The time it takes to reach the water source for single trip	1. 15 minutes or less 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. More than one hour	
14	Liters of water fetched per household per day	1. One jerikan (20 liters) 2. Two jericans (40 liters) 3. Three jericans (60 liters) 4. Four jericans (80 liters) 5. Five jericans (100 liters) and above	
15	Availability of water service (in terms of delivery hours per day)	1. 24 hours (private connections) 2. 8 hours 3. 6 hours 4. 4 ours 5. 2 hours 6. 1 hour or less	

16	Adequacy of the water source (discharge level)	<ol style="list-style-type: none"> 1. Adequate and no need to wait for long queue 2. Inadequate and needs to wait for long queue 	
17	If inadequate water source, time taken for waiting queue	<ol style="list-style-type: none"> 1. 15 minutes or less 2. 16-30 minutes 3. 31-45 minutes 4. 46-60 minutes 5. More than one hour 	
18	Availability of water use charge	<ol style="list-style-type: none"> 1. Yes 2. No 	
19	If there is water use charge, what sort of charge?	<ol style="list-style-type: none"> 1. Tariff-based payment on the instant of service delivery 2. Flat rate (uniform payment on monthly basis) 	
20	If there is a water tariff, What is the public fountain tariff rate per m ³	<ol style="list-style-type: none"> 1. 1.5 Birr 2. 2 Birr 3. 2.5Birr 4. 3 Birr 5. 4 Birr 6. 6 Birr 7. Other, specify 	
21	If payment is on monthly basis, water is the monthly payment rate per household?	<ol style="list-style-type: none"> 1. 1 Birr 2. 2 Birr 3. 3 Birr 4. 4 Birr 5. 5Birr 6. others, specify 	
22	Had the water tariff setting procedure been participatory and reached on consensus between the community and the tariff study team before it was put into action?	<ol style="list-style-type: none"> 1. Yes 2. No 	
23	Affordability of the water tariff by the community especially by lower income groups	<ol style="list-style-type: none"> 1. Affordable 2. Non-affordable 	
24	Do you think that there a household who fail to use the newly developed potable water source due to affordability (Economic) problem?	<ol style="list-style-type: none"> 1. Yes 2. No 	

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Annex 20: Guiding Questionnaire for KII

I. General Information:

- 1.1 Name of the Organization: _____
1.2 Type of the Organization: _____ (GO or NGO)
1.3 Sex: _____ 1.4 Age _____
1.4 Year of Service: _____
1.5 Position _____
1.6 Department: _____ 1.7 Qualification _____
1.8 Your responsibility in Water Supply and Sanitation Activities _____

II. Universal Access Program (UAP) Related Questions:

1. Do you know any about the water supply and sanitation UAP?
2. What are the Goals and Objectives of UAP?
3. What is the time frame for UAP?
4. *Do you think that UAP goals and objectives are really achievable in the specified period of time?*
5. *Do you think that UAP is well communicated in your organization and among other stakeholders?*
6. *Does your office have the potential to implement the stated UAP in the specified time frame?*

III. SWOT Analysis

- 3.1 *What are the strengths of your organization to implement UAP (Strategic plan)? Discuss them in order of their importance.*
- 3.2 *What are the weaknesses of your organization to implement UAP (strategic plan)? Discuss them in order of their importance.*
- 3.3 *What are the potential opportunities to implement UAP (strategic plan)? Discuss them in order of their importance.*
- 3.4 *What are the potential treats to implement UAP (strategic plan)? Discuss them in order of their importance.*
- 3.5 *What are the challenges your organization is facing in the implementation of the UAP (strategic plan)?*
- 3.6 *Discuss attempts against the weaknesses, treats and challenges.*

IV. Stakeholders' Coordination related questions:

1. *Who are the stakeholders which have got direct and indirect link with your organization in relation with water supply and sanitation program? (List them in order of priority)*
2. *What are the major roles and responsibilities of these stakeholders?*
3. *How is your organization's interaction and work with these stakeholders and partners who are being involved in water supply and sanitation program? (What are the systems of communication, with what frequency? etc)*

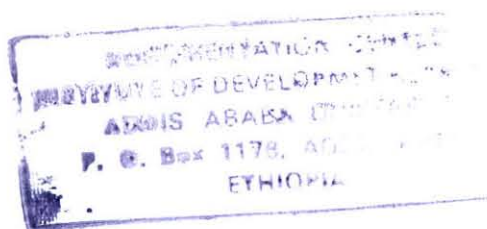
4. What are your comments about coordination and participation issues with different stakeholders who have a link with water supply and sanitation program implementation?

Stakeholders Coordination Summary Table.

Type of Stakeholder	Level of Coordination				Score	Remark
	No communication with the Bureau (0%)	Communicate whenever there is a need or compelled to do so by external body (25%)	Good communication on very important issues (50%)	Strong communication on very important issues (study, implementation, M.& Evaluation)(75%)		
NGOs						
Donors						
GOs						
Private sectors						
Cumulative score						

IV. Budget (Finance) Related Questions

- 1) Does the five years strategic plan have a well articulated Budget (Finance) Plan?
- 2) If your answer for question number 1 is yes, who were the expected potential financial sources for the implementation of the water supply and sanitation UAP and the five years strategic plan of the water sector?
- 3) What proportion of the intended budget has been secured in the past four years' time of the UAP (1998-2001 E.C.) both for capital and recurrent budget from each financial source?
- 4) Do you think budget shortage to be one of the challenges for the attainment of the water supply and sanitation UAP targets (100% water supply coverage and 100% improved sanitation) by the end of the program period (2012 G.C.)
- 5) If you think that budget constraint to be a challenge to implement the water supply and sanitation program, what do you recommend as a solution for the attainment of the UAP targets with the current trend of budget allocation?
- 6) Had there been budget utilization problems in the implementation of water supply and sanitation UAP in the past four years of the program implementation periods (2006-2009)?
- 7) If your answer for question number 6 is yes, specify the reasons for under or over utilization of budget?



Annex 21: Semi –structured Guiding Questionnaire for KII with Community Elders and Kebele Leaders.

I. General Information:

Name of the Informant _____

Sex _____ Age _____ Education Background _____

Position _____

Responsibility in Water Supply and Sanitation Activities _____

II. Specific Water Supply and Sanitation Related Questions:

1. Have you got access to potable water supply? If yes, what type of water source do you use? Is it adequate for user the community?
2. If you don't have potable water source, what water source do you use?
3. If you have potable water source, had the community been involved in the construction of potable water source? If yes, in what terms and at what stages of the project had the community been involved?
4. How did you find the quality of the water supply? (Poor, fair, good, very good, Excellent)
5. If your response is poor, what quality problem have you observed on the water supply?
6. How do you judge the construction quality of the constructed water supply system? (Poor, fair, good, very good, Excellent)
7. If your response for question number 6 is poor, what construction defects have you observed on the constructed water supply system?
8. Do you think that the user community has developed sense of ownership on the constructed water supply scheme?
9. Had the user community been provided with relevant education of awareness creation on the importance of potable water supply, improved sanitation and hygiene practices?
10. What challenges did you observe during the construction of this water supply project?
(Failure to complete it within its time schedule, design and technology selection problem, poor construction quality, failure to participate the user community and/or others if any)
11. Had the community constructed and started to use pit latrines? If yes, do they use hand washing facilities up on their return from toilets?
12. How do you judge the quality of the constructed pit latrines? (Poor, fair, good, very good, Excellent). Do pit latrines have top and side covers which protect them from collapse during rainy seasons?

Declaration

I, the undersigned, declare that the thesis is my original work, has not been presented for a degree in any university and that all sources of materials used for the thesis have been duly acknowledged.

Declared by:

Awoke Gulilat

Abs

Candidate

Confirmed by:

Deqif Tasse
Deqif Tasse

Advisor

