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An Assessment on Role of Community Participation in Rural Water Supply Project: The case of Debati Woreda, Benishangul Gumuz Regional State

By: Mezegibe Endashaw

June 2011
Adds Ababa, Ethiopia

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By: Mezegibe Endashaw

Advisor: Belay Simane (PhD)

A thesis submitted to College of Development Studies
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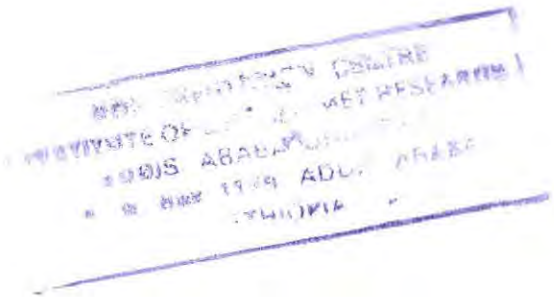

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Water and Development

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By

Mezegibe Endeshaw Abebe

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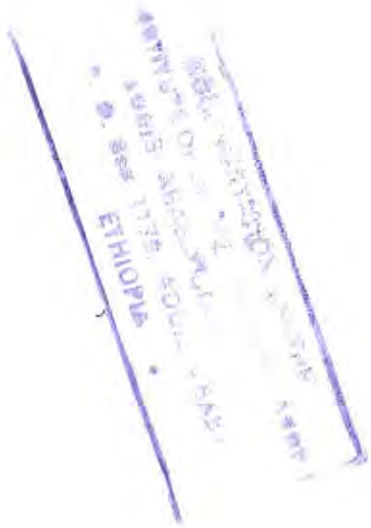

List of Acronyms

BGRS	Benishangul Gumuz Regional State
CSO	Civil Society Organization
CPC	Community Project Committee
ESRDF	Ethiopian Social Rehabilitation Development
FDG	Focus Group Discussion
HH	Household
ICWE	International Conference on Water and Environment
IDWSD	International Drinking Water Supply and Sanitation Decade
MDG	Millennium Development Goal
MoWR	Ministry of Water Resource
MOH	Ministry of Health
MoFED	Ministry of Finance and Economic Development
PASDEP	Plan for Accelerated and Sustainable Development to End Poverty
Ripple	Research inspired policy and practice learning in Ethiopia and Nile region
RWSP	Rural Water Supply Project
TASAF	Tanzania Social Action Fund
U NDP	United Nation Development Program
UNICEF	United Nation Children's Fund
WASH	Water Supply, Sanitation and Hygiene
WWDO	Woreda Water Desk Office
WSP	Water Supply Project
WSDP	Water Sector Development Program

Abstract

This study was aimed at examining the role of community participation on rural water supply project. Two Kebeles of Debatie Woreda- Aman Amba and Yamp, in Benishangul-Gumuz Regional State were used as study sites. Data collection techniques include interviews, structured questionnaire and focus group discussion. Hundred households were selected on voluntary basis and completed the structured questionnaire. Twenty-one focus group discussants and three key informants were also involved to generate primary data. Both quantitative and qualitative methods were used to analyze data. The finding indicated that the participation of the community in water supply project in both study sites was generally low. Implementing agencies mobilize the community mainly at the construction/implementation stage. Because of this, community's participation at the implementation or construction phase is more active as compared to other stages of the water supply project. Institutional supports like capacity building, provision of spare parts, and follow up, impact assessment are limited and these results in poor management of the water supply scheme. Finally, recommendations were given to improve the participation of the community in rural water supply project. Creating better awareness among the community about the needs of community participation on water supply project; mobilizing the community starting from the project planning stage to monitoring and evaluation of the scheme; setting criteria for the selection of trainees and providing adequate training for WC member and users to carry out the operation and maintenance of water systems, and making use of trained water attendants. All these are areas, which needs improvement on the side of implementing agency. Diversified analysis based on the different stakeholders should be central to any rural water planning. Both implementing agency and the community have to involve in identifying factors that prevent communities from participation. Opposition regarding implementation of the project requiring capital cost and other contributions from the communities is emerging. It is crucial to know whether this has any positive or negative implications on future outcomes.

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CHAPTER ONE

Background

1.1. Introduction

According to the World Health Organization [WHO] (2000), today more than one billion people in the world still lack access to safe drinking water while over two and half billon people live without even the most basic sanitation facilities. Without water, sanitation and hygiene education, vulnerable communities are trapped in the cycle of diseases and poverty. In their struggle for economic and social development, the challenges facing many countries in the world today are increasingly related to water.

Water is a very important issue on United Nations agenda. Reducing the proportion of people without adequate access to water and basic sanitation is one of the key Millennium Development Goals (MDG). While access to sufficient and clean drinking water may be taken for granted in the developed world, problems with access are most severe in the developing world where more than five million people perish every year from water related diseases and more than one billion people suffer without access to water for their basic needs (Henry, 2007).

Lack of suitable supply of water lies at the root of many developing countries. Besides fulfilling basic life requirement, water availability is a corner stone for satisfactory sanitation, public health, agricultural production and urban development (WHO, 2000).

Africa has the lowest water supply and sanitation coverage compared with other regions in the world. More than 30% of Africans residing in urban areas currently lack access to adequate water service and facilities. In the year 2000, World Health Organization (WHO) report indicates that Africa contains 28% of the world population without access to improved water supplies and 13% of world's population without access to improved sanitation. Only 62% and 60% of African population have access to improved water supply and sanitation respectively (WHO, 2000).

According to Ministry of Water Resource [MOWR](2006) report, in Ethiopia, about 85% of the population lives in rural area. Out of this population, 39 million people are facing a problem in getting clean water and 339 thousands of them are in Benishangul Gumuz Regional State (BGRS). Furthermore, water supply in the rural area of the country is lower as compared with the number of people served with improved water supply in urban centers (Asefa, 2005)

Among the four Dublin Principles of 1992(see Box 1), one states that water resources development and management should be based on a participatory approach, involving all relevant stakeholders. The fundamental principles of Ethiopian water resource also states that all citizens shall have access to sufficient water to satisfy basic human needs and water resource development shall be under pinned in rural centered and participatory approach (MOWR, 2000).

Box 1: The Four Dublin Principles

1. Water is a finite, vulnerable and essential resource which should be managed in an integrated manner.

2. Water resources development and management should be based on a participatory approach, involving all relevant stakeholders.

3. Women play a central role in the provision, management and safeguarding of water.

4. Water has an economic value and should be recognized as an economic good, taking into account affordability and equity criteria.

Source: ICWE, 1992

True participation is ensured only when all stakeholders are involved in decision making .This is due to the fact that the development of water project is beyond the capacity of a sin gle individual (ICWE, 1992). However, many of the water projects in rural Ethiopia are undertaken with less community participation and often they fitted poorly into the demand. Lack of participatory techniques, rush implementation and poor design together gives poor results (Sylvian et al., 2006).

The ultimate aim of different water supply projects constructed by government institutions and NGOs is to alleviate the problem of water stress and to reduce women's burden in terms of time and energy. It is also aimed to provide safe water for improving health status of the population through reducing water borne diseases. Despite this, most of the outcomes of water supply projects intended for the above objective are not realized sustainably.

In designing social programs, the community may be the most accurate source for identifying and prioritizing relevant needs because they are familiar with their needs and their relative urgency. They can also provide critical input on the numerous requirements for a successful project such as identifying cultural barriers as well as opportunities that can be derived from the local community. Community's participation should not be limited to a certain stages of a project. Effectiveness of a project increases when it provided the chance for community participation at every stage of the project. This explains that the serious problems encountered by water projects may be the result of less involvement of the community and the absence of consultation with beneficiaries (Bernado, 1998).

Rural water supply projects are not claimed only to provide water rather they are expected to improve health and encourage economic activities of the beneficiaries. Because of this, water supply projects involve large number of partners, each with different roles and functions. These include government institutions, the private sector, NGOs, civil society organization, local community and individuals. Individuals and communities have an important role to play in water supply project activities. Individuals are expected to invest capital, labor and improve resource management practices. Communities are also responsible to manage common resources, improve their organizational set up, undertake and maintain projects, and generally, they participate as project initiators and operators of community schemes.

Many projects' sustainability is uncertain. They work for short periods and collapse after funding institutions cease to provide support both financially and technically. In Debatie Woreda, five different government and nongovernmental organizations had been involved in rural water supply since 1988. Out of the total hand pump (HP) schemes constructed in the Woreda, 29 schemes were implemented by CEPAR, 14 by Godana Local NGO, 24 by regional government

with the assistance of UNICEF, 9 schemes by Tadiso fund and water points and 5 by WESMICO local NGO. However, most of them lasted only for a short period due to a number of factors like system failure, lack of regular maintenance, lack of funds for the manipulation of the systems, lack of accountability, control and legitimacy.

Even though there is no research conducted on community participation in the study area, Dereje (2007) has tried to assess the sustainability of RWS schemes in one of the Weredas in the region. Similarly, Melkamu (2008) investigated problems and prospects of rural water supplies and management in Kumruk Woreda of BGRS. Another study conducted by Babekir (2009) focused on constraints and community participation in RWS in Asossa and Kamash Zone. The present research believed to fill the gap regarding the role of community participation on RWSP.

1.2 Statement of the problem

Development of water resources in Africa systematically fails especially when it comes to safe water provision. At present, it is estimated that over 200 million out of 700 million people in the continent do not have access to safe water, particularly in the rural areas. Nineteen percent of the population has access to clean water supply for domestic and municipal uses. Estimates of the average per capital water consumption vary between 10 and 20 liters per day, with as little as 6 liters per day in some areas. This per capital water consumption is one of the lowest in the world (Asefa, 2005). According to MoWR (1995), about 12% of rural and 70% of urban population have access to safe water while the national sanitation coverage is only seven percent. Only 2% of the population has access to solid waste disposal facilities.

Among the different approaches followed by organizations involved in WSP, a demand-driven approach (bottom-up approach) based on empowerment of villagers to ensure their full participation in pre-planning, planning and implementation, decision-making in the choice of scheme used by some organizations. This focuses on village level capacity building and cost sharing by users. Different organizations also follow different methods in addressing the approaches followed (Tarekegne, 2009).

Decentralization and stronger user involvement, faces many constraints for NGOs, agencies and communities. On the side of the agencies, there is a strong tradition and focus on construction of water supply systems. Little emphasis was put on building of the management capacity at local level because of a lack of experiences and strategies. On the community side, there is often a lack of experience with management of water supply systems and lack of tools to cope with their operation. Other related problems regarding management include insufficient knowledge of indigenous management systems, partial coverage of user populations, lack of effective and equitable financing systems, insufficient capacity building, absence of suitable management tools, environmental degradation of watersheds and absence of proper gender balance in planning for, contributions to and control over the established water service (Lammerink, 1998).

Thwala (2001) pointed out that public participation in planning and management of development project is crucial to their lasting success. In community participation, the values and interest of the community should be a guideline for development processes. Since they are well informed about their local situation, communities in rural area should have opportunity to identify, define and prioritize their needs.

According to Agarwal et al (2000), water is a subject where everyone is a stakeholder. Real participation only takes place when stakeholders are part of the decision-making process. This can occur directly when local communities come together to make water supply, management and use choices. Participation also occurs if democratically elected or otherwise accountable agencies or spokespersons can represent stakeholders. Additionally, there are circumstances in which participation in decision-making can take place through market processes. If appropriate pricing systems are in place, local governments, community organizations or irrigation districts could signal their demands for bulk water services. The type of participation will depend upon the spatial scale relevant to particular water management and investment decisions and upon the nature of the political economy in which such decisions take place.

Involvement of key stakeholders like the community, government and charity organizations are paramount important on the development of water projects. According to the researcher's experience among many water supply schemes constructed in the study area, a greater number are out of use. Consequently, the people in the study area face serious domestic water supply problem. Abiot (2010) examined the performance of rural water supply schemes in the present study site but he failed to give emphasis on community participation. This study was intended to explore the role of community participation on rural water supply project. It focuses on degree of community participation (CP) in all stages of water supply projects; extent of agency's effort to mobilize the community on the water supply project; constraints of community participation, extent of institutional supports for the management of the scheme and feeling of community to the water scheme.

1.3 Objective

The general objective of the study is to assess the role of community participation on rural water supply projects for the provision of sustainable rural water supply service.

Specific Objectives

1. To examine the extent of community participation on RWSP
2. To investigate potentials and constraints facing community and implementing agency on rural water supply
3. To asses responsibility of community on the rural water supply projects

1.4. Research Questions

This research raises the following questions and it try to answer them based on the above objectives.

1. To what extent the communities participate in all stage of water supply project work?
2. How do the implementing agencies mobilize the community during the project work?
3. How does the community perceive community participation?

4. What are the potentials and constraints facing the community and implementing agencies on rural water supply?
5. How communities empowered and helped to participate on water scheme management?

1.5. Significance of the study

In both urban and rural setting, the size of population is increasing rapidly from time to time. Rapid growth of population results high demand for potable water services. To meet the demand of potable water with its quality, quantity and sustainability for the growing population, there is a need for active community participation, and NGOs interventions and support. Therefore, the results of this study are expected reveal empirical evidence for actors pertaining to the involvement of the community on WSP. It will also sensitize both government organizations and NGOs to ameliorate the problem of water supply projects. Furthermore, the research work will also contributes additional knowledge on the existing research findings on the area of water supply projects and serves as starting point further study.

1.6 Scope and Limitations of Study

This study confined to two Kebeles of Debatie Woreda- Aman Amba and Yamp. In spite of a number of water schemes constructed in these two sites, majority of the schemes are not functional. This serious problem and m y experience of water shortage in the two Kebeles motivated me to focus the two sites as cases. The study focuses mainly on the role of community participation on rural water supply projects.

One limitation of the study is that experts at WWD were not interested to give better information as most of them have limited experience in relation to water supply projects. Absence of well-documented and consistent data from the WWD is another drawback that limits the study. In addition, the lack of data on total households at both Kebeles forced the researcher to use voluntary samples for the study. Moreover, since the data were collected at busy harvesting times, men were not easily available to complete the structured questionnaire. As a result, women, who often stay at home, were oversampled.

1.7 Organization of the Thesis

This thesis consists of five chapters. The first chapter introduces the study. It includes background, statement of the problem, the research objectives and scope of the study. Chapter 2 presents a review of prior studies and theories pertinent to the study. Chapter 3 focuses on the research methodology applied for the study. It discusses about the materials used to collect data, the procedure used to collect data and the data analysis technique. It also gives a description of the study area. Chapter 4 describes the results and makes discussion in light of the findings. The last chapter, chapter 5, presents the conclusion and recommendations of the study.

CHAPTER TWO

2. Literature Review

2.1 Definition of terms

Community

Community is defined as a group of people with common needs, while UNDP defined community as a group of people living in a geographical defined area, or a group that interacts because of common social, economic, or political interests (TASAF projects handbook, 2005:cited in William, 2009).

Participation

Participation is an approach through which beneficiaries and other stakeholders are able to influence project planning, decision-making, implementation and monitoring phases. On the other hand, participation considered as a prerequisite for project ownership, successful implementation and sustainability of the projects in question. Participation does not mean acceptance of all ideas from diverse groups. In participation, there is a need to combine indigenous and intellectual knowledge. However, care must be taken so that intellectual knowledge does not influence that of the indigenous (Kasiaka, 2004).

Community participation

Different definitions were given to community participation Wagner (1959) define community participation as it refers to an active process shared by beneficiaries that influence the direction and execution of development projects rather than receive share of project benefits or involvement of people in project to solve their own problem. Community Participation means that community plays an active role in its own affairs by sharing and exercising political and economic power or community involvement in development projects. It might include any of the following: Prioritization and vocalization of community needs; Selection of appropriate

The Foreign also accounted the larger percentage of the expenditure in road construction representing about 53% of the total money disbursed for constructed while the locals account about 40.2% of the expenditures.

Generally about 93.2% of the money is contracted to the private sector while the rest 6.8% or the public sectors throughout the 13 Years period. The is a good way in leaving the areas for the private sector about more progress should be there for the more involvement of local contractors for taking the highest part in the total km awarded and money contractor.

In general a total of 14 local and 48 forging contractors are involved in the 13 years period. The RSDP has given impetus to the local contractors for participation in the program by giving priority in government financed projects and in some cases in donors financed projects. In the case of consultants, around 48 local consultant and 61 foreigners have participated the foreigners participating higher than the locals as the contractors, but the later exceeding in handling large number of project.

4.2. Recommendation

Based on the forgoing study, some measures which have to be taken to support local construction company in the involvement of road sector development program this can be recommended as follows:

- To encourage the entrance of local contractors into industry the government should ask minimum capital requirement.
- Capital and equipment constraints are the major problem of local construction companies to minimize this government arranges their loaning system of the bank to build their capacity.
- The other one is that of local contractors have not enough experience in project management of huge project to avoid this give continuous training program for local labor forces.

facilities, technologies and locations; financial contribution to capital costs; Provision of labor for construction of systems and facilities; Management of operation and maintenance; Setting and collection of water tariffs; or Physical maintenance and repair activities.

On the other hand Singh ISS RP, (2005), community participation means a process by which individuals, families or communities assume responsibility for local problems and develop a capacity to contribute to their own community development. Community participation also defined as an active process whereby beneficiaries influence the direction and execution of development projects rather than merely receive a share of a project's benefits. This definition given in the above collectively indicates participation by beneficiaries rather than external personnel, stressing the involvement of beneficiaries in groups, and refers to a process rather than a product.

Community mobilization

Participation and mobilization used interchangeably but in this study mobilization differs from participation. Community mobilization refers to preparing the people for the active participation on the project. It is a process to facilitate participatory decision-making, planning and implementation, and can be stimulated by a community itself, or by others. It also described as the process that begins dialogue among members of a community to determine who, what, and how issues are decided, and to provide a path for everyone to participate in decisions that affect their lives (Peter.H & Bob. R, 2004).

2.2 Participation on rural water supply project

Participation is all about enabling communities to help themselves by utilizing their own skills and resources. Communities will be committed to their projects and feel a sense of ownership for them. (John Butterworth.et.al, 2009) argues that Communities are being involved in all stages from the planning to the building and managing of their water, sanitation and hygiene schemes. Long-term solution can found that are suited to their needs, preferences and resources. Rather than being imposed by outside, projects should solve the communities own problems in a way

that is appropriate and manageable for them with detailed understanding of the how and why of water supply, sanitation and hygiene facilities.

Community members explain their priorities appropriate contributions to the projects. Participation involves joint planning and self-analysis this includes; Local people's knowledge and views, women in decision-making and receive equal training opportunities, this process motivates people to take action and to bring changes in their lives. While Community project committee (CPC)are formed to ensure that tariff rates, spare-parts and mechanical costs, as well of the quality and frequency of maintenance, are kept on a suitable level. They are also responsible for managing the operation and maintenance of facilities through user fees and other community's contribution (Thwala, 2010)

According to Tegegne (2009) a motivated community is the one that needs the service more and therefore considers the scheme as its own property. As a result, schemes constructed by community motivation are likely to be sustainable. Effective O and M is essential for sustainability and village level O and M is one of the ways through which sustainability can achieved. In cases of scarce government, resources the money collected from cost recovery can used for capacity building such as sanitation education and village level maintenance training which can play great role in sustaining the services.

The objectives of community participation are empowerment, beneficiary capacity building, increasing project effectiveness, improving project efficiency and project cost sharing. Ultimate community participation is all about enabling communities to help themselves by utilizing their own skills and resources. It is a means of improving local welfares, training people in local administration and expanding government control through local self-help activities (World Bank, 2004). Communities are able to take part in poverty reduction and once these basic services are in place and communities develop the skills and resources for changing their environment, they continue to further their development.

A proper evaluation and understanding of public participation well achieved when viewed against theoretical framework built on decision-making, which includes social organization,

political process, planning theories, urban management and ideologies in light of society. The kinds of participation that warrant major concern are participation in decision making, participation in evaluation (Cohen and upkoff, 1980). The most important aspect of community participation at the implementation stage is to develop the sense of ownership to the implemented activity for long-term sustainability, to reduce costs, to provide training and empowerment. It is also a means of exploiting the free labor of beneficiaries (Jaglin, 1994). Peter and Bob (2004) pointed out that communities select a water supply technology, of which they become owners, are involved in its implementation, and are responsible for managing the operation and maintenance of their chosen technology (they may or may not actually conduct maintenance themselves). This assumes that communities are,

Box 2: prerequisites for community management

These three criteria are prerequisites for sustainable community management and yet they are not

1. Given a range of technologies and information in order to make an informed choice;
2. Willing and able to manage O&M (this may mean that they use a third party to actually carry out maintenance and repair); and
3. Willing and able to finance the cost of O&M in the long-term.

investigated fully before a water supply initiative begins, despite speech making to the contrary. Communities rarely provided with sufficient information and options in order to make an informed decision regarding technology choice, and hence their willingness and ability to manage and finance O&M on a long-term basis is not firmly established. Community based organizations (CBOs) usually take the form of committees which lack legal status, meaning they are often unable to take legal ownership of systems and facilities.

Communities are rarely provided with sufficient information and options in order to make an informed decision regarding technology choice, and hence their willingness and ability to manage and finance O&M on a long-term basis is not firmly established

2.3. Importance of community participation on water supply schemes

Community participation is vital at all phases of water projects. It is essentially crucial at the beginning during the planning and decision making process. The introduction of water supply to a community is usually through village leaders, elders or inflectional people they then call the whole community together in the large meeting is a two way process. Project staff and villagers work together and learn from each other. The involvement of local people from the beginning ensures that projects are more responsive to community needs resources and abilities. Therefore, communities will determine to maintain it by putting time effort and saving in to schemes (Emmanueal, 1995). At the same time participation at all stages of project and conceiving their rationale from the perspective and culture of poor will bring them much closer to people's reality and reduce the risk (Brett, 2005).the table below shows the type of activities done by the community in all stages of the project and the advantages of their involvement.

Table 1: Type of beneficiary's activity on WSP

Stages of WSD	activities of the community	`merits of community participation
Planning	-identifying the problem -community information and motivation -collection of locally available materials -fund collection - selection of individuals for special task and training -data collection and discussions of options	-decisions can be made by both parties -avoid misunderstanding in the process of project implementation and management -community could develop sense of owner ship -helps in arranging different works of the project according to the working habits of the community
Implementation	-providing paid or free labor -provide local materials -food for workers -arrange work schedule -keeping records -applying penalty/allocating reward -management of community fund - supervision of labor	-allows to involve both unskilled and semiskilled labor -use locally available materials -helps to organize training for village level technicians and providing record formats and by implementing agency
Operation and maintenance .	-Reporting urgent problems immediately to the regional bureau or representatives -setting charge and collection of water fee -keeping accounts and other records -organizing meeting for election & report -developing and applying regulation -selecting trainees for different skills -doing simple repair -selecting and appointing operators -controlling disputes -Follow performance of the scheme	- ensures the system is properly used by the users for extended period.
Monitoring and evaluation	-provide feedback information -Reporting how facilities are functioning -assess economic affordability of charge -involve data collection -general impact on the target community - attend meeting with the personnel representing the bureau,	-the effects of the project on the intended beneficiaries could be noted, assessed and analyzed. -helps to identify things which are done well and not done correctly

Source: BGRS Water Resource Bureau Report, 2001

2.4. Community capacity building

Community participation is a necessity for project success From the perspective of this, a study conducted by Thwala (2010) on rural water supply project indicates that; Community participation in decision making in a way that the major issue in rural community was the fact that people in leadership make decision on behalf of the communities. The communities are not involved in community decision making. Leaders only call a meeting to sell a particular idea. To overcome the problem labor-intensive program is appropriate as it solves a number of problems simultaneously. Firstly, it addresses the problem of illiteracy by offering training on skills development. Secondly, it promotes local employment, and thirdly it ensures that services provided at a low cost and thus the living environment is improved.

Lackwood, (2004) pointed out that different methods can be used during project implementation to strengthen the capacity of communities to manage their own systems. This include: use of participatory approaches in planning, decision-making and construction; involvement of all community members including both men and women; establishment of new management structures or strengthening of existing ones; a continuous process of training and skills transfer throughout the project cycle.

Lammerink.M, (1998) indicates that Support from agencies promote decentralization and greater community involvement in decision making and planning, placing more emphasis on water resources management at the lowest appropriate level. Community management does not imply that communities must take care of everything or pay the full costs. The idea of partnership allows scope for sharing responsibilities between supporting agencies and communities. The functions to perform by local management organizations can thus vary considerably, depending upon the agreed division of responsibility between the agency and the community.

2.5. Water Committee

Water committee is essential in strengthening and sustaining established water structures and service. Water committee is also important to enable detailed monitoring and finding solutions to various problems confronting the proper functioning of the installed water infrastructures. In this perspective, water committees elected to manage projects on behalf of the whole community.

They deal with issues such as preparing budgets, procurement of goods and services, and developing necessary action plans. Such activities normally best done by a small group of people capable to give necessary feedback to the entire community members (Claud, 1998).

2.6. Sustainability

Sustainability in this study refers to the ability of project beneficiaries to maintain and sustain project activities, services and any measure initiated by a project to last long after the expiring of the funding period. In water projects, we cannot talk of sustainability without mentioning operation and maintenance issues (Kasiaka, 2004).

Safe and clean drinking water supply is sustainable only if, the water consumed is not overexploited but naturally replenished, facilities maintained in a condition that ensures reliable and adequate portable water supply. The benefits for the water supply should continue to be realized over a prolonged period of time (David and Brikke, 1995). Brikke (1997) argues that sustainability of project services are to be realized if water sources are not overexploited, facilities for operation and maintenance are in place, and funds are readily available. In addition, that both women and men are involved in the design, planning and management of the scheme, and technology choice corresponds to needs desires. In addition, projects are culturally accepted, spare parts are available and affordable, and support system is in place. Others include capacity building, technical assistance and availability of well-established institution for legal framework

2.7. Management of water scheme

Justine Anschütz (1996) stated that community management is defined as a situation in which a community takes the responsibility for, obtains authority over and carries out control on operation, management and maintenance of a service benefitting its members. This does not mean that a community is responsible for every aspect of a service. Partnerships with governmental agencies and NGOs are possible.

If communities are to be considered as the managers of their water supply sources, then we should know what attitudes and potentials they have, and how they should be organized and supported. Since adequate protection and routine maintenance enhance the sustainability of water

supply systems, and improve the quality of the water from the sources (Ainsworth and Jehn, 2005, cited in Aschalew Demeke, 2009).

2.8 Challenges of community participation on rural water supply schemes

Water projects seek to involve all members of the communities that they work within each community there are individual with their own interests and priorities. The biggest challenge of any projects to ensure that all community members are involved especially the most vulnerable benefit equally (Butterworth.et.al, 2009).

The study conducted by Melkamu (2008) on problems and prospects of rural water supply projects in BGRS. From the total H.H respondent 45.8% of respondents reflects that there was no community participation during site selection and construction phase. The reason for the absence of participation was everything was done by the implementing agency alone and lack of awareness in contrast to this 54.2% of the respondents are responded as they were participated in site selection and construction phase contributed by providing information, labor and supply of locally available material

Moreover, the study conducted by Babekir, (2009) on constraints and community participation in RWS in Assosa District. The findings on the nature of institutional supports given to village water committee from FGD indicated that there were no any supports from any one given to them. All the burdens of maintaining and managing of the project were left to water committees. The help could have been through training, supplying spare -parts, financial and technical support but none of these were there.

The main reasons why individuals and /or community may be reluctant to take part in community participation are:

- Unfair distribution of work or benefits amongst members of the community.
- If individuals have little or no sense of community.
- Feeling the government or agency should provide the facilities and agency treatment of community members.
- If people are treated as being helpless, they are more likely to act as if they are.

Generally, people are ready and willing to participate; the biggest disincentive to this is probably the attitude and actions of the agency concerned. Treating people with respect, listening to them and learning from them will go a long way toward building a successful program; it will also save time and resources in the long run and contribute greatly to program sustainability. Lockwood, (2004) identify two sets of factors that can lead to problems for community-managed RWS:

- Limitations within the community: community dynamics, political or social conflict, failure to generate sufficient tariff revenue, lack of preventative maintenance, lack of cohesion and lack of capacity (technical, managerial, financial etc).
- Constraints external to the community: poor designs, poor implementation, political interference in planning and resource allocation, lack of spare parts supply, lack of supportive policies and legislation and, very importantly, the lack of long term support to help communities through major repairs, conflicts and other problems with extension and upgrading.

Operators of water supply projects who are not motivated enough, are provided with different incentives to give them a clear identity, more status, economic benefits or more political influence. To improve reliability of a service, some ways of performance control carried out by community members in water supply projects were: selection of operators, assessment of trainees, election of members of management committees, and feedback systems. The problem of inadequate fee collection was solved in water supply projects through training of bookkeepers and providing them with the right materials, by assisting the management committee to make a fee collection plan, and by keeping the community involved through meetings to ratify fees, to encourage fee payment. Gender-sensitive ways of payment and cross-subsidies were additional measures. Cost recovery was improved by applying different fund raising methods, by sharing capital costs and by involving the community in design and planning. Financing systems used in the water sector appeared to be partially applicable to the solid waste sector. Justine Anschütz, (1996) is wide range of factors that could hinder and constraint the promotion of participatory development and this often lead to emergence of non-participatory approach. Such obstacles are grouped into two: Internal and External factors.

External Factors: A factor outside the end beneficiary community that inhabits or prevents the community participation takes place. It suggests role at development professionals, broader government orientations towards promoting participation, a tendency to apply selective participation and their technological-financial bias.

Internal Factors: refers conflicting groups, gate keeping by local elites, and lack of public interest in becoming in valued. Some of obstacles such as excessive pressures for immediate results and technological and financial bias are both internal and external factors.

Both financial and technical factors have their own impact on the development of water supply schemes. Availability of spare parts, training for operation and maintains type of technology are some of technical factors. While willingness to pay, appropriate tariff, water fee collection and financial management are the financial factors. All the above problems in combination limit the water supply services in sustainable way.

Furthermore, factors like culture, government policy, and social, political and economic structure will influences community participation. Individual and group motivators appear to be context specific and locality bound rather than universally definable.

2.9 Community participation on Water Project Cycle

There are different levels in which a person can claim to have participated in project activities. Firstly, by attending a meeting even though, the individual cannot contribute any idea, or involve actively in dialogue. Secondly, one may actively be involved in supplying local building materials or provide free labor force. Thirdly, a person can participate in the first two stages as well as controlling the program design process. However, to realize project sustainability, this person will have to participate in all stages of the project management as shown in the figure 2.1 below

Figure 2.1 Community participation on the cycle of water supply project

Source: adapted and modified by the author

As indicated from the above diagram, rural water supply is associated with various forms of community participation at each stage of water supply project work. If the implementing agency

allows for the involvement of community, they should participate in problem identification and decision making during planning of the project. In the second stage, users may involve and contribute for the project work in various ways, which includes provision of free labor, locally available materials and managing community fund. Beneficiaries can support through cost recovery, follow up and reporting the day-to-day performance of the scheme, lastly they may provide feedback and relevant data, which enable to make impact assessment on the target population. Community's participation at each stage of the WSP creates a sense of ownership among the users and this leads to have sustainable water supply services.

CHAPTER THREE

3. Methodology of the Study

This research is an exploratory study aimed at assessing the role of the community in rural water supply project. A combination of quantitative and qualitative research methods employed to collect data from respondents. Sampling procedure, method of data collection and analysis of the study discussed below.

3.1. Population, sample and sampling procedure

Beneficiaries are the main primary data sources in this study. In addition, artisans (contractors who involve in rural water supply projects) and experts at Woreda Water Desk and NGO are involved in the study. From the two sample Kebeles, 100 households were selected on voluntary basis and the head of the household or the one available at the time of the survey were involved in completing the structured questionnaire. To generate further information from the stakeholders and capture their perspectives, three focus group discussions (each having seven members) held. Two of the focus group discussions held with village water committee and community residents who have active involvement on water projects. One focus group discussion also held with artisans. Key informant interview was also held with three experts (2 from the Woreda Water Desk and 1 from NGO).

3.2 Materials for data collection

Data from the sample respondents were collected in different ways. Structured questionnaire, key informant interviews and focus group discussions were employed to produce primary data. Moreover, secondary data were collected from documents. The structured questionnaire used to assess the extent and role of the community in water supply project. It also used to assess institutional supports and challenges in water supply project. Focus group discussion and key informant interview also used to get further information that was not collected by the structured questionnaire.

3.3 Method of data analysis

Descriptive statistics mainly percentages were used to analyze the quantitative findings. Quantitative data collected through household survey were organized and entered in to the SPSS to result in descriptive statistics and to examine the problem under study. While qualitative data gathered through focus group discussion and key informant interview were described qualitatively.

3.4 Description of the study area

Debatie is one of the 20 Woreda's in Benishangul-Gumuz Regional State and is found in Metekel zone, north west of the country- 550KM from Addis Ababa. It has grid coordination of $10^0 01'$-$10^0 53'$ North latitude and $36^0 04'$-$36^0 23'$ East longitude. As shown in figure 3.1 Debatie borders Mandura Woreda in the North, Bullen Woreda in West and Guangua Woreda of Awi zone (Amhara Region) in the east and Yasso Woreda Kemashi zone in the south, Dura River in the east and Blue Nile in the south-east bound Debatie from its adjoining Woredas and region. The Woreda has 27 rural and 2 urban Kebeles. However, some small towns such as Zegeh, Koreka and Par-zeyet are not considered as urban Kebele administrative.

Topography

The study Woreda's altitude ranges from 1300m to 1750m above sea level. The elevation decreases from east to west and the topography follows similar pattern from rugged terrain (on the east) to gently undulating plain on the western side of the Woreda. Debatie Woreda has three different surface forms which are seldom contiguous. Those include low land areas with depressions; plateaus with mountain picks and the remaining part of the woreda are mainly flat and account for relatively larger population of the study area.

Water resource and agriculture in the study area

Benishangul-Gumuz region is endowed with potential natural resources that can be tapped for the well-being of the people. The region has large cultivable land and rich water resource potentials. There are many perennial rivers such as Abay (Blue Nile), Dabus, Beles, Dedessa and others that can be used for large, medium and small-scale irrigation developments. It is estimated that there is about 1 million hectare of potentially irrigable land in the region. Rivers like Gilgel Beles and Hoha can be used for hydroelectric power generation. Various types of minerals are found in many places. The major ones include Gold, Marble, Limestone, Cobalt, Copper, Zinc, Lead, Tantalum, Sulphite and Nedium. About 55% of the total land area of the region is covered with different vegetation and forests. Bamboo, incense and gum trees are the major forest types. Forests are important sources of construction material, fuel wood and food, particularly for the indigenous communities. Beekeeping and fishery are also very promising potentials that could play vital roles in supporting food security in the region (BGRS food security strategy, 2004).

However, in Debatie there is no abundant water resource except three rivers these are Bekafa, Aba Gamee and Sahi, which are the only perennial river in the area. At present time the volume of this river is reduced even some time it becomes dry the spring on the side of the river serves as the major source of water for domestic use. The inhabitants face greater problem of water shortage during dry season and during summer season people in the study area uses rainwater as an alternative source of water.

The average temperature of the study area is $24c^0$ and the temperature of the study area experiences much higher during low winter and, somewhat moderate during summer season. The study area experience rainfall only during the summer season and ranges from 900mm to 1550mm with a uni modal pattern. The agro-ecology of the area is conducive for growing different types of food and cash crops. Sorghum, millet and maize are the most dominant food crops grown in the region followed by finger millet, rice and teff. Oilseeds like sesame, Niger seed, groundnut and sunflower are grown widely. Different types of livestock are also raised including cattle, goat, sheep, donkey and poultry. The indigenous knowledge of the people including on natural resource management, is appreciable.

CHAPTER FOUR

Result and Discussion

This chapter presents the results of the analysis and discussions about the role of community participation in rural water supply project. As already explained in the previous chapter, the data were collected using structured questionnaire, interviews with key informant, and focus group discussion. The data collected from the household through structured questionnaire were analyzed using the Statistical package for Social Sciences (SPSS) and data gathered through focus group discussion and key informant interview were presented by integrating the household data. In this research, participation is categorized as high, medium and low, if the respondent's reply in the activities mentioned in Table 1 of the literature part is more than 75%, 50-74% and 10-50%, respectively.

4.1 Age-sex composition of households

Table 1 describes age-sex composition of households in the study area. About 58% of respondents who completed the questionnaire were women and 42% were men. In terms of gender the study indicates that the number of women who were involved in the study were greater than that of men. Majority of household respondents (88%) are between the age of 15-64 and the remaining (6%) are old or above the age of 65. The greater involvement of women in the study is because of women's willingness to participate in the study and their availability at home as compared to men. Since the survey was conducted during harvest time, most men were out-of home.

Table 2: Age-sex composition of households

Sex	**Frequency**	**Percent**
Male	42	42.0
Female	58	58.0
Total	100	100.0
Age		
15-64	88	88
>65	6	6.0
Total	94	94.0

Source: HH of survey, 2011

4.2. Extent of community participation on rural water supply project

Regarding participation, it was found to be that all of households surveyed have some form of participation on water supply development. However, the level of their participation varies from household to household. In principle, communities should participate at all stages of the water supply project-in planning, construction, operation and maintenance and monitoring and evaluation.

4.2.1. Participation in planning the project work

Community participation in planning the project work helps in arranging different works of the project according to the working habits of the community. In the planning phase, about 17% of respondents said that they participate highly, where as 23% of said they participate moderately and more than half (57%) of respondents expressed as they have less participation in planning. This figure implies that there was too little involvement of community on the planning stage and decisions concerning to the water scheme were made by one party.

Tsehaye (1980) argued that the input from the community at the planning stage should deal with the identification of community needs, priority setting and the setting of the supply point in a way that is acceptable to the community. However, the present finding showed that the community's participation at the planning stage is low and they did not participate in such activities.

Table 3: Initial community participation on planning

Community participation on planning	Frequency	Percent
High	17	17.0
Medium	23	23.0
Low	57	57.0
Total	97	97.0

Source; HH survey, 2010

4.2.2 Participation in implementation/Construction

Regarding community's participation at implementation stage, it was found that the number of households that participated in this phase is much better than that of planning. About 27 % of the households reported that they have high participation, half (52%) of them said, their participation is medium and the remaining 20% have low participation. This indicates that there is relatively high participation of the community on the implementation of water supply scheme. The result collected from focus group discussion explained the reason for greater participation of the community at the implementation stage. This are because of the implementing agency highly mobilize the community during these phase, materials that are needed for the construction of water supply are available in their locality. This may also be because of people's motivation to alleviate their current water scarcity.

During construction, community participation is popular and maximum in projects where simple and locally appropriate technologies are applicable and when local resources applicable to the construction are easy to find. Contrary to this in areas where relatively more complex technology is introduced and materials needed for the construction are not available participation of the community is very low (BGRS Water Resource Bureau Report, 2001).

Table 4: community participation on project implementation

participation on project implementation	Frequency	Percent
High	27	27.0
Medium	52	52.0
Low	20	20.0
Total	99	99.0

Source; HH survey, 2010

4.2.3. Community participation on operation and maintenance

At the time of operation and maintenance, about 18% of the household has indicated that they have high participation in operation and maintenance, 51% of them reported that they have

moderate participation while 30% of them indicated that they have lower participation. This shows that the involvement of the community becomes lower and lower after the construction of the scheme. However, People's involvement at the operation and maintenance of water supply project is equally important while the project is being constructed and after construction. Communities normally expected to finance and manage the operation and maintenance of a system.

Table 5: Community Participation on Operation and maintenance

Participation on Operation and maintenance	Frequency	Percent
High	18	18.0
Medium	51	51.0
Low	30	30.0
Total	99	99.0

Source; HH survey, 2010

4.2.4. Community Participation on **Monitoring and evaluation**

Any development activity requires continuous follow up and assessment in order to make sure those things done correctly or not. As indicated in Table 5, only 9% of the respondents have high participation in monitoring and evaluation phase, 26% reported that they have moderate participation and more than half (63%) of the households have low participation. From this finding one can understand that community's have no tendency to taking responsibility on the operation and evaluation of the scheme. BGRS water bureau report (2001) also argued that the community's play major role through providing feedback and information in both technical and social aspects. They can also report how facilities are functioning; assess economic affordability of the charge and general impact of the project on the targeted community.

Table 6: Community Participation on Monitoring and evaluation

HH participation on M and E	Frequency	Percent
High	9	9.0
Medium	26	26.0
Low	63	63.0
Total	98	98.0

Source: HH survey, 2011

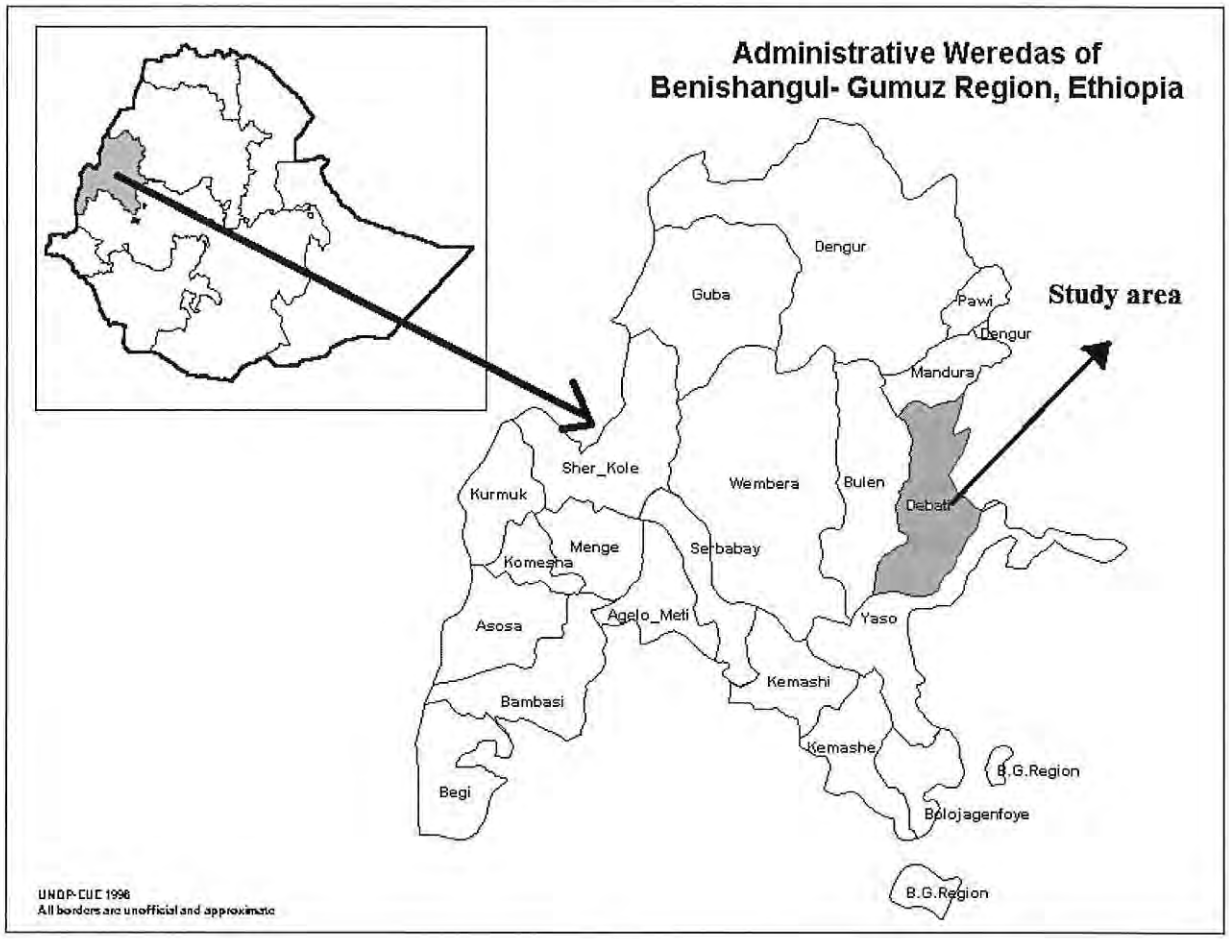
4.3. Participation of household family member on water supply development

Table 6 shows that, 80% of respondents said that their family members had participated while 20% of households reported that their family members did not participate. The major reasons for non-participations were have no chance, Agency interest to apply selective participation, Lack of interest, unfair work and financial arrangement; 6%, 3%, 2%, 4% respectively. Five % of HH were not know the reason why their family members are not participated.

Together with their participation, households asked to describe the stage that their family members are participated. Table 6 below depicts that 8% of household family members are participated in planning phase, 52% construction, 17% operation and maintenance, and 3% monitoring and evaluation. The final development process, monitoring and evaluation, is particularly important to sustainability since it allows an ongoing review of project effectiveness. It is also a key ingredient to monitor factors specifically relating to sustainability and to establish checkpoints at appropriate intervals during and after project implementation.

Relatively similar things observed on HH and their family member's participation on the development of water supply projects. Both households and their family members are highly participated on the implementation phase. As shown on the related literature review except construction phase responsibilities of beneficiaries in each stage were not achieved successfully in the study area.

Figure 1: Location of Debatie Woreda



Source: UNDP, 1996

Population

According to population census in 2000, the total population of Debatie Woreda is 51,130 out of the total population 26,076(51%) male and 25,054(49%) are female. On the other hand urban population comprise 5,464 (10.68%) and rural population comprises 45,666(89.32%) of the total population in the Woreda. The major economic activities in Debatie Woreda are mixed agriculture or crop production and livestock.

Table 7: HHFM participation on water supply development

Stage of participation	Frequency	Percent
Planning	8	8.0
Construction	52	52.0
operation and maintenance	17	17.0
monitoring and evaluation	3	3.0
in all of the above	3	3.0
Total	83	83.0
Reasons of non participation		
absence of chance to involve	6	6.0
Agency interest to apply selective participation	3	3.0
Lack of interest	2	2.0
un fair work and financial arrangement	4	4.0
Total	15	15.0

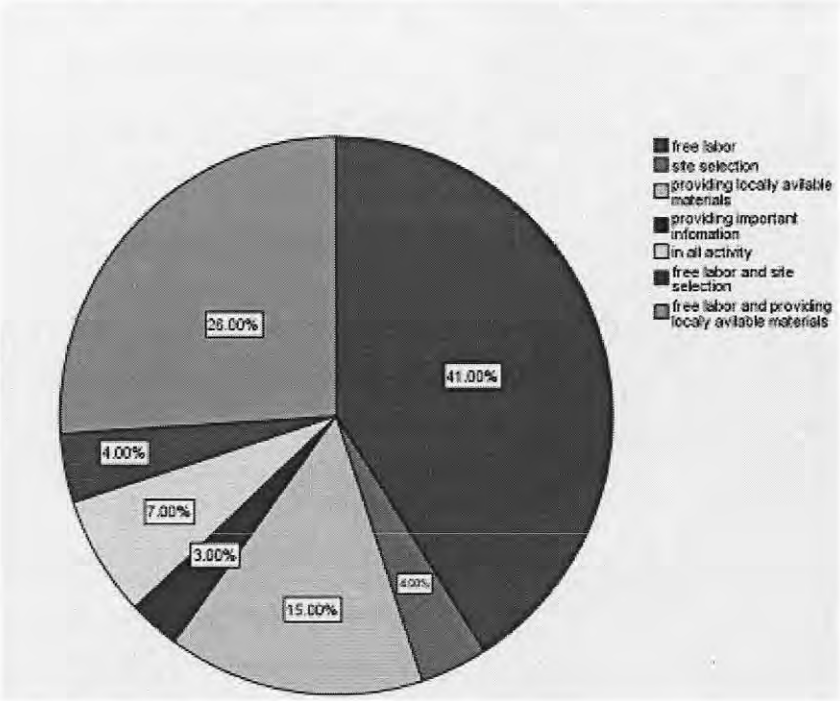
Source: HH survey, 2011

4.4 Forms of household family member contribution to water supply scheme

The form of contribution such as free labor, site selection, providing locally available onstruction materials (sand and stone), removing excavated material, cleaning areas for drilling hand pump well, and providing important information are conventional way of community contribution to water supply development program. As can be seen from figure 1, below the largest percentage of respondents were contributing to the scheme by providing free labor and locally available materials. Focus group discussion with village water committee in the two sample Kebeles revealed that all community with in the village has responsible to contribute 15% of water scheme construction cost in cash. This amounted from 10 Br to 20 Br with an average of 14 Br. The payment varied among villagers because the number of HHs within one village differ from the other and difference living standard or poor members were allowed to contribute only by providing locally available materials and free labor or some money below the normal payment. The money collected from each household will entered to micro finance as guarantee for the

scheme after construction. Then project planners start to implement the scheme in collaboration with the community.

Figure 2: Forms of community's contribution to water supply scheme



Source: HH survey, 2011

4.5 Procedures of community participation

The Researcher forward question for officials from (Canada physician for aid and relief) CPAR and experts from Woreda water desk about the procedures that their organization follow to implement water supply points and to enhance community participation on the project. The officer from CPAR pointed out that water points are constructed together with the experts of Woreda water desk. Experts from Woreda water desk (WWD) identifies area with sever water shortage. Then experts undertake need assessment simply by observing the area and prepare action plan for the project. Elder groups and kebele leader are called to share some idea about site selection and facilitate the community on implementation stage. Whether communities contribute or not village water committees are established after the scheme is constructed. Wored water desk officer pointed out that currently village water committee are established before the implementation of water schemes because, water point are constructed with the question of community and when they are agreed to cover 15% of project cost and the remaining

85% of the project costs are covered by Water supply, sanitation and Hygiene (WASH) project. If they are agreed to cover the cost kebele leader call the whole community at the large meeting and establish village water committee and the committee collects money from each households and enter it to micro finance. Then, WWD expert agreed with artisans to drill the hand pump well and give the work to them. However, communities are expected to support scheme Construction in kind.

From the above finding, it can be seen that currently Woreda water desk mobilizes community to participate on water supply projects (WSP) starting from problem identification is identified as one of their strength. Such cash and kind contribution of the community helps to develop sense of owner ship and the idea of project cost sharing.

4.5.1. Perception of Community towards the concept of participation on rural water supply project

Results collected from focus group discussion reveals that "community participation on water supply project refers to kind or cash contribution to the scheme during construction phase. Kind contribution includes providing food for artisans, locally available materials such as sand, stone, and wood, free labor and providing important information." According to the words of focus group discussion participants one can understand that communities perceive the concept of participation only kind and cash contribution during construction phase. I.e. they have not an idea to involve on planning, operation and maintenance, and monitoring and evaluation phases of the project. Therefore, the implementing agency should give more attention on creating awareness about the concept of community participation and the need to mobilize them.

4.5.2. Level of community mobilization

In assessing the provision of chance for the involvement of beneficiaries by implementers /experts, about 42% of HH describes that they did not give chance for community participation while 58% of the respondents confirmed that they give chance for community to involve on the water supply development.

Finding obtained from focus group discussion held in Aman Amba indicates that "communities were not fully participated and implementers call kebele leaders and elder group in order to share some idea about site selection for the scheme and they built the scheme by covering all the project cost. However, they did not make any follow up after constructing and hand over it to the community rather they give all the responsibility for village water committee which are established after the construction of the scheme. Because of the absence of follow up among the experts the committees' are not effectively manage the water scheme. However, they involve in different trainings held by woreda water desk or other NGOs if it has per dime in steady of giving the chance for other community member who are responsible and effectively manage the scheme." This explains that implementing agency missed mobilizing the community, their contribution for the successful implementation and sustainability of the project.

The result contradicts with the findings of Thwala (2010), the communities informed about the water project after the traditional leaders and the local municipality had agreed that the project should be implemented. The elders came with the idea of the water project called the community members to a meeting, issues relating to the project discussed, and the residents will vote village water committee make decision on what way they contribute to the scheme to be constructed.

In addition to this, they also asked to express the level of invitation in the way that high, medium and low. About 17 % of respondents describes that they invite the community highly in the construction phase; 8% of them reflects that they invite highly the community in planning; 8% in operation and maintenance and 6% monitoring and evaluation. Similar to the finding from focus group discussion, agencies mobilize the community in the construction phase. Therefore, the implementing agency needs to improve their experience regarding community mobilization.

Table 8: Invitation stage for community participation by implementing agency

Invitation stage	High	Medium	Low
Planning	8	17	33
Implementation	17	26	15
Operation and maintenance	8	22	27
Monitoring and evaluation	6	10	41

Source: HH survey, 2001

4.5.3 Responsibility of managing water scheme

In relation to the management of water scheme, households and focus group discussants are asked in the study area. It was observed that all water schemes have established village water committee. The number of village water committee is two women with three men. Most (56%) of households pointed out that village water committee are responsible to manage water scheme,19% Kebele administrators are responsible, 17% woreda water desk, 3% NGO and 3% Regional water bureau. Therefore, it can be conclude that most of the responsibility to manage water scheme lies on village water committee than others.

Moreover, results shown on figure 2; About 68% of households highlighted that scheme managers are not capable to manage water schemes; 19% of households said that they have the capacity to manage and the remaining 19% of households does not know whether they have the capacity to manage or not. The above finding clearly shows that experts in woreda water desk and NGO needs to strength and support village water committee.

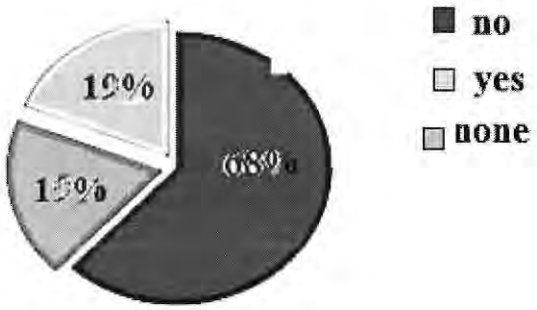
The result supports the findings of Babekir (2009), on the nature of institutional supports given to village water committee from focus group discussion indicated that there were no any supports from any one given to them. All the burdens of maintaining and managing of the project were left to water committees. The help could have been through training, supplying spare -parts, financial and technical support but none of these were there.

Table 9: responsibility of managing water scheme

responsibility of managing water scheme	Frequency	Percent
regional water resource bureau	3	3.0
NGOs	3	3.0
village water committee	56	56.0
Kebele administrator	19	19.0
woreda water desk	17	17.0
None	2	2.0
Total	100	100.0

Source: HH survey, 2011

Figure 3: schemes manager capacity



Source: HH survey, 2011

4.6. Extent of Communities sense of ownership to the water scheme

Water Schemes may poorly managed and misused if communities have no sense of ownership. The degree of sense of ownership varies among community and it depends on their level of participation on the development of water supply project. With regard to these, it was found that about 92 % of household have sense of ownership to the water scheme and the remaining 8% of household have no sense of owner ship.

Following to this, they asked to scale the extent of their participation in all indicative activities , these are identifying misbehaved people, paying any payment on time, maintenance, follow up (recording any think observed on the water scheme), and repairing the scheme when it is malfunctioned if they have technical knowledge.

4.6.1. Degree of household participation on identifying misbehaved people

Some people specially children use the water scheme as an entertainment through pumping it up and dawn. This occurs when it has not been fenced adequately. It leads to unwise use of water and faller on the scheme. Therefore, users are responsible to identify and provide them for punishment or advice those peoples to take correction from their activity. In relation to this, It was found that 31% of the households have high participation in identifying misbehaved people, 20% medium, 28% low, 13% not participated at all. This implies that users are not working more to solve problems, which comes from improper utilization of water scheme.

Schemes destroyed by improper utilization of people

The above photo shows that people take some parts of the scheme when it was out of service. Because of this, experts are demoralized to repair the scheme since users do such type of activity and they are not work more in protecting their water scheme.

Table 10: Household participation on identifying misbehaved people

Identifying misbehaved people	Frequency	Percent
Excellent	31	31.0
very good	20	20.0
Good	28	28.0
No	13	13.0
Total	92	92.0

Source: HH survey, 2011

4.6.2 Degrees of household participation on follow up

Beneficiaries are expected to make follow up on the day-to-day performance of the scheme and keeping records. Accordingly, 6% of households are participated highly, 15% medium and 31% low in this activity. This shows that little attention was given by the beneficiaries in following the performance of the scheme beyond utilizing the scheme until it stops working.

Table 11: Household participation on follow up

Follow up	Frequency	Percent
Excellent	6	6.0
very good	15	15.0
Good	31	31.0
No	39	39.0
Total	91	91.0
	100	100.0

Source: HH survey, 2011

4.6.3. Degree of household participation on maintenance

According to this research proper operation and maintenance of the water scheme is not only limited to technical activities rather it includes fencing the scheme, cleaning water points and planting trees surrounding the scheme. In relation to this 21% of households are highly involved through performing such activities, 16% moderate and 37% low. This finding indicates that communities have medium participation on maintaining their water scheme.

Table 12: Household participation on maintenance

Participation on maintenance	Frequency	Percent
Excellent	21	21.0
very good	16	16.0
Good	37	37.0
No	18	18.0
Total	92	92.0

Source : HH survey, 2001

A) Un protected Scheme

B) well protected scheme

4.6.4 Degree of household participation on paying any payment on time

Moreover, household willingness to pay any payment on time considered as indicator of community sense of ownership. Based on this households are asked to show the degree of their willingness to pay on time. It found that 33% of the households are highly encouraged to pay, 25 % medium, and 31% low motivation to pay on time. Relatively communities are interested to pay any payment related with the water scheme.

Table 13: household Participation on paying any payment on time

Participation on repairing	Frequency	Percent
Excellent	33	33.0
very good	25	25.0
Good	31	31.0
No	2	2.0
Total	91	91.0

Source: HH survey, 2011

Even if the number of households that have sense of ownership to the water scheme is large, there is insignificant relation between household who participate in all indicative activities of community sense of owner ship. Similarly, results from focus group discussion (FGD) held at Aman Amba revealed that, "Since water is the major social problem in our village currently communities develop sense of ownership to the water schemes. In the past communities have no sense of ownership because every input for the project comes from implementing agency and there were many alternative sources of water? At present alternative sources of the water are dried up and they travel long distance to fetch water for domestic use. All these enable them to think over the water scheme, which is non-functional and they ask experts in Woreda water desk and NGO to repair the scheme and as they cover all the costs of maintenance. Especially women are highly encouraged to maintain the scheme after it gets maintenance."

Currently the introduction of cost sharing is the other initiative factor, which raises the feeling of the community to consider the scheme as there asset. That means, experts in WASH project which is the only active NGO funded by Finland government in the study area construct water scheme if the question of water supply comes from the community. Having these, they announce them 15% of project costs are cover by the community in Cash. The remaining 85% will be cover by WASH project. Moreover, every individual should pay 14-20 birr. The amount of money paid by every individual depends on the number of households with in the village and economic status of household i.e. elders and poor groups are considered. Furthermore all communities are obliged to contribute in kind such as , labor, materials(stone, sand and wood for fencing the scheme) , removing excavated materials, drilling the well and food for artisans. From the above finding one can understand that community sense of ownership to water scheme can be comes from their contribution or involvement on the development of water scheme in cash or kind. The problems water shortage was also another initiative factor to develop sense of ownership to the scheme.

4.7. Community capacity building

Community participation is one of the instruments to incorporate and address the social dimension. However, effective participation of community is only possible if, proper awareness and conducive environment for the facilities and projects are created. Education and information on rural water supply projects are not a onetime intervention. It has to continue in various forms throughout all the stages of the project. Based on this households were asked to indicate whether the implementing agency provides training to raise their feeling towards water schemes and (60%) of them reported that there is no any training given by the implementing agency. The rest of 40% confirms that implementing agency provides training.

Similarly key informant interview result approved that the institutional support given to the community in managing rural water supply scheme are not enough because of financial, human, material and transport problem. Even though, occasionally training was given to the community. However, trainees are not effective in putting the training in to effort or they are not respecting their responsibility. Moreover, most of trainees follow the training appropriately, if the training has per dime otherwise they did not follow the training. Unfortunately, the researcher observe

most trainees are set out of the training hall and asked them why they are not interested to attend the training and they respond that "there is no any per dime paid for us without tea at the break time. Since we kill our time, which helps us to perform many activities in our home, we should have incentives (reward) for our participation."

Household respondents who said there is training given by implementing agency were asked to indicate the type of training given by implementing agency. Based on this 14% of household said that the training focuses on local technician, (13 %) follow up, (11%) water scheme management and 2% cashiering. This implies that an effort for a continuous process of training and skills transfer throughout the project cycle for sustaining the water scheme is too little. Communities have no awareness concerning to why trainings are needed and trainees are not the responsible person.

Table 14: Types of training given by implementing agency

Type of training	Frequency	Percent
Local technician	14	14.0
follow up	13	13.0
water scheme management	11	11.0
Casher	2	2.0
Total	40	40.0

Source: HH Survey 2011

4.7.1. Selection of trainees

The villagers themselves should maintain village water system. Planning of who should be recruited and trained for operation and maintenance becomes more important. According to result collected from household survey, different organs select trainees. Based on the household survey 15% of households reported that trainees are recruited by kebele leader, 10% beneficiaries, 10% village water committee and 5% said that woreda water desk is responsible for selection. As the finding shows, kebele leaders mostly select the trainees. Without any

criteria, trainees recruited by one or two people, may not have responsibility to operate, manage and share new ideas that he/she got from the training.

Table 15: selection of trainers

people entitled to vote of trainees	Frequency	Percent
kebele leaders	15	15.0
woreda water desk	5	5.0
the beneficiaries	10	10.0
village water committee	10	10.0
Total	40	42.0

Source: HH survey, 2011

4.7.2. Maintenance of water scheme

Regarding maintenance of the scheme more than half, (55%) of the respondents highlighted that external body and local technicians are not repair water schemes when it was fail to give service while 45 % indicates that others repaired schemes when it is beyond the capacity of local technician. The finding indicates that the training given to the local technician was not enough to maintain the schemes and the trainees who attend different training are facing problem in applying the theory in to practice. Therefore, trainings should focus on hard copy rather than the soft one.

4.8. Responsiblities of communtiy on operation and mainenance of the WSS

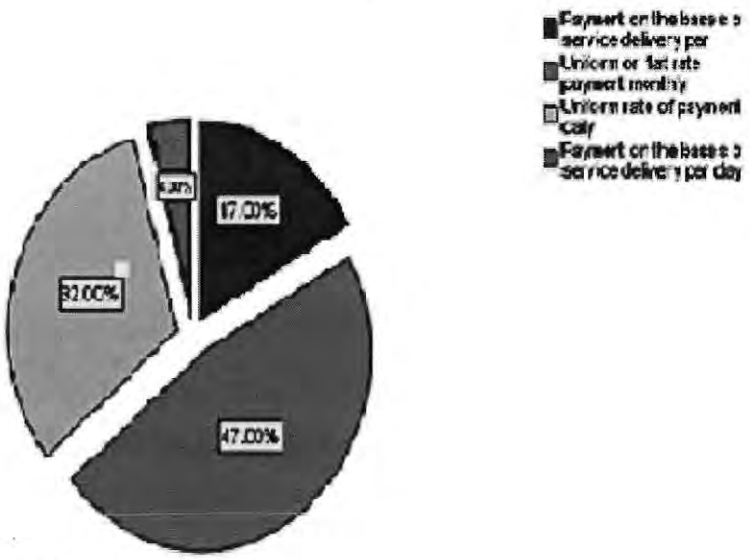
Communities are responsible to paticipate in doing different activities such as setting water charge and collection of water fees, keeping accaunt and other records, developing and applying regulations, selection of trainees for the required skills, doing simple repair, strictly follow the day to day performance of the water scheme, controlling queues, local trained oprators undertake routine mainenance, and selecting and appointing operator. (BGRS water resurce bureau report, 2001)

4.8.1 Existence of user payment and type of water fee

Operation and maintenance of water scheme costs money. This is true whether it is agency managed or community managed the money for the running of water supply must come from somewhere. Even If the scheme constructed by NGOs there should be, minimum costs covered by the users, since they must be contribute financially to the management of their own water supply scheme.

Respondents asked to define the level of water fee that they pay to the service. About 47% said that the payment is uniform or flat rate payment per month, 32% uniform payment per day, 17% payment on the basis of service delivery per month and 4% of them indicates that payment on the basis of service delivery per day. uniform payment on monthly bases may create a threat on the water scheme because people may over pumped the water since they pay uniform price whether they use much water or not.

Figure 4: types of service fee



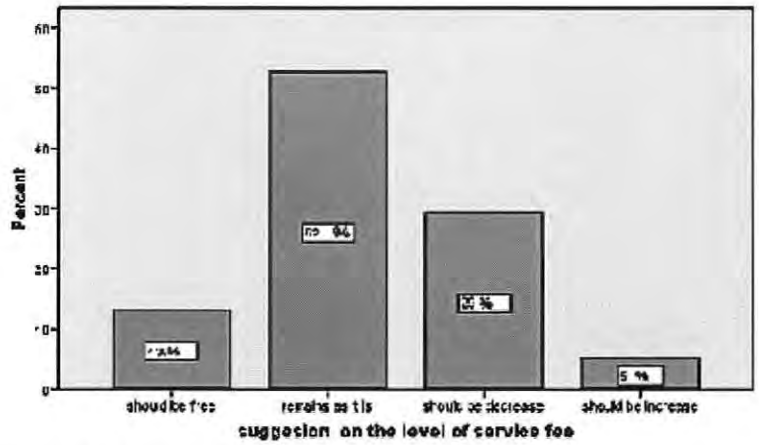
Source: HH survey, 2011

4.8.2 Suggestion on the level of service fee

According to results collected from HH survey 53% of the respondents' show that the payment for water service remains as it is, 30% should be decreased, 13% should be free and 5% should be increased. This implies that users are not in the way to pay more than one or two birr per month.This leads to lack of money for effective management of the scheme. Because monthly

salary for gurd and cost for spare part is taken from the money collected from the users.

figure 5: suggestion on water fee



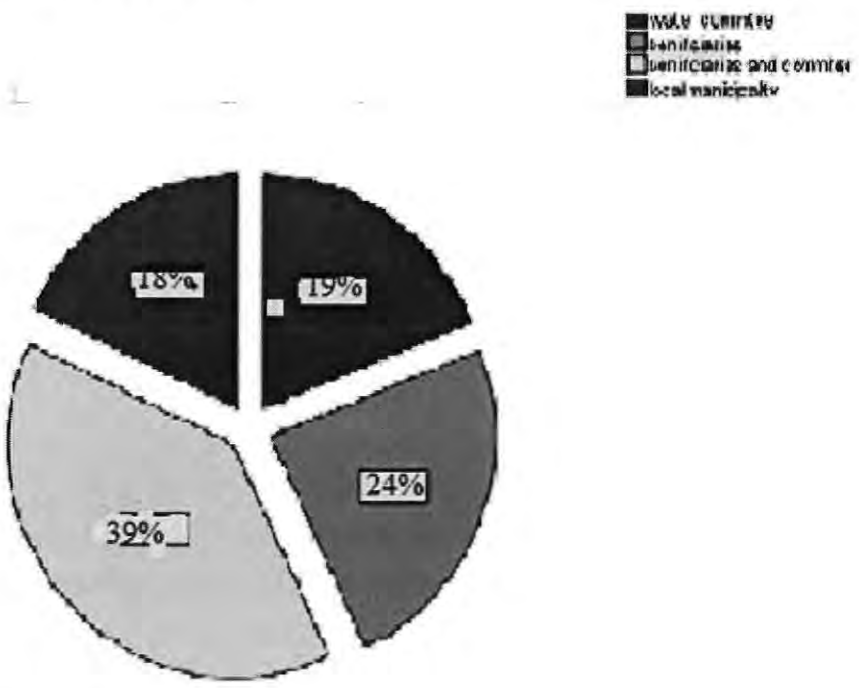
Source: HH survey, 2011

4.8.3 Decision for water fee

The method of charging for the water supply will depend upon how often operation and maintenance costs will need to be covered and the level of costs involved. There are two important considerations in setting the water fee: These are affordability for the users and, willingness to pay.

As indicated on the figure below 19 % of households highlighted the committee, 39 % beneficiaries and committee, 18% local municipality and 24% by the beneficiaries decide that water tariff. As observed from the result, both users and water committees make decision on the amount of money paid for water service and it can be considered as strength of water committee. At the same time, 84 % of households confirm that all users are willing to pay and 16% said that some peoples are not willing to pay. This finding also an indicator of informed decision on water tariff in common with village water committee and beneficiaries.

Figure 5: decision on water fee



Source: HH survey, 2011

4.8.4 Affordability of water fee

A concerning to affordability of water fee about 53% of households reported that all households are capable to pay and benefiting from the scheme and the remaining 47% confirmed that some households are not capable to pay and benefit from the scheme. The finding seems like that the decision made on the amount of water fee was not considering those who have not the capacity to pay water fee (poor and old age groups).

4.8.5. Ability of scheme manager for financial management

Regarding fund management, scheme managers capacity in the study area were assessed and 62% of the respondents reported that the scheme managers have no capacity but 19% think they have the capacity to manage the scheme and 17% of the HH were not know whether they have or not. This finding clearly shows that there is no proper management of funds collected from the users. Similarly, data from focus group discussion confirms that misuse of money and lack of proper book keeping were management related problems that observed in the study area. This

inappropriate use of the revenue collected from user is one of the major finance related problem that limits the sustainable use of water scheme and discourages the community to pay for water supply services.

Davis, (1993) recommends that corruption and misappropriation of funds should be avoided by some system of safeguarding the money. This made simpler if there is rural bank within easy reach of communities. However, there is no banking facility and government agencies may assist water committees by collecting the funds and banking them in the name of communities. If alternative arrangements cannot be made, water committees have to take the money in their home. This can present a big problem to use the money for other things especially in the time of need.

4.8.6. Method of water fee collection

In relation to water fee collection 61 % of households replied that water fee collection takes place without any receipt, 37% of HHs confirms that there is receipt for water fee. This implies that the failure on the management of revenues collected from water service fee comes from the method of fee collection. This creates threat on the beneficiaries and they become reluctant to pay for the service. There is no enough money for scheme attendant and purchasing spare part and the scheme attendant leave their work. Children and some misbehaved peoples misuse the scheme.

Table 15: finance related issues

Financial management of the scheme	Frequency	Percent
Ability of scheme manager	62	62.0
No		
Yes	19	19.0
None	17	17.0
Total	98	98.0
Receipt for water fee		
No	61	61.0
Yes	37	37.0
Total	98	98.0
Affordability of water fee		
No	53	53.0
Yes	46	46.0
Total	99	99.0

Source: HH survey, 2010

4.9. Constraints for the participation of community on rural water supply project

Results collected from key informant interview and focus group discussion identifies a number of problems that limit the participation of the community on the development of rural water supply. All the problems are discussed below.

4.9.1. Settlement pattern

Sparse settlement of the community is one of the major problems for the extension of rural water supply (RWS). This condition creates interest clash among the community widely. The inhabitants live far away from the site selected for the water points are reluctant to contribute for the scheme. However, they will serve from the scheme after construction when their alternative sources of water are dried-up.

4.9.2. Removal of vegetation cover

Forests in the study area removed for different purposes such as for the preparation of agricultural land, settlement area; wood for fuel or charcoal production etc. This leads to drying up of perennial rivers and depletion of ground water and a decrease in annual rainfall. The entire factor causes problem on the amount of water pumped from the scheme. Gradually the scheme failed or dried up within a short period and communities are discouraged to contribute and involve on the development of water schemes.

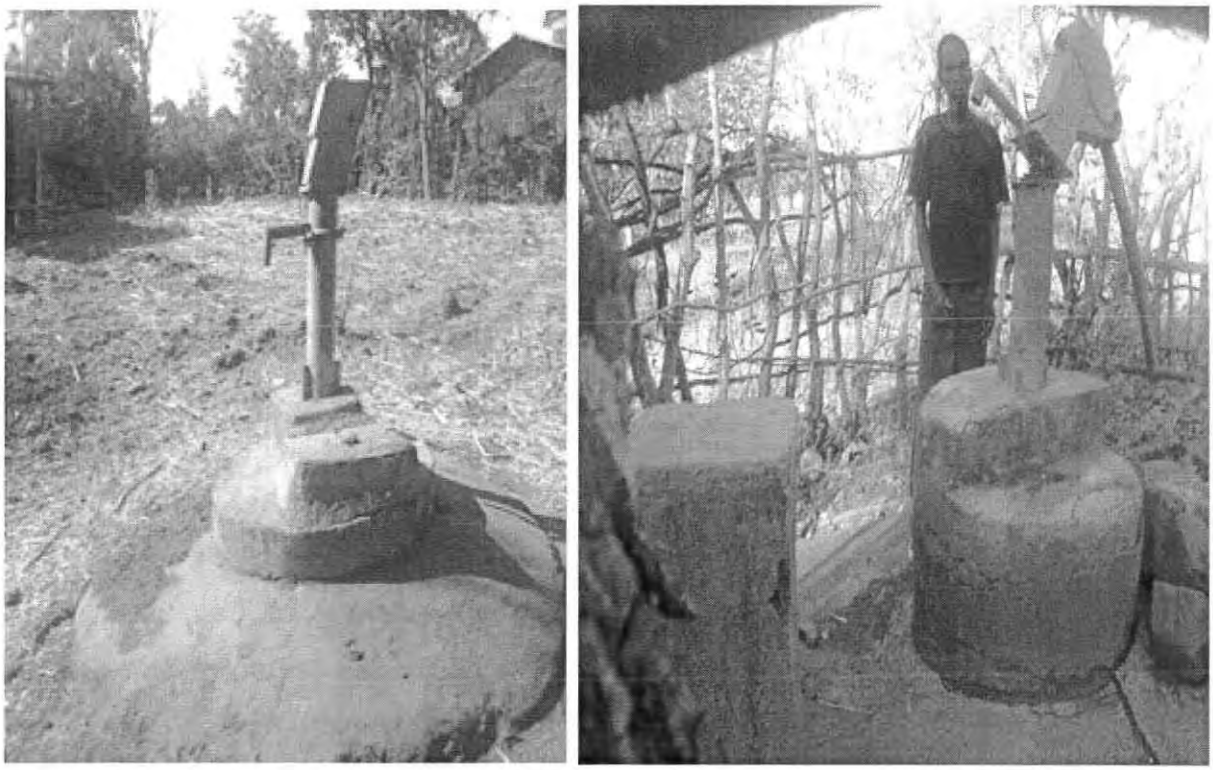
4.9.3. Report based implementation of the schemes;

Implementers construct water scheme only for reporting or utilizing the annual budget at the end of the year without considering the right time for the construction of water schemes. According to their experience, FGDs explained "the right time for construction of water schemes ranges from December to April. The time ranges given hear is dry season in the study area and water did not found within a short depth and the well dug in depth and the scheme gives service in sustainable way than the scheme constructed in summer season. Furthermore, the work of the scheme also so tedious for the community because in summer season the well drilled will be filled with rainwater and beneficiaries asked to take out water and mud from the well, which takes much effort and time". Absence of consultation between contractors and implementers also lengthen the construction period. Implementing agency purchases different equipments without asking contractors what type of equipment they need which make extra expenditure. Absences of adequate budget, shortage of material support, poor quality of VWC are another challenge for the involvement of community on water supply development.

4.9.4 Functionality of water schemes

Sustainability cannot be realized if communities are not able to operate and maintain by themselves. Operating and maintaining the water supply scheme on the day-to-day basis ensures that it's continuity to work for a long period of time and contributes for the continued utilization of the future development of water scheme.

Data collected from household survey revealed that about 85% of the households reported that currently water schemes are not functional and the remaining 15% of confirm that water schemes are functional. This implies that almost all the water scheme installed in the study area are not functional therefore, implementers in the future needs to assess the reason behind mulfunctionality of water schemes. The photo below shows water schemes are failed and the surrounding community faces great problem of water shortage.



A photo shows non functionality of water schemes

CHAPTER FIVE

Conclusion and Recommendations

5.1 Conclusion

In the study area, Woreda Water Desk and different NGOs construct water points. The finding from the present study revealed that the failure of many water development projects is due to ineffective participation of key stakeholders, low capacity of the communities in operation and maintenance of water system and management of water resources. Community in the study area has better understanding regarding the advantages behind WSP than the role of community participation on water supply schemes. They perceive community participation as the contribution of beneficiaries in terms of cash and kind.

Community participation in the water supply sector in Debatie Woreda is limited to paying little amount of money and contributing free labor for the construction of water scheme. Many of the water projects in the area have less sustainability. The ineffectiveness of management approaches have been the main impediments in improving water access. Findings also show that though the communities participate in the construction of water scheme, there is a limited involvement in planning, operation and maintenance, and monitoring and evaluation. Moreover, the involvement of family members is also limited to the implementation of the scheme. Their contribution focuses on the provision of free labor and locally available materials.

Regarding mobilizing the community by implementing agencies, the finding showed that there is a partial mobilization of the community. The communities were mobilized mainly at construction phase of the project. During the subsequent stages, they were less involved to operate and manage the water scheme. For example, final decision on where to locate the infrastructure and what form of the infrastructure to be fitted are made by local authorities and leaders without consulting targeted beneficiaries especially women and other vulnerable groups of water supply.

Community members represented by water committee, regional water bureau and other experts and private agency are responsible to manage the water schemes through managing facilities,

providing training to the technician and supplying of spare part respectively. However, responsibilities of managing the water scheme lies totally on village water committee who are not qualified to manage the scheme.

Almost all the households have sense of ownership to the water scheme i.e. they consider the scheme as their own property. However, their involvement through performing each indicators of community sense of ownership is low.

Due to lack of material, finance and human resource, institutional support efforts made on capacity building is too little. It was observed from the study that water committee members and water attendants were not adequately trained. Water attendants were not also committed due to inadequate training on basics of water operations.

From this study, it can be concluded that the major constraints for the full involvement of community on the water scheme are pattern of rural settlement, absence of adequate budget for empowering the community on the management of water scheme, report based implementation of schemes, limited human resource from the water sector, embezzlement of money collected from users.

5.2. Recommendations

Implementers should give more emphasis on creating awareness about participation among the community by focusing on the concept of community participation on water supply development. They have to create a better understanding among the community on why they need to involve on the water supply project. Moreover, th ey are expected to mobilize the community at all stages, as their participation should not be limited to the implementation of the scheme.

Implementing agencies should consult the community starting from the initial stages of the project work to the final monitoring and evaluation stage, which is an ongoing activity through the life cycle of the project.

Setting criteria for the selection of trainees is necessary. This helps to determine responsible participants for training and this helps to avoid corruption among village water committee who recruit trainees.

Diversified analysis based on the different stakeholders should be central to any rural water planning. Both implementing agency and the community have to involve in identifying factors that prevent households from participation. Opposition regarding implementation of the project requiring capital cost and other contributions from the communities is emerging. It is crucial to know whether this has any positive or negative implications on future outcomes.

The work of managing water scheme should not be given to village water committee. There should be work division among all stakeholders. Users, implementers and village water committee are responsible to manage the scheme. They should deregulate management activity. Implementers may help them thorough providing spare part, auditing and training. This helps the management activity or others.

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Annex

Guiding questionnaire for interview

	leading questions	Points to be raised
1	What processes do your organization used to construct water schemes	-process of Studying the problem -Site selection -Planning -implementation -Operation and maintenance -Monitoring and evaluation
2	What was the participation of community in each phases of the water supply projects	Level of participation(planning, implementation, operation and maintenance , monitoring and evaluation) -Ways of participation (in cash, in kind) -Attitude -Interest/ motivation
3	What efforts have your organization made to the active participation of community	Training -Type of training - Selection procedures of participants - Meeting(agenda, results, responses from the community)
4	What challenges have you encountered in constructing water supply schemes?	-Financial factor -Technical factor (qualification, absence of professionals) -Social factor -integration -weaknesses of organization on rural water supply projects -responsible factors for the mulfunctionality of water schemes
5	What is the arrangement of professionals in your organization?	Number of social worker Number of technicians other
6	Does the community have sense of ownership?	Indicators -follow up -maintenance - repairing -identifying misbehaved persons -giving any payment on time
7	Who is responsible for the governance of water scheme?	-capacity -Integration with other sectors
8	Do you believe that the technicians in your Organization is familiar with the technology installed on the water scheme? How?	-capacity to operate and repair -Availability of spare part - cost -Easily to be operated by the users (women, children, elder people and disabled persons)
9	Do you have any suggestion concerning to community participation on water schemes and there sustainability?	

Guiding questionnaire

Guiding questionnaire for Focus group discussants recruited by WWDO and kebele leaders who have completed household questionnaire.

	questions	Issues expected to be explained
1	How do you understand community participation on rural water supply projects	-Meaning of community participation -Necessity -How do you evaluate the benefit -Is the community interested to participate? W2hy? How?
2	What efforts are made by WWDO and NGO in order to motivate /encourage community participation on water supply projects	-Is there any assessment made on the problem - selection -Training (type of training , procedures of recruiting each trainers ,purpose of the training) -Meeting (agenda , purpose , results) -Are they given a chance for community participation? How? Why?
3	Do you think that communities have sense of ownership for the water supply projects?	-How? in terms of maintenance, repairing , paying water fee, follow up ,reporting important information
4	What are the stakeholders on the development of rural water supply projects?	-Planning -Implementation -Operation and maintenance -Monitoring and evaluation -How they contribute at each scheme? (in cash, in kind) -Is there active participation of community on RWSP?
5	What are the constraints for the active participation of community?	-Financial factor -Technical factor (type of technology , who select technology) -Training related with water supply projects - current status -Is there local technician -Social factor , Logistics -Administration , Consultation , culture How do you evaluate the current status of water schemes? -What are the weaknesses and strengths of your organization on rural water supply projects?
6	Who is responsible for the governance of water schemes?	-WWDO, NGO, Kebele leaders ,beneficiaries, -capacity -Who are the stakeholders on the development of water supply? -Who is responsible to manage operation and maintenance of the scheme? -Who is responsible to repair the scheme when it is non functional? -What are the roles and responsibility of each stakeholder?
7	Does your organization organize water committee?	-who recruit them -are they capable -Their responsibility
8	What do you suggest for the future concerning to active participation on RWSP	

Semi structured questionnaire for household survey

The purpose of these questionnaires is to generate information concerning to role of community participation on rural water supply projects at household level in debate woreda of benishangle gumuz regional state.

I hope the study will came up with viable findings that demonstrate the extent of community participation on rural water supply projects and constraints for the involvement of community. Therefore, you are kindly requested to answer the questions below carefully.

Personal data

Age..... sex Male ☐

Female ☐

Circle one from the alternatives

1. Did you participate on rural water supply projects? Show the level of your participation using tick mark on the table below

Stages of water supply projects	high	medium	low
Planning			
implementation			
Operation and Mentianance			
Monitoring and evaluation			

2. Did your household participate on the development of water schemes?

a) Yes b) no

3. If yes, how your families contribute to the scheme?

a) Free labor b) site selection c) by providing locally available materials

d) Useful information e) others.....

4. If your answer for number 2 is not what are the reasons of non-participation?

a) Agency interest to apply selective participation c) culture

b) Conflicting interest groups d) dominated by local elites

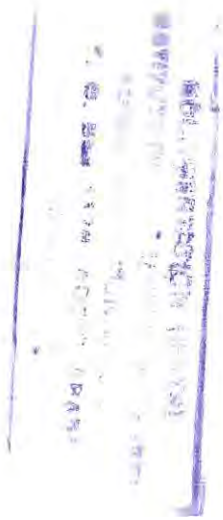
e) Lack of interest

5. Have the implementing agency provides chance for all community to involve on the development of water supply projects?

a) Yes b) no

6. If your answer is yes, during what stage they invite the community? Put tick mark () based on their invitation in each of the stages

Stages of water supply projects	**Level of invitation**		
	high	**medium**	**low**
Planning			
implementation			
Operation and Mentianance			
Monitoring and evaluation			



7. Are the schemes functional now?

a) Yes b) no

8. Do you have a sense of owner ship for the water supply schemes? If yes put tick mark based on the level of your participation in each activity

a) Yes b) no

Indicators of sense of owner ship	Level of participation in doing each activity		
	Excellent Very good	good	Not
Identifying misbehaved people			
Giving any payment on time			
Maintenance			
Repairing			
Follow up			

9. Does the implementing agency provide training?

a) Yes b) no

10. Does your household member participate in any kind of training related with water scheme?

a) Yes b) no

11. If yes, what types of training your family member attend?

a) Local technician b) casher

c) Water scheme manager d) other .....

12. Does the scheme was maintained by other external body when the trained peoples are un able to maintain the scheme?

a) Yes b) no

13. If yes who cover the maintenance and operation cost?

a) Woreda water desk b) beneficiaries

c) NGOs d) other.....

14. Is there any payment for the water supply service?

a) Yes b) no

15. If yes, what sort of charge does the beneficiaries asked to pay?

a) Payment on the bases of service delivery

b) Uniform or flat rate payment monthly / yearly

c) Uniform rate of payment daily

d) Other.....

16. What do you suggest to the level of service fee?

a) Should be free b) remains as it is

c) Should be decrease d) should be increase

17. Is the water tariff affordable for disadvantaged groups?

a) Yes b) no

18. Who decided the water tariff?

a) Implementing agency b) the beneficiaries

c) Village water committee d) Beneficiaries and water committee

e) Others .....

19. What type of cost is needed to cover by beneficiaries?

a) Costs of minor repair b) Salary for guard

c) Cost of technician d) Cost of spare part

20. Have you ever received receipt for paying service fee?

a) Yes b) no

21. Do you think scheme manager has a capacity to manage the finance?

a) Yes b) no

22. Do you believe that beneficiaries are reluctant to pay water fee?

a) Yes b) no

23. What do you recommend problems related with finance for the sustainability of scheme?

.....

.....

24. What do you suggest for the active participation of community on water supply project?

Declaration

This thesis is my original Work and has not been presented for a degree in any other university and all sources of material used for this thesis have been duly acknowledged.

Name: _____

Signature: _____

Date: _____

I, as University advisor. confirmed that this thesis has been submitted for examination with my approval.

Name: _____

Signature: _____

Date: _____

Place and date of submission: Addis Ababa, June 2011