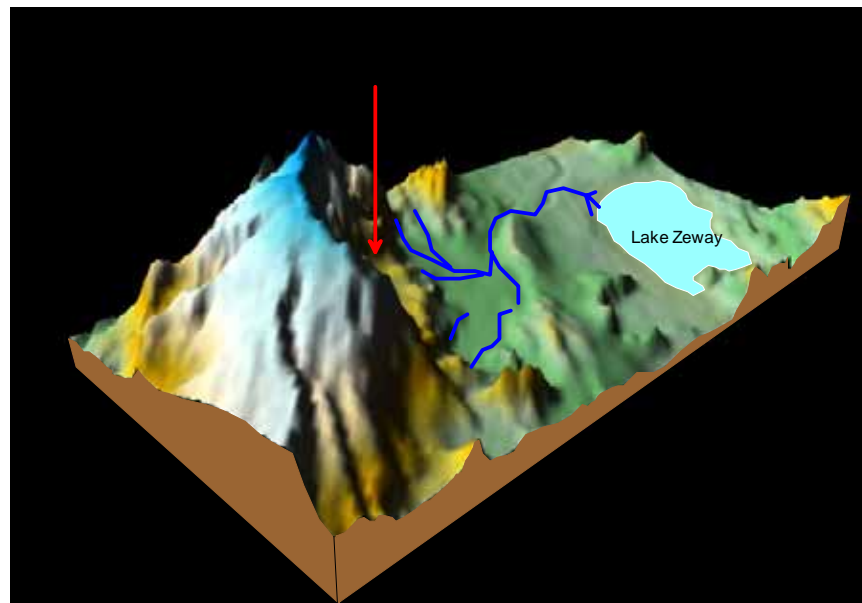


FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

**MINISTRY OF WATER RESOURCES  
ETHIOPIAN WATER TECHNOLOGY CENTRE**

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**BUTAJIRA – ZIWAY AREAS DEVELOPMENT  
STUDY**



**SOCIOECONOMIC STUDY**

***JANUARY 2008***

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## **1. INTRODUCTION**

Socio-economic assessment is an indispensable process that should be involved before the implementation any type development project for the very consumption of the project planners, designers, funding and the like.

Nowadays socio-economic assessments activities are carried out for different development projects at different level that at large, medium and small-scale level.

Accordingly this text is prepared to highlight the basic concepts of socio-economic assessment and the methodologies that should be followed by the experts who need to involve in the activity. And it is intended to share some practical experience that is obtained.

On this base this text discusses briefly the concepts of socio-economic assessment, why the assessment is required, major methodologies that should be followed in undertaking the assessment.

Final the text discusses the case studies of Ziway – Butajira area's socio-economic assessment that is related to water supply development as to share good experience in the area. The study area is shown on figure 1.

## **2. OBJECTIVE OF THE TEXT**

Basically, the underlying purpose of this text includes:

- To provide conceptual and practical guidelines on how to conduct a reliable assessment of the socio-economic conditions, in the various study sites within development, in consistent format.
- To introduce with the approach and methodology to undertake socio-economic assessment.
- To familiarize ones with objectives of socio-economic assessment for development projects.
- To highlight steps and activities that should be undertaken for socio-economic assessment.
- To introduce what to plan in undertaking socio-economic assessment.
- To share experience that have been obtained in undertaking socio-economic assessment for water project related to water supply development

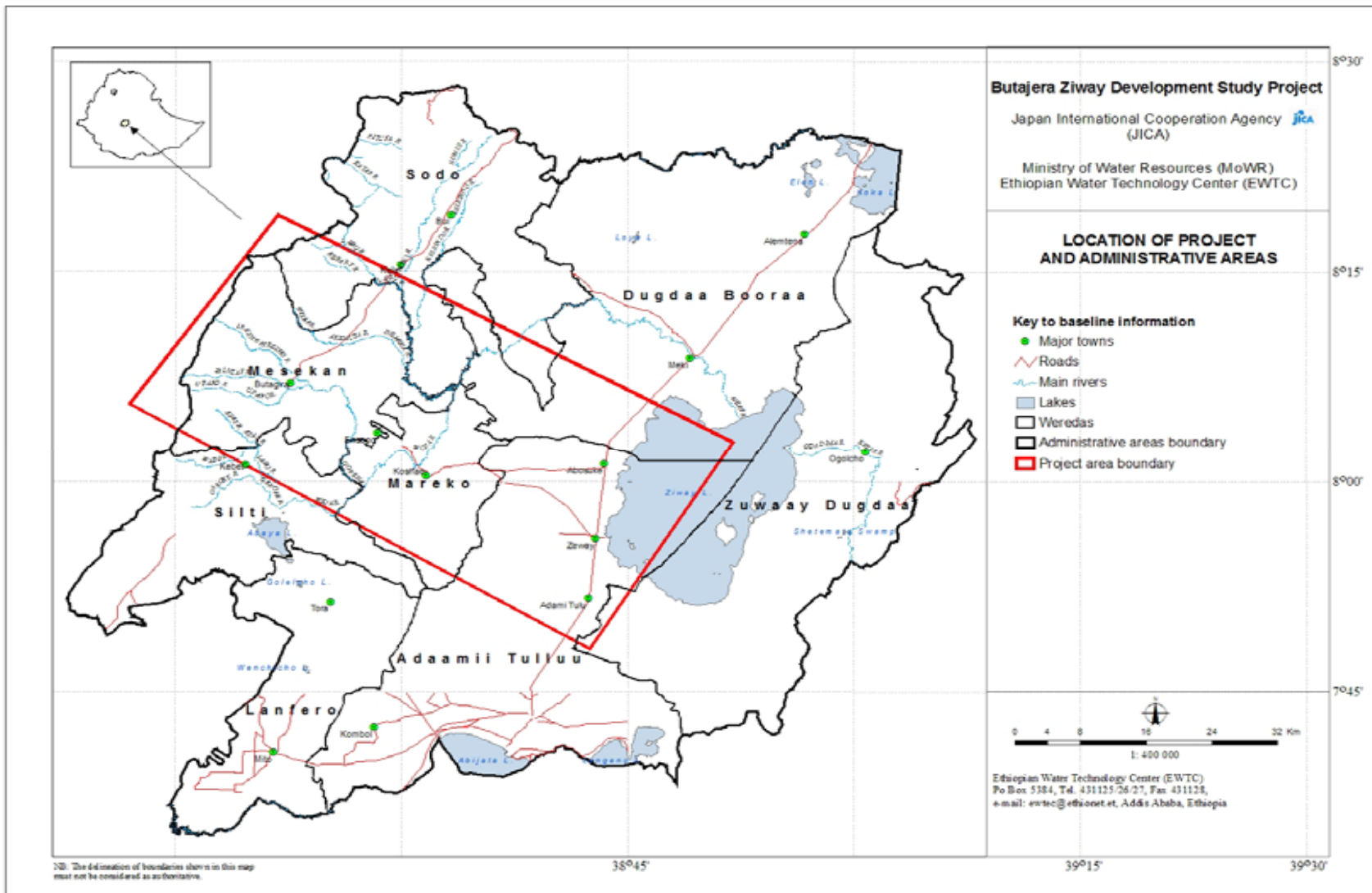


Figure 1 Location of the Study area

### **3. THE CONCEPT OF SOCIO-ECONOMIC ASSESSMENT**

Socio-economic assessment is a process that is executed from the planning of the project planning to implementation and operation. The socio-economic assessment of the Project focuses on those matters that are of real concern to the various groups, who may, in one way or another, be benefited and affected by some facet of the Project. At the same time, it addresses issues identified by those professionals with experience in similar projects and issues that must be addressed to meet regulatory requirements.

Socio-economic assessment refers to a wide range of interrelated and diverse aspects and variables relating to or involving a combination of social and economic factors. A socio-economic assessment is a way to learn about the social, cultural, economic and political conditions of stakeholders including individuals, groups, communities and organizations.

In general the socio-economic assessment focuses on the study of the relationship between economic activity and social life. The field is often considered multidisciplinary using theories and methods from:

- sociology,
- economics,
- history,
- psychology, and others.

Socio-economics typically analyze both the social impacts of economic activity and economic impacts of social activity. In many cases, however, socio-economists focus on the social impact of some sort of economic change. Such social effects can be wide-ranging in size, anywhere from local effects on a small community to changes to an entire society.

One of the main objectives of socio-economic assessment is to identify various socio-economic positive and negative impacts. The socio-economic impacts assessment should highlight possible relationships between assessed socio-economic variables and the environmental quality in the study site.

Generally the goal of socio-economic assessment is to figure out the positive or adverse impact of any development project would or have created on the project areas communities and point out the possible recommendation for the proposed development project.

### **4. THE PURPOSE OF SOCIO-ECONOMIC ASSESSMENT**

The purpose of socio-economic assessment include:

- To identify the social condition of the project area community
- To identify the economic condition of the project area community
- To identify the existing social service
- To identify the existing physical infrastructure of the project area
- To understand the potential socio-economic impact of the project
- To identify the possible mitigate measures for the adverse impact that may be caused by the project
- To understand the attitude of the community towards the proposed project
- To identify the prevailing resource related to the proposed project
- To establish data base of the project area

## **5. PLANNING THE SOCIO-ECONOMIC ASSESSMENT**

The first step to undertake socio-economic assessment for any development project is planning. Good planning leads to undertake successful assessment that in turn contributes for the good implementation of the proposed project.

Hence, in planning the activity of socio-economic assessment for the development project the followings are the major areas of planning:

- Data collocation activity:
  - Identify secondary data sources
  - Determine the required data
  - Prepare necessary instruments that enable to collect data
  - Identify documents that should be reviewed
- Determine the methodology that should be employed
- The human resource:
  - Identifying the human resource that should be deployed to undertake the activity.
- Identify all required material resources
- Budgeting
  - Build the cost that is required to undertake the activity
- Schedule
  - Prepare time schedule

## **6. APPROACH AND METHODOLOGY**

### **6.1 Approach**

The socio-economic assessment needs an integrated approach that should be dealt multidisciplinary professionals. Not only the professional but also all stakeholders should be cooperative while the assessment is carried out. Accordingly as to make the assessment successful the principal approach that should be adopted include:

- Participatory
- Professional ethics
- Respecting the community
- Transparency
- Communication

## **6.2 Methodology**

To undertake socio-economic assessment for development projects one has to employ various methodologies in combination or partly. These methodologies are discussed as the following:

### **6.2.1 Consultation**

Consultation is an integral part of socio-economic assessment process for development project. Consultation involves soliciting peoples view on proposed action and engaged them in dialogue. Unlike information dissemination consultation is characterized by two-way information flows, from project authorities to people, and from people to project authorities. Consultation of various groups including the concerned offices of the development project and administration unites of deferent level (that could be regional, zonal, Woreda and kebele) is prior activity.

In general consultation would enable:

- To create awareness about the proposed development project
- To collect secondary data on the socio-economic of the project area
- To facilitate the proceeding activities and
- To maintain communication relation

To undertake meaning full consultation process steps to be undertaken include:

- Clear idea about the proposed development project
- Check list of discussion points
- Check list to collect the required secondary data
- Development of a consultation framework

### **6.2.2 Baseline survey**

Baseline survey is the most important instrument to undertake socio-economic assessment for development projects. This would enable to obtain the first hand and reliable data about the project area community socio-economic situation.

a) **Developing questionnaire:** The common tool to undertake the baseline survey is questionnaire that should be prepared by concerned body giving an emphasises to the required data. There are different types of questionnaire to undertake socio-economic assessment. However for this text purpose we discuss the two types of questionnaires that are employed very commonly that are:

- ❖ Structured questionnaire and
- ❖ Unstructured questionnaire

Structured questionnaires are those which pose definite, concrete and predetermined questions that is they are prepared in advance and not constructed on the spot during the questioning period.

Structural questionnaires are used in a wide range of projects, both to initiate a formal inquiry and also to supplement and check data previously accumulated. These may pertain to studies of socio-economic situations of the given community or society.

Unstructured questionnaire refers to questionnaire that that is prepared on the spot while undertaking the survey activity in the field.

In preparing both types of questionnaires one involves in setting questions in different forms that include closed or open. Closed form questionnaires are required when categorized are required that is when they need to be put into definite classifications. In the same development open-ended questions are required when vast information is required from the surveyed.

Survey questionnaire should be composed of four sections.

- I. Information on institutional/ administrative arrangements and social organization
- II. Information about existing situation of social services
- III. Information economic situation
- IV. The attitude of the community towards the proposed project

When developing a questionnaire one has to:

- Make sure the questionnaire items match the objectives of the project
- Consider the demographic and cultural characteristics of your potential participants so that you can make it understandable to them.
- Use natural and familiar language.
- Write items that are clear, precise, and relatively short.
- Avoid "leading" or "loaded" questions
- Avoid questions that have double meaning
- Determine whether an open-ended or a closed ended question is needed.
- Arrange questions accordingly. The arrangement should be made to have the order as the following:
  - ❖ The questions placed first on the questionnaire must be those easiest to answer. Factual questions, such as name, age etc

- ❖ placing a question early in the questionnaire that can affect answers to later questions on the form should be prevented wherever possible
- ❖ A time sequence should be observed in the arrangement of questions
- ❖ Subject –matter sequence, like wise, is important, and insofar as possible all questions pertaining to one subject should be grouped together

b) Determining sample type: There are different types of sampling to undertake the required baseline survey. They are grouped in to two categories that is:

- Probability sample and
- Non-probability sample

Under probability sampling there are four sampling methods. These are:

- **Simple random sample:** refers to sample method that gives equal chance for all households under control to be selected.
- **Systematic random sample:** it is widely used in social science research and it defined as selecting every  $n^{\text{th}}$  unit from the given households after having selected the first by random method.
- **Cluster probability sample:** refers to sampling taking method that result to group the households based settlement pattern at large.
- **Stratified random sample:** This refers the sampling method which categorize the households in different strata including age, sex, religion wealth, education back ground and etc.

Under non-probability sampling there are also four types sampling methods. These are:

- **Snow ball sample:** This refers as to sample method to identify households who can refer to other with like or similar characteristics
- **Convenience sample:** This also refers to sample method to select households on base of convenience situation to the expert who undertake the survey.
- **Purposeful sample:** This refers as method to select the households on the base of cases that cold be determined by individuals, groups of individuals and communities, as appropriate or very informative for the purpose of the study.
- **Quota sample:** this refers to the method that predetermines the group of households to be included in for selection.

c) Conducting pilot survey: before the final baseline survey undertake place the survey instrument the questionnaire should be tested on pilot survey bases as to obtained relevant feed back.

d) Data editing: collected data should be edited. This is an inspection of the questionnaire for purpose of detecting omissions and inadequate entries and for making relationship check for consistency. Manual data editing should be also undertaken.

f) Data entry: Data entry should be done using the integrated statistical system analysis (ISSA)

g) Data analysis: Analysis will involve standard statistical analysis of the data and information collected. The analysis should be based upon the criteria developed before. The analysis should be carried out using statistical package for social science (SPSS)

### **6.2.3 Interviews**

Interview is believed to provide information on the attitude of and perception of community and religious leaders as well as other influential personalities in the study areas. The key informants who are believed to be knowledgeable about the communities socio-cultural and economic conditions will be identified primarily on the bass of other role and status in community. The interviewer asks the interviewee questions (in-person or over the telephone).

Interviews may be classified in to different types that include:

**The non-directive interview:** this type of interview is also designed as controlled or unguided or unstructured.

**The directive interview:** this interview uses a highly standardized techniques and a set of predetermined questions.

### **6.2.4 Focus group discussion**

This approach of data collection offers the opportunity to gather in-depth qualitative information on various aspects of the population in project areas by means of focus group discussion. Effort should be made to make each group as homogeneous as possible.

Members sharing similar socio-economic and demographic back ground such as religion, age, marital status and economic well being form distinct focus groups.

A focus group is a situation where a focus group moderator keeps a small and homogeneous group (of 6-12 people) focused on the discussion of a research topic or issue.

Focus group sessions generally last between one and three hours and they are recorded using audio and/or videotapes.

Focus groups are useful for exploring ideas and obtaining in-depth information about how people think about an issue.

### **6.2.5 Observation**

In the method of data collection called observation, the researcher observes participants in natural and/or structured environments.

It is important to collect observational data (in addition to attitudinal data) because what people say is not always what they do!

There are two important forms of observation: quantitative observation and qualitative observation.

1) Quantitative observation involves standardization procedures, and it produces quantitative data.

- Who is observed
  - What is observed
  - When the observations are to take place
  - Where the observations are to take place
  - How the observations are to take place
- Standardized instruments (e.g., checklists) are often used in quantitative observation.

2) Qualitative observation is exploratory and open-ended, and the expert takes extensive field notes.

The qualitative observer may take on four different roles that make up a continuum:

- Complete participant (i.e., becoming a full member of the group)
- Participant-as-Observers (i.e., spending extensive time "inside")
- Observer-as-Participant (i.e., spending a limited amount of time "inside")
- Complete Observer (i.e., observing from the "outside" )

## **7. Areas of socio-economic assessment**

Areas of socio-economic assessment vary from one type development project to other type. Hence, the assessment area for water supply development project include:

### **7.1 Geographical feature**

- Project area administrative location
- Project area climate
- Total area coverage of the project area
- Accessibility of the project area

### **7.2 Demography**

- Population size
- Family size

- Sex and age distribution
- Growth rate
- Population projection
- Life expectancy rate
- Dependency rate
- Migration trend

### **7.3 Social situation**

- Traditional forms of community structure
- Project area community's religious affiliation
- Project area community's social culture
- Community based organization and their role
- Community experience in development project
- Community attitude toward development project
- Assumed social benefit of the project
- Assumed adverse social impact of the project

### **7.4 Economic Situation**

- Types of major economic activity in the project area
- Types of secondary economic activity in the project area
- The main characteristics of the study site economic structure and its share in the national income
- The level of the living standard of the project area community
- The wealth ranking among the project area community
- Major income source and average annual income of the households in the project area

### **7.5 Settlement pattern**

- Type of community settlement in the project area
- Types of housing units in the project area
- Population density

### **7.6 Existing situation of social services**

#### **7.6.1 water supply**

- The source of water supply
- The status of the community access to safe water supply
- Social and economical problems of the community related to water supply
- The responsibility of fetching water for domestic consumption
- Water supply scheme management situation
- Level of community participation for water participation for water supply development
- Attitudes of community towards water supply development
- Potential water resource for the development
- The need area and potential demand of water supply
- The capacity of the community to manage water supply

- Average time taking to fetch water for domestic consumption

### **7.6.2 Health, sanitation and hygiene situation**

#### a) Health situation

- Major health problem of the project area community
- The ten top diseases in the project area
- Children health situation in the project area
- The trend of water related health problem

#### b) Health facilities

- Existing health institute in/or near the project area
- The status of the institute by human power and required equipments

#### c) Sanitation and hygiene situation

- The attitude of the project area community towards sanitation and hygiene
- Community practice to avoid liquid waste
- Community practice to avoid solid waste
- Trend of improved hygiene practice of the community

#### d) Existing sanitation and hygiene facilities

- Percent of household has latrine
- Percent of household has hand washing facility
- Percent of household has waste pit
- Type of latrine under use

### **7.6.3 Education**

- Existing education institute in the project area
- School enrolment by sex
- Teacher student ratio

### **7.6.4 Gender**

- Social and economic roles played by women in the community
- The role of women in the existing decision making system
- Power and authority distributed in the community, both formally and informally
- The degree of local women participation in the development project activity
- What is the cultural hindrance for women to involve in development project
- The potential positive and adverse impact of the proposed project on local women social and economic life

### 7.6.5 Concerned institutions and capacity

- The role and responsibilities of concerned institutions
- Organizational set up of concerned institutes
- The capacity of concerned institutions in terms of human power

### 7.6.6 Stakeholders

- Identifying the stakeholders
- Identifying the interest of the stakeholders
- Identifying the capacity of the stakeholders

## 8. SOCIO-ECONOMIC CASE STUDY OF BUTAJIRA AND ZEWAY AREA

### 8.1 Objectives

The objective of the study include:-

- ◆ To investigate the baseline of the villages and Koshe town water resources, socio- economy and health conditions;
- ◆ To assess the socio-economic seatuation of the project villages and a town (i.e. to make questionnaire survey for the selected household in the villages and Koshe town and to obtain actual living conditions and household economy); and
- ◆ To prepare a baseline data for the impact assessment to be conducted in the future after water supply systems are installed.

### 8.2 The Project Areas

The project areas are three Woredas, which are located in Oromiya and Southern Nation Nationalities and Peoples Regional states.

The locations are presented in the following table.

*Table 1 The study Woreda and Locations of the Boreholes*

Borehole No.	Weredas	Village/ Town	UTM Coordinates and Elevation	Remarks
1	Meskan	Kecha Ber	424546E, 894352N Elev. 2116m.	
2	Meskan	Semen Shershera	436926E, 899128N Elev. 1962m.	
3	Mareko	Weja	446990E, 886227N	Near Koshe town

			Elev. 1814m.	
4	Mareko	Kuno Kertafa	440016E, 888301N Elev. 1831m.	
5	Mareko	Koshe town	448712E, 885846N Elev. 1859m.	
6	AdamiTulu Jido Kombolcha	Shisho Tora	463091E, 867135N Elev. 1669m.	
Existing Well	Mareko	Koshe town	448387E, 884903N Elev. 1885m.	Town Water Supply

### 8.3 Approach & Methodology

Obtaining reliable qualitative and quantitative data is the key activity for this study as to come up with good assessment and show a clear picture of the study areas. On this premise while undertaking this study various the following approach and methodologies have been employed.

#### a. Document Review

Relevant documents have been reviewed to have the necessary background about the study areas. To this end the following documents were closely reviewed both at the office level and during the field works:

- ❖ Progress report on the Butajira-Ziway areas development study and
- ❖ Annual Reports of the Water Service Offices;

#### b. Data / Information Collection and Processing

Before launching the study, the consultant has developed an implementation plan which shows how to gather the required data / information. This includes the use of primary and secondary sources of information.

Primary information gathered on site by means of physical observation of all the water supply system facilities and contacting individuals in their respective villages

Secondary information were collected in the project Woredas from the reports and organized data that were available in concerned offices that are Rural and

Agricultural Development Offices, Health Offices, Education Offices, Water Resources Development Offices and town water supply offices. The data were gathered based on prepared secondary data gathering format.

The Consultant adopted a participative approach in conducting the baseline survey. Meetings with potentially key informants from each Woreda's water and other sector offices were conducted. During such meetings participants were encouraged to provide the necessary data /information. The study team has conducted discussion with the members of the Woreda water resources office and town water office and officials from the sector and Woreda administration. The team also visited all water facilities such as: boreholes, reservoirs, and public fountains. Relevant photographs were taken, to highlight the conditions of the facilities.

#### c. Developing Questionnaire and Checklist

The main survey tool, the questionnaire has been developed and structured to collect the primary information at the village level from the household heads. The questionnaire is structured in four basic parts that are: 1) the general socio economic, 2) economic, 3) water supply and 4) health and sanitation aspects of the households.

Regarding the checklist two types of checklists have been developed to collect both secondary and first hand information from sector offices and target communities representatives respectively. For secondary data purpose the checklists are prepared targeting, Woreda administration office, Water resources Development office, Health office, Agriculture and Rural Development office, Education office and Finance and Economic Development Woreda's office to obtain reliable information about the project Woredas in general.

#### d. Conducting the Household Survey

The size of the sample household to be covered by the survey is determined by the client to be 130 households, which are 20 households for each village except for Koshe town and surrounding that has 30 households. Based on the given household size to select the household that should be interviewed systematic random sample technique is employed, for this technical implementation the fresh list of the households who are assumed to be potential user is obtained from concerned Kebele administrators. Accordingly, in all selected villages all households were selected by systematic random method from obtained lists.

All selected households in their respective villages are interviewed at their home using their regional working language namely Oromifa for Adami Tulu and Amharic for the rest two Woredas Mareko and Meskan.

#### e. Focus group discussion

To obtain reliable and general information about the socio-economic seatuation of the village communities' focus group discussion was organized for each selected village except Weja village that is merged with Koshe town and surrounding by consulting the client. Hence, five focus group discussions were organized on different days.

The focus group discussions have been undertaken with different strata and fair representation of various groups of the community. All possible efforts have been done so that the representatives were: religious leaders, head of community based organizations, Kebele administration, women and youth. The size of the group was limited not to exceed 12 but persons who were interested have joined the group in all places.

The respective Kebele administrators and the study team have selected the participants of focus group discussion. The discussions at each place were budgeted not to consume more time (that should not exceed 3 hours) and checklist was used to guide the discussion. Guided by the checklist, discussions related to topics such as settlement pattern and social cohesion of the communities, resources bases of the communities, crop production and food security seatuation, traditional supporting system, women's role in household asset building, water supply, existing community experience in water scheme management and economic and social problems of the community were made.

#### f. Assessment of Existing Water Supply Systems Situations

Assessment of the representative existing water supply systems situation for each Woreda and the five villages and a town water sources has been carried out. This has given the study team the opportunity to observe the existing and real situation of the water supply facilities in each Woreda.

#### g. Data clearing, entering and analysis

The data that is collected from the field using the survey instrument that is questionnaire is first checked for clearing purpose and entered in to a data base system developed using SPSS 12.0.1 for windows software.

After the entry the data is analyzed to generate information about the households' characteristic, economic, health and sanitation seatuation and the water supply condition at large in terms of frequency and average mean as to perceive the village resident situation.

## **8.4 The Survey out put by specific area**

### **8.4.1. Adamitulu Jido Kombolcha Woreda**

#### **8.4.1.1 General**

Adamitulu Jido Kombolcha Woreda is located in east Shoa zone of Oromia Regional state. The total area of the Woreda is estimated to be 1403.25 Sq.Km and it is structured by 6 urban and 32 Kebeles.

The Woreda agro climatic zone is situated in dry and tropical rainy / woinadega / climatic zone constituting about 60% and 40% respectively. By elevation the Woreda is situated between 1560 and 2300 meters above sea level. As per information obtained from Woreda agriculture and rural development office the Woreda annual average rainfall is 750 mm.

#### **8.4.1.2 Population**

According to information obtained from Woreda administration office, the Woreda total population for the year 1999 is estimated to be 136587. Out of this the males are 76437 constituting 56 %, while the females are 60150 constituting 44 percent.

#### **8.4.1.3 Religious Affiliation**

The Woreda population follows different religions but the very majority of the people are the followers of Muslim. Accordingly 90% of the total population is reported to be the followers of Muslim that is followed by Orthodox religion followers constituting 5% of the total population.

#### **8.4.1.4 Settlement and Land use Pattern**

The population settlement pattern in the rural areas of the Woreda is observed to be dispersing as influenced by topography, agro-climate and water resource. The settlement is dominated by village type that is formed by extended family.

Regarding the land use pattern as per Woreda rural and agriculture development office data most of the land that is estimated to be 61599 ha /43.9%/ is under

cultivation and this is followed by grazing land that covers about 25405 consisting 18.1 percent indicating the domination of cattle rearing activity. Along this the water coverage is reported to be 22100 ha constituting 15%.

The Minimum land holding size is reported to be 0.5 ha and in this respect about 215 household heads consisting 1.1 percent of the total households are reported to have the minimum size where as the majority of the households hold more than 2 ha constituting 58.9 percent. In general this shows, as there is no land shortage in the Woreda when compared to other areas.

#### **8.4.1.5 Economic activity**

Agriculture is the very dominant economic activity of the Woreda that predominantly practiced by the rural areas residents. It is mixed one that is characterized by crop farming and livestock rearing activity.

##### **A. Farming**

Farmers in the Woreda undertake their agricultural activities in its traditional form except some who use modern input such as fertilized and selected seeds to increase their crop production.

In farming activity it is very common to use human and animal labour. Ploughing is carried out by two oxen that is usually managed by men. On other similar activities all the family members who reach the working age have the responsibility to contribute to their capacity including women who have the highest responsibility at home.

Due to the uni-model type of rain in the Woreda there is only meher /autumn/ season crop production. To this effect Maize, Wheat, Teff, Barley and Sorghum are the dominant crops that grow in the Woreda.

According to information obtained from Woreda agriculture and rural development office both modern and traditional irrigations practices are practiced in the Woreda at low level when it is evaluated against the water resource that exist in the Woreda.

To this end it is only about 1003 ha and 873 ha of land that has been cultivated under modern and traditional irrigation. The sources of water for the existing irrigation activity are Bulbula River and Lake Ziway. Households who practice irrigation farm activity mainly produces onion, tomato, green beans and cabbage for market consumption at large.

##### **B. Livestock rearing**

Rearing livestock is the second most important agricultural activity in the Woreda amongst the majority of the farmers and hence in the Woreda there are numerous livestock as a resource by variety such as Cattle, Goat, Sheep, Horse, Mule, Donkey and Poultry.

For the Woreda population particularly who reside in rural areas rearing livestock has various values such as economic value, food value, transportation and social value. As economic value livestock will be sold when money is required and food value except equine the rest will be used as a source of food. The equine will serve as means of transportation for human and materials. As a social value, the peasant who has a large number of livestock will be respected among their respective community.

#### **8.4.1.6 Social services**

##### **A. Water supply**

In Adami Tulu Jido Kombolcha Woreda, according to obtained information from Woreda water resource office and the 1997 budget year report of the Woreda finance and economic development office, there are about 82 water supply schemes of different types.

Out of the total water supply schemes it is reported that 31 schemes are reported to be functional while the rest 51 schemes are not functional for different reasons including technical and fluoride problem.

*Table 2 Water Supply Scheme by functional status in Adami Tulu Jido Kombolcha Woreda.*

Scheme Type	No	Functional Status			
		Functional	%	Non-functional	%
Deep Well/Motorized	26	16	61.5	10	38.5
Shallow well with hand pump	27	10	37	17	63
Hand dug well with hand pump	2	2	100	-	-
Wind mill	26	2	7.7	24	92.3
Solar System	1	1	100	-	-
Total	82	31	37.8	51	62.2

Source: Woreda Water Resource Service.

Since the Woreda is located in the rift valley the problem of high fluoride content is very common almost in all Kebeles. As per information obtained from Worked water resources office there is undergoing effort by the NGO called Salisian Sisters to address the high fluoride content problem.

Concerning maintenance particularly to undertake minor maintenance the office has technical capacity but budget is reported as a major constraint.

On other hand, as far as the management activity of the community on functional schemes is concerned it is informed that there is good management practice by the community and committee members. The reason for this is believed to be the sensitivity of water in the Woreda both for human and livestock consumption and the attention given by the community at large.

For such reasons it seems that most of the rural communities have developed the awareness of water is economic good. This reflected by the regular payment that is made by the community for operation and maintenance almost in all water supply schemes. In the Woreda the average water tariff is Birr 4.00 for 1m<sup>3</sup>.

Apart from this, the communities who have no access to safe water supply depend on three rivers, 75 ponds and 375 traditional hand dug wells for human consumption and for their livestock. Indeed among the community who use the traditional sources of water for human consumption and cattle consumption the problem of water particularly the distance and the shortage is very crucial affecting their development activities that is reflected in terms of poor health and poor economic status.

## **B. Health and sanitation**

In the Woreda there are different types of health institutions providing the health service for the Woreda communities both in urban and rural areas. According to information obtained form the Woreda health office the Woreda health coverage is reported to be 84% for the year 1998.

In the Woreda there is only 1 health center and 13 health posts. All the health posts are suited in 13 rural Kebeles to give the first level health service for the needy person.

By health professional workers in the Woreda there are 2 health assistants, 6 senior nurses, 2 junior nurses and 12 front line health workers. Along this at the community level there are also health volunteers who undertake promotion among their respective communities.

For the year 1998 Malaria is reported to ranking first among the ten top diseases. On this report diarrhoea is reported to be at the fourth stage indicating the prevalence of water related problem in the Woreda.

Regarding sanitation situation in the Woreda according to the health office information out of the total 24869 households 18406 have latrine where as 6463 have no any. In same development all health institutes are reported having

latrine and waste pits. As far as waste pit for the household is concerned it is reported that there is no household who have that facility.

### **C. Education**

The education coverage of the Woreda is reported to be 93.3%. According to obtained information from Woreda education office there are 27 first cycle schools, 21-second cycle schools and 1 high school. In all schools in 1998 budget year there were 32,675 students and 338 teachers.

Particularly, the first cycle schools are distributed almost in all kebeles except for a few kebeles being a good opportunity for rural children to get school at a near distance form home.

#### **8.4.1.7 Physical infrastructure**

##### **A. Electricity Supply**

In the Woreda all the six urban kebeles have a 24-hour electric power supply with hydropower source. Regarding rural kebeles only three kebeles are supplied with the electric power where the rest 35 rural kebeles have not the opportunity.

##### **B. Communication Service**

In Adami Tulu Jiddo, Kombolca Woreda there are four Telecommunication stations in urban Kebles serving the surrounding communities. In addition to this 36 rural kebeles have got the service which is very encouraging one, this shows that except the two kebeles' communities the rest have an easy access to communicate with telephone mainly for the market purpose. Regarding postal service, in the Woreda there is one post office that is found in Ziway town and two agents in Bulbula and Adami Tulu.

##### **C. Road**

The Woreda is crossed by 42.5 km. Asphalt road that stretches from Addis Ababa to Awassa. Within the Woreda there is 42 kms all weather roads that connect different kebeles and neighbor Woredas.

Apart from this there are numerous access/ all weather/ roads connecting all kebeles with the capital town of the Woreda all the seasons.

#### **8.4.1.8 The Survey findings of Shishitora**

Shishitora village is one of the study areas that is located in Adamitulu Jido Kombolcha Woreda. The number of the total household heads of the village is 207 based on this by considering the average family size of the Woereda 7.1 person the total number of the village population is calculated to be 1470.

The village is accessible through paved way that is constructed by the community. Except this there is no any other physical infrastructure in the village such as telephone and electric power.

The entire households are farmers who depend on mixed agricultural activity that is farming and livestock rearing for their subsistence livelihood.

For the village community safe drinking water is a crucial problem that has affected the health and economic life of the community. Because of this the community has a great need to have the water supply development in the village to get relief from the problem and has a considerable interest to enjoy improved health and living standard.

#### **A. The Households Characteristic**

The number of the targeted households to be beneficiary from water development is estimated to be 207. It is out of these households that 20 were selected by systematic random sampling method for the survey.

Among the households that were covered by the survey the males were 15 and females were 5 constituting 75 percent and 25 percent respectively. By age group distribution the majority of the sampled households were found in the age group of 25-36 constituting 35%, and this is followed by the age group 15- 25 and 36-45 constituting 25% and 20 % respectively.

The entire surveyed households constituting 100% belong to Oromo ethnic group indicating the homogeneity of the village community at large. In same development the survey result shows that the entire surveyed households are the followers of Islam religion, which is also true for the entire village residents.

By marital status the survey output indicates that the majority of the surveyed household are married having the responsibility to administer their family with their spouse and this constitute about 85% of total surveyed households, where as the rest few in number that constitute 15% were widow.

Regarding the educational level of the interviewed households the survey output indicates that about 30% are illiterate where as the rest are reported for the level of read and write and 1<sup>st</sup> grade and above constituting 10% and 60% respectively.

#### **B. Economic activity**

The main economy activity of the Shishotora village community is agriculture, which is the mixed one that is farming and livestock rearing. This is subsistence for all the households who reside in the village. On this base the survey output indicates that almost all the surveyed households are farmers cultivating crops and rearing livestock for their family livelihood. From the household survey it is learned that except one household who is involved in farming and trading activities side by side the rest are farmers.

Apparently among all the households in the village agricultural activity is carried out in most cases in its traditional forms. Hence the farmers usually use two oxen to plough land and the male household head and any active male member of the family manage this activity. Apart from this to undertake related activities without sex difference every economically active person has the responsibility to involve and contribute labour to the level of its capacity. Because this fact among the village community the women have also the responsibility to work in the field in addition to the chore at home.

### **Crop production**

The types of crop that grow in the village are influenced by agro ecology of the study area and for that matter the most dominantly produced crops are Maize, Hours bean, Teff. Among the sampled households nearly all responded that they produce the above-mentioned crops. The majority of the households that constitute 35% have cultivated hours bean for the season.

In the Shishotora village the crop yield that is obtained from crop farming was not that satisfactory and this is mainly attributed to the extent of modern inputs that are utilized for the activity at large. To this effect it is analyzed that among the sampled households only 5% are reported to use modern fertilizer while others constituting 75% and 20% use traditional fertilizer/manure/ and never use any type of fertilizer in the season respectively.

As far as selected seeds utilization is concerned the survey result indicates that about 55% of the surveyed households use selected seeds whereas the rest 40% don't use selected seeds. The seed that is preferred and utilized was maize only.

For farm activity the entire surveyed households reported that they have their own plot of land be it small or large in its size. In this respect the majority of the households that constitute about 40% reported that they hold 1 ha. and some households that constitute 20 percent reported for 0.5 ha land holding.

Rearing livestock is a very common activity in Shishotora village since it is the tradition that is inherited from past ancestors. For this reason nearly all the households have livestock in the village. This could be justified by the survey output

put and so that among sampled households 90% are reported to own livestock were as only 10% are reported to have no livestock.

Regarding number of owned livestock by the surveyed households it is reported that about 35% of the surveyed households own 4 different types of livestock where as the rest of the households that constitute 29% and 17% reported to own 3 and 2 respectively.

Similar to the agricultural activity this activity is also carried out in the village in its traditional forms. So that there is no cattle cross breeding activity in the village to make the activity intensive having few number of selected breed of cattle.

All in all, however most of the households have involved in the activity the problem of water is considered to affect the development and because of this reason the obtained benefit is believed to be very minimum.

### **Irrigation activity**

In Shishotora village some household have a good awareness about irrigation, however there is no opportunity to practice since there is no water source for such purpose. In fact by the household survey only one person is identified undertaking the practice on a very small plot of land using the pond water which doesn't last long but serve until the dry season starts.

### **Income and Expense**

Since most of the village residents are farmers by their occupation and the major income sources is nothing but crop selling and livestock selling. Due to this the major income sources of the surveyed household is found to be crop, livestock and livestock product. To this end about 95%, 60% and 40% of the households responded that they generate income from crop, livestock and livestock product selling.

To get information about the average annual income of the surveyed households, they are asked to tell their annual average income particularly for the fiscal year and to this reply the most of the surveyed households that constitute 45% reported that their annual income falls in range of birr 100- 500, next to this some 30% of the surveyed households reported that their annual income was more than birr 1550 for the fiscal year.

Along this the households are also asked whether their annual average income is enough or not. To this response out of the surveyed household that account 70% and 30% have responded that it is not enough and it is enough. From this analysis in fact it is very simple to conclude that the residents of the village are not at the level of good economic condition.

Among those who have responded the average annual income is not enough for their livelihood, most of them responded that they have a plan to improve their income by expanding their agricultural activity and involving in other activity that would enable to generate additional income.

### **C. Residential Housing Unit Type**

The residential housing units in the village are typical of the rural type mainly constructed by locally available materials. Thus the housing units are classified into two types that are thatched roof type and corrugated iron sheet roof type. With this respect the housing unit type that dominantly exist in the village are thatched roof with different size namely from small to largest one. About 95% of surveyed household have thatched roof-housing unit where as only one person has housing unit with corrugated iron sheet roof.

All the housing units have wall constructed of mud and wood and also have floor constructed of earth. The typical type of the housing units that is thatched roof ones have circular shape with out separate room for different purpose but in side the house there is partition structure by wood for bed, cooking and domestic animals for the night time purpose.

Nearly all households in the village have no separate kitchen for cooking in the village. Hence, to this end among surveyed households about 73.7% responded that have no separate kitchen where as only 26.3% responded have separate kitchen.

### **D. Water Supply Aspects**

#### **Source of Water Supply**

Before four years ago the Shishotora village community had an access to safe drinking water supply from deep well source that was located in the village. Right after the scheme ceased its function for the reason of technical problem that remains beyond maintenance, and the community has been compelled to look other source including safe water supply that is located at a far distance from the village and river, which is also located at a far distance.

With this respect currently among the surveyed households about 70.6% of them responded that they get water from the deep well source, which is safe for drink for their domestic consumption from far distance. On other hand the rest of the household that constitute 23.5% responded that their water source for domestic consumption is river.

With regard to the water supply problem the nearly all except one households responded have a great water supply problem for household consumption and their livestock. In stating the specific problem most of the surveyed households

that constitute 55.6% responded the distance problem as a major one and this is followed by the response for shortage as a major problem by 33%.

In considering the impact of the problems on socio economic life of the family the surveyed households were asked about what major impact they have confronted. In response to this question most of the survey households mentioned the followings as major problem.

- Health problem that is caused by water born disease.
- Long time wastage that could be devoted on other economic activity.
- Too much cost to get safe drinking water.

In the village except during rainy season there is water shortage problem throughout the year for both human and livestock consumption, and according to the household survey some 40% of the households responded that they face the problem of water supply throughout the year while the rest 60% responded for dry season.

In the village the need of water for livestock is very enormous since there is no river around at a near distance. For this reason there are a number of ponds with different sizes that don't store water throughout the year. Hence all ponds that exist in the village will get dry at the period of dry season resulting in water problem for livestock. It is on this premise that among the surveyed households about 85% responded that they get water for their livestock under difficult circumstance.

### **Time taken to fetch water**

Regarding the distance that is traveled by the household to reach the water supply sources, among the sampled households, most of them responded that it takes them more than an hour for a single trip. As the result of survey findings households constitute about 44.4 percent responded they travel an hour to reach water pint. In fact this is meant by the respondent nothing but to reach the river or the water supply that is found in Adamitulu kebele. So that this doesn't indicate the distance to reach ponds that mostly located at a near distance from home.

### **Water quantity and quality**

Concerning the adequacy of water that is obtained from any of sources the survey result shows that out of the total surveyed households about 69.2% responded that the water from well source that is obtained from neighboring kebele is not adequate, where as the rest 30.8% responded that it is adequate.

For households who usually use the deep well source for domestic consumption there is no water quality problem. To this effect among the surveyed households

about 85% responded that they have satisfaction with the quality of water. To this contrary only 15% responded that they are not satisfied with the quality of water.

### **Water fetching responsibility and transportation**

Similar to other areas in the Woreda in Shisho tora village fetching water for domestic consumption is the responsibility of women and daughter. In this respect, among the surveyed households about 47.4% and 15.8% responded that fetching water is the responsibility of wife only and wife and children respectively. All this conditions shows that how the village women suffer from the workload that is daily practiced in addition to food preparation and fieldwork for agricultural activities.

In the village it is common that human and animal or both types of labour is used to transport water from source point to home. The most important animal for this purpose is donkey. Concerning labour that is commonly used to transport water among the surveyed households some 47.4 % responded that they use family labour while the rest 52.6% responded that they use animal labour.

### **Priority need and consumption rate**

In mentioning the priority need area of water, the entire surveyed households responded that their need is for drinking and have also labeled this at the first rank of any other purpose.

Concerning the consumption rate of the water mainly for major purpose including for drinking, food preparation and hygiene most of the surveyed households that account 80% responded that they consume more than 80 liter per day at family level. When this converted to each of the family member it would be 10.14 liter which is below minimum standard that is 15 liter for rural resident.

### **Water payment practice and contribution for the development**

As far as payment for water is concerned the entire surveyed households responded that they pay for water. The payment is made on tariff base that is fixed by the community who own the water supply scheme. The amount of the tariff is 0.15 cents per Jerrican that contains 20 liter. In most cases the cost of water per Jerrican raises to 0.50 cents if one is supposed to use rented cart to transport from the source to home.

Mainly for the reason that there is no water supply access in the village and facing various problem, water supply development a priority need of the village residents and the neighboring kebele residents. Hence, all the surveyed households with no difference responded that access to safe water supply is their

priority need and along this the surveyed households have also expressed that they are very willing and ready to participate actively in such development activities through different contribution. To this end among the surveyed households about 33.3%, 44.4%, 5.6% and 16.7% have responded to contribute money, labour, locally available material and all in combination respectively.

#### **E. Health situation**

The health situation of the area residents is not that good but poor mainly because of malaria and water related or born diseases. In this respect the surveyed households were asked whether there was major health problem that confronted the family. In responding to this about 63% of the sampled households responded that they have confronted the problem.

Among those households the great majority that constitute about 75% reported as malaria was remained to be the problem affecting their family health. This is also followed by Giardia which is reported by 16.7% of the concerned households.

Regarding treatment in most cases all sick persons have been treated by modern health institutes namely at a nearby health post and health center that are located in Adamitulu and Zeway. There are also who reported that they obtain the treatment from local healers and this account about 15% of the surveyed households who has reported the case.

Regarding diarrhea occurrence within one year period the majority of surveyed households that constitute about 85% responded that there was no case among their family where as about 15% have mentioned its occurrence among different groups of person Among their family. For this case children under five are reported to be the victim of the disease. In all case according to the survey result the major occurrence is one time.

#### **F. Sanitation situation**

As far as the sanitation aspects of the study area is concerned, the surveyed households were asked whether they have or have not latrine for their family, and to this about 85% of the households responded that they have latrine where as the rest 10% of the surveyed household have no latrine for their family. This is believed to be an indication of the prevalence of a good awareness about sanitation among the community.

In terms of utilization it is reported that mostly the adult men and women utilize their latrine under regular condition with few exceptional cases. On other hand regarding children it is reported that there is no similar trend for different reason mainly fear of risk assuming that children may fall down in to the latrine.

With regard to the type of latrines that have been constructed by the surveyed households that dominantly observed were traditional pit latrine and this type of latrine reported by the entire surveyed households.

Concerning utilization the majority of the households replied that particularly adult men and women groups use latrine under regular condition where as only few replied that these group utilized under seldom condition.

However the motivation and practical involvement of latrine construction that exists in the village is encouraging, the emphasis given to the standard issue is not that satisfactory.

Beside this, it has been tried to identify why a few households did not construct latrine for their family. In response to this, among the surveyed households those who don't have latrine mentioned that economic and skill problems as major problems.

Because of the absence of latrine these households and their family uses different areas for defecation. On this base the common defecation area for these households include back yard, bush and farm fields. As the result of the survey out put the total households that don't have latrine about 33%, 33% and 33% responded to use back yard, bush and farm fields respectively.

From the survey, it is also learned that there is no cultural and traditional objection to have and utilize latrine among the village community. To this end the entire household who don't have latrine during the study period agree to have latrine for their family.

During the survey while interviewing the households at their home the sanitation conditions of the residential house of the inside and outside parts have been observed. To this end as the survey finding indicates most of housing units that are observed during the survey were found having clean sanitation for their inside part. This could be expressed in terms of proportion that is about 72% and 22% of residential houses are observed being clean and not clean of the inside part respectively. Unclean condition of the housing units is mainly attributed to animals that pass the nighttime with family members and lower living standard of households at large.

With relation to environmental sanitation the surveyed households are asked where they dispose waste that will be generated inside and outside home. Out of the total surveyed households 36.8%, 36.8%, 15.8 %and 10.5% responded that they dispose at the back yard, in front of home, communal disposal place and in farm land respectively.

## **G. Improved Hygiene practice**

Regarding improved hygiene practice among sampled households by taking different parameters particularly for critical time, nearly all the households responded that adult men and women practice hand washing under regular condition at critical period where as for children it is reported to be seldom. The prevalence of the regular practice is attributed to the Islamic religion principle that demands the followers to pray God by keeping personal hygiene.

Along this concerning the frequency of bathing practice the majority of the households that constitute about 52% reported that their family members would take bathing every week and this is followed by the households who have reported that their family members take every two weeks and every month constituting about 26.3% and 21.1% respectively. In the same way regarding family cloth washing practice the majority of the households that constitute 52.6% reported that they usually undertake every week while the remaining households that constitute 26% and 21.1% reported that it is carried out every two weeks and every month respectively.

#### **8.4.2 Mareko Woreda**

##### **8.4.2.1 General**

Mareko Woreda is located in SNNPR state of Gurage zone. Mareko Woreda is bounded on East by Adamitul Jido Kombelcha Woreda, on South by Siltte Zone, on West by Meskan Woreda and on North by Sodo Woreda. For administration purpose the Woreda is structured by 1 urban Kebele and 23 rural Kebeles. The total area of the Woreda is estimated to be 223.29 sq. km.

The Woreda capital town is Koshe, which is located at a distance of 160 km, 138km and 275 km from Addis Ababa the capital city of the country and Awassa town the region capital and Welkite town the Zone capital town respectively.

The Woreda agro climatic zone is seatuated in dry and tropical rainy /dry woinadega/ climatic zone constituting about 100%. By elevation the Woreda is seatuated between 1800 and 2000 meters above sea level. As per information obtained from Woreda agriculture and rural development office the Woreda annual average rainfall is 600 mm.

##### **8.4.2.2 Population**

According to information obtained from Woreda administration office, the Woreda total population for the year 1998 is estimated to be 70193. Out of this the males were 34960 constituting 49.1%, and the females were 35233 constituting 50.9%.

#### **8.4.2.3 Religious Affiliation**

According to information obtained from Woreda administration office the Woreda population follows different religions and hence the very majority of the people are the follower of Islam religion. Accordingly 70% of the total population is reported to be the follower of Islam religion, which is followed by Orthodox and Protestant followers constituting 15% and 14% of the total population respectively

#### **8.4.2.4 Settlement and Land use Pattern**

The population settlement pattern in the rural areas of the Woreda is observed to be dispersing as influenced by topography, agro-climate and water resource. The settlement is dominated by village form settlement that is formed mainly by extended family.

Regarding the land use pattern as per Woreda agriculture and development office data the large size of the land that is estimated to be 16728 ha /74.8%/ is under cultivation and this is followed by grazing land that covers about 2629 ha /11.6%/.

The majority of the farmers are reported to have 0.5 ha. and in this range there are about 1739 household heads and there are also about 1829 households who have more than 2ha. Beyond this there are also about 1558 households having no land in the Woreda however they reside in the rural areas showing the land scarcity.

#### **8.4.2.5 Economic Aspect**

Agriculture is the dominant economic activity of the Woreda in the rural areas in particularly. It is basic for livelihood and main source of income. The agriculture sector is predominated by rain fed crop production. Livestock rearing is the second most important economic activity in the Woreda where cattle, goat, sheep and equine rearing is common.

Farmers in the Woreda undertake their agricultural activities in its traditional form except some who use modern input such as fertilized and selected seeds to increase their crop production.

In farming activity it is very common to use human and animal labour. Ploughing is carried out by two oxen that is usually managed by men. However the household head takes the highest responsibility, all the family members who reach the working age have the responsibility to contribute to their capacity including women even who have the highest responsibility at home.

## **A. Farming**

Due to the uni-modal type of rain in the Woreda there is only meher /autumn/ season crop production. Maize, Wheat, Teff, Barley and Sorghum are the dominant crops that grow in the Woreda.

The main target to produce the above-mentioned crops with some exception to Teff, is for household consumption. In fact the surplus product of all types is for nothing but market consumption.

## **B. Livestock**

Rearing livestock is the second most important agricultural activity in the Woreda amongst the majority of the farmers and hence in the Woreda there are numerous livestock as a resource by variety such as Cattle, Goat, Sheep, Horse, Mules, Donkey and Poultry.

For the Woreda population particularly who reside in rural areas rearing livestock has various values such as economic value, food value, and transportation. As economic value livestock will be sold when money is required and as a food value except equine the rest will be used as a source of food. The equine will serve as means of transportation for human and materials from place to place.

## **C. Irrigation farm practice**

According to information obtained from Woreda agriculture and rural development office except few cases there is not as such irrigation practice in the Woreda. However, the office mentioned that there is one river that is known as Weja that is potential resource for the practice mainly from August to December until it gets dry mainly starting early December.

### **8.4.2.6 Social Infrastructure**

#### **A. Water Supply**

In Mareko Woreda, according to obtained information from Woreda water resource office there are 64 water supply schemes of different types. This include deep well, shallow wells with hand pump and hand dug wells with hand pump. Hence with these facilities the Woreda water supply coverage for the year 1998 was reported to be 40.5%, which is assumed to at encouraging level.

Out of the total water supply schemes it is reported that 53 schemes were functional while the rest 11 schemes were not functional for different reasons including technical problem.

*Table 3 Water Supply Scheme by functional status in Mareko Woreda.*

Scheme Type	No of scheme	Functional Status			
		Functional	%	Non-functional	%
Deep Well/Motorized	9	5	55.6	4	44.4
Shallow well with hand pump	40	35	87.5	5	12.5
Hand dug well with hand pump	15	13	86.7	2	13.3
Total	64	53	82.8	11	17.2

Source: Woreda Water Resource Service.

Since the Woreda is located in the rift valley the problem of fluoride is very common almost in all Kebeles except few. Concerning maintenance particularly to undertake minor maintenance the office has technical capacity but budget is reported as a major constraint.

On other hand, as far as the management activity of the community on functional schemes is concerned it is informed that there is good management practice by the community and committee members. The reason for this is believed to be the sensitivity of water in the Woreda both for human and livestock consumption and the attention given by the community at large.

Communities who have no access to safe water supply depend on one river, 10 ponds and 500 traditional hand dug wells for human consumption and for their livestock. Indeed among the community who use the traditional sources of water for human consumption and cattle consumption, the problem of water particularly the distance and the shortage is very crucial affecting their development activities that is reflected in terms of poor health and poor economic status.

## **B. Health and Sanitation**

According to information obtained form the Woreda health office the Woreda health coverage is reported to be 54.8% for the year 1998.

In the Woreda there are different types of health institutions providing the health service for the Woreda communities both in urban and rural areas. Hence in the Woreda there is only 1 health center, 9 health posts, 4 private clinics and 1 private rural drug store. All the health posts are located in 9 rural Kebeles to give the first level health service for the needy person.

By health professional workers in the Woreda there are: 1 health assistant, 4 senior nurses and 6 junior nurses with government institutes. Along this at the community level there are also health volunteers who undertake promotion among their respective communities.

For the year 1998 Malaria is reported ranking the first among the ten top diseases. On this report intestinal parasites is reported to be at the fourth and third stage for males and females indicating the prevalence of water related problem in the Woreda respectively.

Regarding sanitation situation in the Woreda according to the health office information out of the total 13662 households 9472 have latrine where as 4190 have not any facility. In same development only six-health institutes are reported having latrine where as the rest 14 have not any. As far as waste pit is concerned it is reported that any of the health institutes have not waste pit except the health centre. The same is true for the households having no waste pit to dispose solid waste.

### **C. Education**

The education coverage of the Woreda is reported to be 78.6% and 14.8% for grade 1- 8 and secondary school respectively. According to obtained information from Woreda education office there were 21 first cycle schools, 2-second cycle and 1 high school. In all schools in 1998 budget year there were 13795 students and 165 teachers.

Particularly, the first cycle schools are distributed almost in all Kebeles being a good opportunity for rural children to get school at a near distance from home.

#### **8.4.2.7 Physical infrastructure**

##### **A. Electricity Supply**

In the Woreda it is only Koshe town that enjoy a 24-hour electric power supply from hydropower source. But apart from this the rest of the rural Kebeles have not the opportunity.

##### **B. Communication Service**

In Mareko Woreda there is one Telecommunication stations in Koshe town serving the surrounding communities. In same development 22 rural Kebeles have also the access of telephone service that enables the rural residents to communicate through telephone mainly for the market purpose.

Regarding postal service, in the Woreda there is only one post office agent that is found in Koshe town serving the surrounding community.

### **C. Road**

The Woreda is crossed by 30 km. gravel road that stretched from Ziway to Butajira. Apart from this there are numerous access roads connecting all Kebeles with the capital town of the Woreda Koshe town throughout the season.

#### **8.4.2.8 Survey Findings of koshe town and the surrounding**

##### **A. General**

The community who resides in the Koshe town and surrounding has a crucial problem of water supply mainly in terms of quantity because of the existing unbalanced water supply as to the demand that exerted because of population growth and improved tradition to keep personal hygiene and the like.

In the study area water supply is found to be a considerable issue for the newly developed institutions namely schools, health centre and religious institutions.

The town is the capital town of the Woreda and it is the seat of all the Woreda sector offices. For this reason among any other Kebeles in the Woreda the highest business interaction is carried out in the town.

Regarding the settlement pattern it is observed that nearly all the residents of the area reside closely together as the influence of the urban character settlement pattern. It is therefore believed that the area is convenient atmosphere as to develop the required infrastructure.

##### **B. The Surveyed Households Characteristic**

The number of the targeted households to be benefited from water development is reported to be 143. It is out of these households that 50 were selected by systematic random sampling method for the survey.

Among the households that were covered by the survey the males and females were 42 and 8 respectively. By age category the survey result shows that the majority of the households that constitute about 34% were reported for age group above 66, and this is followed by the age group of 26-35 that constitutes 18%.

The residents of the study area are heterogeneous by their ethnic group belonging to different ethnic groups. Accordingly the surveyed households belong to the Gurage, Mesekan, Amhara and Oromo, ethnic groups constituting 30%, 30%, 24 % and 16% respectively.

By religion affiliation the majority of the surveyed households reported to be the follower of Orthodox religion constituting 56%, and this is followed by the follower of Islam and protestant Christianity constituting 32% and 12%.

By marital status the survey output indicates that the majority of the surveyed household were married having the responsibility to administer their family with their spouse and this constitute about 84% of total surveyed households, where as the rest a few that constitute 12% were widow.

Regarding the educational level of the sampled household the survey indicates out of the total surveyed household about 22.9% are illiterate while the rest 18.8% and 58.3% are at the level of read & write and above 1<sup>st</sup> grade. In general this shows that the prevalence of good access to school and good awareness of education in the area among the community.

### **C. Economic Activity and Status**

The Koshe town and surrounding community depends on various economic activities, which are subsistence including agriculture, petty trading, selling labour and the like. In fact the majority of the surveyed households were farmers constituting 50%.

Since the majority of the surveyed households' occupation is farming the analyses part is supposed to be dealt with this. Hence, in the area agricultural activity is carried out in most cases in its traditional forms. The farmers usually use two oxen to plough land and the male household head and any active male member of the family manage this activity. Apart from this to undertake related activities with out sex difference every economically active person has the responsibility to involve and contribute labour to the level of its capacity. Because this fact, among the village community the women have also the responsibility to work in the field in addition to the chore at home.

#### **Farming**

The types of crops that grow in the village are influenced by agro ecology of the study area and for that matter the most dominantly produced crops are: Wheat, Teff and maize. Among the sampled house holds nearly all responded that they produce the above-mentioned crops.

In the Koshe town and surrounding area the crop yield that is obtained from crop farming was not that good and this is mainly attributed to the extent of modern inputs utilization for the activity at large.

With this regard the household survey indicates that the majority of the surveyed households that constitute about 51.1% usually use modern fertilizer to increase for their crop production.

As far as selected seeds utilization is concerned the survey result indicates that about 36.4% of the surveyed households use selected seeds where as the rest 63.6% don't use selected seeds. All the households who utilize selected seeds use only wheat seed.

To undertake the farm activity nearly all the sampled farmers have their own plot of land be it small or large in its size. On this base the survey result shows that the majority of the farmers that constitute about 61% hold 0.5 ha of land. The farmers who hold 0.25 ha comes next constituting 19.4%.

### **Rearing Livestock**

Most of the study area residents are engaged in livestock rearing activity as to subsidize their economy. The practice is not wide mainly because of the shortage of grazing land that prevails in the village. It is learned that among the surveyed household about 62.2% have livestock while 37.8% of the surveyed households do not have any.

Similar to the agricultural activity this activity is also carried out in the area in its traditional forms. There is no cattle cross breeding activity in the village to make the activity intensive having few number of selected breed of cattle.

The number of livestock that is owned by the surveyed households is reported to be small. This is true for the study area residents attributing to the shortage of grazing land in the area at large.

### **Irrigation Activity**

In koshe town and surrounding area there is no irrigation practice as such for there is no water source to undertake the activity. In this respect among the surveyed households almost all responded that they don't have irrigation farm. But only one person responded that he was undertaking the practice on small plot of land that is located far from home using the Weji River.

### **Household Income and Expense**

Depending on their occupation the major source of income for the study area community is reported to crop selling, trade profit, labour selling labour and salary for the civil servants. On this base, as to understand the average annual income the surveyed households were asked to report the amount that they obtain in the fiscal year. To this effect from the household survey result it has been realized that the majority of the surveyed households that constitute 26.8% obtain birr 501-1000 and this is followed by households who have obtained that more than birr 2500 constituting 26.1%.

Along this the households are also asked whether their annual average income is enough or not. To this response out of the surveyed households about 18% and 82% have responded saying that it is enough and not enough respectively. From this analysis in fact it is very simple to conclude that the residents of the village were not at the level of good economic condition. Among those who have responded the average annual income is not enough for their livelihood have a plan to improve their income by expanding their agricultural activity and involving in other activity that would enable them to generate additional income.

On other hand regarding the annual average expenditure the surveyed households have indicated that as there are common expenditure item including food, water, clothing, education, medical and the like.

#### **D. Residential Housing Units Type**

The residential housing units in the study area are both urban and rural type mainly constructed by locally available materials. Thus the housing units are classified into two types that are thatched roof type and corrugated iron sheet roof type. With this respect the housing unit type that dominantly exist in the study area are corrugated iron sheet roof. Out of the total surveyed households 6% have thatched roof where as 86% have corrugated iron sheet roof housing unit.

All the housing units have wall constructed of mud and wood and also have floor constructed of earth. The typical types of the housing units that are observed in the study area have rectangular shape sharing same wall with neighbors having one or more rooms with partition mainly for bed and cooking purpose.

Most of the households that were surveyed reported that they have separate kitchen for cooking purpose and this constitute about 67.3% and the rest that constitute 32.7% have not separate kitchen.

#### **E. Water Supply Aspects**

##### **Source of Water Supply**

The resident of Koshe town and surrounding area have an access to safe water supply but with different problem including water shortage on supply and long queue to get water at community water point. The system has also the problem of maintenance that results to the prolonged down time of the scheme.

Among the surveyed households the great majority of them reported that they depend on deep well source for domestic consumption unless the scheme cease its function as the result of different problems and such households constitute

82.6%. Where as the rest of the households that constitute 17.4% reported that they depend on river as their source for domestic consumption.

From whichever source it is the surveyed households have not an easy and convenient access to water supply in this study area. With this regard most of the surveyed households that constitute about 87.8% affirmed that the problem is most crucial. Where are as the rest that constitute about 12.2% responded that they do not have a problem with their existing water supply.

In reporting about the major problems that encountered the households' most of the surveyed households that constitute about 85.1% have mentioned that water shortage as a major problem. Apart from this the rest of the surveyed households mentioned that the distance problem as the major problem constituting 12.2%.

In considering these problems may cause some impacts on the residents the surveyed households were asked about what major impact they have confronted. In response to this most of the survey households mentioned that the followings as major problem.

- Health problem that is caused by water born disease.
- Long time wastage that could be devoted on economic activity.
- Individual conflict that causes body injury and
- High expense to get safe drinking water from vendors.

In the study area except during rainy season there is water shortage problem throughout the year for both human and livestock consumption, and according to the household survey some 34.9% of the households responded that they face the problem throughout the year while the rest 65.1% responded for dry season.

### **Time taken to fetch water**

Regarding the distance of the sources or the water point from home most of the sampled households that constitute about 28% responded that it takes them between 31-40 minutes for a single trip. On other hand there were also households who responded that it takes them less than ten minutes and between 21-30 minutes constituting 16% and 16% respectively.

### **Water quantity and quality**

Concerning the adequacy of water that is obtained from any sources the survey result shows that out of the total surveyed households about 92% responded that the water from well source is not adequate, where as the rest 8% responded that they get adequate water for their domestic consumption.

For households who usually use the deep well source for domestic consumption there is no water quality problem. To this effect among the surveyed households about 92% responded that they have satisfaction with the quality of water. However, contrary to this about 8% of the surveyed households responded that they are not satisfied with the quality of water. These households namely who have reported the quality problem indicated the turbidity as problem.

### **Water fetching responsibility and transportation**

As it is well known and common in many areas fetching water for domestic consumption in the study area is the responsibility of women and daughter. In this respect, among the surveyed households about 30.6% and 38.8% responded that fetching water is the responsibility of wife only and wife and children respectively. All this conditions shows that how the study area women suffer from this responsibility in addition to food preparation and child care any other activity to generate income for the family livelihood.

In the study area it is very common to see human and animal or both types of labour are used in transporting water from source point to home. The most important animal for this purpose is donkey. With this regard among the surveyed households about 80% responded that they utilize human labour of the family members to transport water from source to home. Further more some 20% responded that they use animal for this purpose.

### **Priority need and consumption rate**

In mentioning the priority need area of water, the entire surveyed households responded that their need is for drinking and have also labeled this at the first rank of any other purpose.

Concerning the consumption rate of the water mainly for major purpose that include for drinking, food preparation and hygiene most of the surveyed households that account 70% responded that their consumption rate reaches up to 80 liter per day at family level. When this converted to each of the family member it would be 10.14 liter which is below minimum standard that is 15 liter for rural resident.

### **Water payment practice and contribution for the development**

As far as payment for water is concerned except the three households who did not responded for this question all have reported that they have a good practice in paying for water that they supplied at public water supply point.

The payment is made on tariff base that is fixed by the water committee as to cover the operation and maintenance costs of the scheme. On this base it is

realized that the amount of payment varies from individuals to individuals depending on the container they use to fetch water. So that in response to the amount they pay the majority of the households that constitute about 45.7% reported that they pay 0.20 cents where as the rest that constitute 34.3% and 20% reported that they pay 0.20 cents and 0.10 cents respectively.

Mainly because of the reason that the prevalence of crucial problem of water shortage particularly for domestic consumption the study area community has a great need to have the development as to get relief from the problem that has affected their socio-economic life at large.

Towards this end it has been recognized that the community is found being ready for different commitment as to involve in the activity and realize the development. This has been proofed by the survey result. Accordingly among the surveyed households about 38.1%, 42.9%, and 19% have reported that to contribute money, labour, and all in combination respectively.

## **F. Health situation**

The health situation of the area residents is not that good but poor mainly because of malaria and water related or born diseases. In this respect the surveyed households were asked whether there was major health problem that confronted their family. In responding to this about half of the sampled households responded that they have confronted the problem.

Among those households the great majority that constitute about 66.7% reported as malaria was remained to be the problem that has affected their family health. This is also followed by Giardia which is reported by 23.8% of the concerned households.

Among the surveyed households those who have reported about the health problem were asked where the treatment service has been obtained. Towards this except one person all the rest that account about 93.8% responded that they obtained the service in modern health institutes that are located at a near distance mainly heath posts and heath center.

Regarding diarrhea occurrence within in one year period the majority of surveyed households that constitute about 72.9% responded that there was no case among their family where as about 27.1% have mentioned its occurrence among different groups of person among their family. In most cases the victims of the disease were children under five because of poor sanitation and unprotected water utilization.

## **G. Sanitation situation**

As far as the sanitation aspects of the study area is concerned, the surveyed households were asked whether they have or have not latrine for their family, and to this question about 85% of the households responded that they have latrine where as the rest 15% of the surveyed household have not latrine for their family. This is believed to be an indication of the prevalence of a good awareness about sanitation among the community.

In terms of utilization it is reported that mostly the adult men and women utilize latrine under regular condition with few exceptional cases. On other hand regarding children it is reported that there is no similar trend for different reason mainly fear of risk assuming that children may fall down in to the latrine.

With regard to the type of latrines that have been constructed by the surveyed households were dominantly traditional pit latrine and this type of latrine reported for about 79.5% of surveyed households, this is followed by improved pit latrine and ventilated improved latrine which is reported by about 13.6% and 4.5% of the households respectively.

However the motivation and practical involvement of latrine construction that exists in the study area is encouraging one and the emphasis given to the standard issue is not that satisfactory. To this effect during the survey some of the latrines were observed having no roof, no shelter and sanplate.

Beside this, it has been tried to identify why a few households did not construct latrine for their family. In response to this, among the surveyed households those who don't have latrine mentioned that economic and skill problems as major problems.

Because of the absence of latrine these households and their family uses different areas for defecation. On this base the common defecation area for these households include back yard, bush and farm fields. As the result of the survey out of the total households that don't have latrine about 50% 25% and 25% responded to use back yard, bush and farm fields respectively.

From the survey, it is also learned that there is no cultural and traditional objection to have and utilize latrine among the village community. To this end all the household who don't have latrine during the study period agree to have latrine for their family.

During the survey while interviewing the households at their home the sanitation conditions of the residential houses' of the inside and outside parts have been over viewed. To this end as the survey finding indicates most of the housing units that are observed during the survey were found having clean sanitation of their inside part. This is estimated to constitute about 64.4 percent.

With relation to environmental sanitation the surveyed households are asked where they dispose waste that will be generated inside and outside home. On this base out of the total surveyed households 43%, 43.2% and 6.8% and 6.8% responded that they dispose at the back yard, in farm land, in front of home/compound and communal disposal place respectively.

## **H. Improved Hygiene practice**

Regarding improved hygiene practice among sampled households by taking different parameters particularly for critical time, nearly all the households responded that adult men and women practice hand washing under regular condition at critical period where as for children it is reported to be seldom. The prevalence of the regular practice is attributed to the urban traditional character that influences the residents.

Along this concerning the frequency of bathing practice the majority of the households that constitute about 59.2% reported that their family members would take bathing every week and this is followed by the households who have reported that their family members take every two weeks and every month constituting about 14.3% and 26.5% respectively.

In the same way regarding family cloth washing practice the majority of the households that constitute 60.9% reported that they usually undertake every week while the remaining households that constitute 19.6% and 19.6% reported that it is carried out every two weeks and every month respectively.

### **8.4.2.9 Survey findings of Kunokeretefa**

#### **A. General**

Kunokeretefa village is located in Kunokeretefa Kebele on the Southwest direction of Koshe (the Woreda capital) at a distance of 30 kms. It is accessible by paved way from Enseno town that is located along Ziway \_Butajira road at a distance of 4 kms.

The number of the village population is estimated to be 1449 and having 210 household heads who are considered as a direct beneficiary of the proposed development project.

The settlement Pattern of the community is characterized by small village settlement, which is established by the group interest. The community settlement pattern in the village is observed to be convenient to develop some basic infrastructure easily.

The village community has not safe water supply in the vicinity and for this reason in most cases uses traditional hand dug well on individual and group level. Apart from this some of the village households use safe water supply from hand dug source that is located at distance from home.

In the village there is one elementary school that gives the service for the village community and Kebeles communities at large. On other hand in the village or Kebele there is no health post however the construction of house for the service is completed. But there is an assumption that the service will commence soon following the fulfilment of the necessary equipment.

Like any other rural community the village community has not the basic infrastructures such as electric power, telephone and postal service. Due to this, the community obtain the service particularly telephone service at the nearby urban Kebele Inseno.

In addition to this the village community has not also market place and grind mill in the village and for this reason the community is supposed to look for the service in nearby Kebele.

## **B. The Surveyed Households Characteristic**

The number of the household assumed to be the beneficiary of water development project is estimated to be 210. It is out of these households that 20 were selected by systematic random sampling method for the survey.

Among the households that are covered by the survey, the males were 18 constituting 90% and females were 2 constituting 10%. By age distribution the majority of the sampled household was found in the age group of 26-35 constituting 40%, and this is followed by the households who were found in the age group of 36-45 and 46-55 constituting 30% and 15% respectively.

The residents of the study area are heterogeneous by their ethnic group belonging to different ethnic groups. Accordingly the surveyed households mainly belong to the Mareko and Kontoma ethnic groups constituting 14% and 15% respectively. Where are a few belongs to other ethnic groups.

By religion affiliation the great majority of the residents are reported to be the follower of Orthodox and protestant Christian religion. With this regard the survey result shows that among the surveyed households the follower of Orthodox and Protestant Christian religions constitute 40% for each. Next comes the follower of Islam religion constituting about 20%.

By marital status the survey output indicates that the majority of the surveyed households are married having the responsibility to administer their family with their spouse and this constitute about 85% of total surveyed households, where as the rest that constitute 15% are reported to be widow.

Regarding the educational level of the interviewed households the survey output indicates that about 25% were illiterate where as the rest reported for the level of read and write and 1<sup>st</sup> grade and above constituting 15% and 60% of the total surveyed households respectively.

### **C. Economic Activity and Status**

The economy activity of the Kunokeretefa village community is agriculture, which is the mixed one. The survey out put indicates that almost all the surveyed households that constitute about 90% are farmers cultivating crops and rearing livestock for their family livelihood.

Apparently among all the households in the village agricultural activity is carried out in most cases in its traditional forms. Hence the farmers usually use two oxen to plough land and the male household head and any active male member of the family manage this activity. Apart from this to undertake related activities with out sex difference every economically active person has the responsibility to involve and contribute labour to the level of its capacity. Because this fact among the village community the women have also the responsibility to work in the field in addition to the chore at home.

#### **Farming**

The types of crop that grow in the village are influenced by agro ecology of the study area and for that matter the most dominantly produced crops are sorghum, wheat, maize, and teff. Apart from this most of the entire farmers cultivate red pepper as a major cash source.

In the Kunokeretefa village the crop yield that is obtained from crop farming is not that satisfactory and this is mainly attributed to the extent of modern inputs that is utilized for the activity at large. To this effect it is analyzed that among the sampled households no one have used modern fertilizer but instead of that it is reported about 31.6% have used traditional fertilizer while the rest 68.4% never use any type of fertilizer.

As far as selected seeds utilization is concerned the survey result indicates that among the surveyed households only one person has used that selected seeds where as the rest that constitute about 94.7% did not use selected seeds.

For this activity nearly all the surveyed households have reported that they have their own plot of land be it small or large in its size. Thus among the surveyed household about 95% have reported that they have their plot of land. In this connection regarding the holding size among surveyed households about 45% reported for 0.25 ha. This is followed by household heads who have reported for holding size of 0.5 ha.

## **Rearing Livestock**

Most of the village residents are engaged in livestock rearing activity as to subsidize their economy. The practice is not wide mainly because of the shortage of grazing land that prevails in the village. It is learned that among the surveyed household about 55% have livestock while 45% of the surveyed households do not have any.

Similar to the agricultural activity this activity is also carried out in the village in its traditional forms. So that there is not cattle cross breeding activity in the village to make the activity intensive having few number of selected breed of cattle.

## **Irrigation activity**

In Kunokeretefa village there is irrigation farm practice on small plot of land. The trend is developed mainly to prepare red pepper seedling that is the major requirement to cultivate the vegetable. In this respect some of the surveyed households that constitute about 30% reported that they have irrigation farm so as to prepare red pepper seedling.

The activity is carried out in its traditional forms for all these households. In the village the source of water to undertake the activity is nothing but traditional hand dug wells that are found around the homestead.

## **Household Income and Expense**

Since most of the village residents are farmers by their occupation and the major income sources is nothing but crop selling and livestock selling. Due to this the major income sources of the surveyed household is found to be crop and red pepper selling.

To get information about the average annual income of the surveyed households, they were asked to tell their annual average income particularly for the fiscal year, and to this reply most of the surveyed households that constitute 31.6% reported that their annual income falls in the range of birr 501- 1000, next to this some 26.3% of the surveyed households reported that their annual income range was 100- 500 for the fiscal year.

Along this the households are also asked whether their annual average income is enough or not. To this response out of the surveyed household that account 95% and 5% have responded saying that it is not enough and it is enough respectively. From this analysis in fact it is very simple to conclude that the residents of the village are not at the level of good economic condition.

Among those who have responded the average annual income is not enough for their livelihood, have also responded that they have a plan to improve their income by expanding their agricultural activity and involving in other activity that would enable them to generate additional income.

On other hand regarding the annual average expenditure the surveyed households have indicated as there are common expenditure item including food, water, clothing, education, medical and the like. The entire households responded that their major annual expenditure is for food items and clothing and water.

#### **D. Residential Housing Unit type**

The residential housing units in the village are typical of the rural type mainly constructed by locally available materials. Thus the housing units are classified into two types that are thatched roof type and corrugated iron sheet roof type. With this respect the housing unit type that dominantly exist in the village are thatched roof with different size namely from small to the largest one. About 78.9% of surveyed household have thatched roof-housing unit where as two households and one household reported to have both type and corrugated iron sheet roof type housing units respectively.

All the housing units have wall constructed of mud and wood and also have floor constructed of earth. The typical type of the housing units that is thatched roof ones have circular shape with out separate room for different purpose but in side the house there is partition structure by wood for bed, cooking and domestic animals to pass the night time with family members under same roof.

Nearly all households in the village have not separate kitchen for cooking in the village. Hence, to this end among surveyed households about 90% responded that they have not separate kitchen where as only 10% responded have separate kitchen.

#### **E. Water Supply Aspects**

##### **Source of Water Supply**

The major sources of the water for the village community are hand dug well with hand pump (at a far distance) and traditional hand dug wells. On this base among the sampled households 61.1% reopened that they get water for household consumption from shallow well and the rest 38.9% responded that they get from traditional hand dug wells.

With regard to the water supply problem some of the surveyed households that account about 50% responded in affirming the prevalence of the problem. On the

other hand the rest half of the surveyed households responded that, as there is water supply problem for their domestic consumption.

Households those who have responded that they have the water supply problem were also asked to specify the problem and in this respect about 46.7% of them responded that their major problem is distance problem, which they feel as far away from home. The rest that constitute about 26.7% reported shortage problem and similarly households that constitute same proportion reported that they have safeness problem.

Those who responded the shortage problem were asked about the period of the problem and to this end about 60% of the respondent reported that they face the problem throughout the year.

In considering the impact of the problems on socio economic life of the family the surveyed households were asked about what major impact they have confronted. In response to this question most of the survey households mentioned the followings as major problem.

- Health problem that is caused by water born disease and
- Long time wastage that could be devoted on other economic activity.

In the village the need of water for livestock is realized to be minor since the number of livestock that is owned by households is less in number and get water from river. It is on this premise that among the surveyed households all responded that they get water for their livestock under less difficult circumstance.

### **Time taken to fetch water**

Since there is no water supply scheme in the village it is apparent that fetching water for most the households is time taking. Thus such households are supposed to walk about an hour to reach the source for a single trip. On this base it is analyzed that about 40% of the surveyed household are supposed to walk about less than ten minuets, which is followed by households who travel 21-30 minutes constituting about 35%. All these show as the majority of the sampled households' family members don't walk that far in its relative terms when compared to other rural areas.

### **Water quantity and quality**

Concerning the adequacy of water that is obtained form any source the survey result shows that about 60% of the sampled household responded that they have no adequate water for their domestic consumption, where as the rest 35% responded that they have adequate water.

Regarding the water quality, households who use the improved hand dug well source for domestic consumption reported that they have faced a problem of quality in terms of turbidity. To this contrary about 65% of the respondents responded that they have not problem with the quality of water.

### **Water fetching responsibility and transportation**

As it is well known and common in many areas fetching water for domestic consumption in the study area is the responsibility of women and daughter. In this respect, among the surveyed households about 45% and 35% responded that fetching water is the responsibility of wife only and wife and husband respectively. All this conditions shows that how the study area women suffer from this responsibility in addition to food preparation and child care any other activity to generate income for the family livelihood.

In the study area it is very common to see human and animal or both types of labour while utilized in transporting water from source point to home. The most important animal for this purpose is donkey. With this regard among the surveyed households about 95% responded that they utilize human labour of the family members to transport water from source to home. Further more some 5% responded that they use animal for this purpose.

### **Priority need and consumption rate**

In mentioning the priority need area of water, the entire surveyed households responded that their need is for drinking and have also labeled this at the first rank of any other purpose.

Concerning the consumption rate of the water mainly for major purpose including for drinking, food preparation and hygiene, most of the surveyed households that account 25% responded that they consume more 31- 40 liter per day at family level. In same development about 25% of the respondents responded that their consumption rate reaches up to 80 liter per day. As the total effect the average consumption of the households is calculated to be 49 liter and when this is converted to each of the family member it would be 7 liter which is significantly below the minimum standard of the country that is 15 liter for rural resident.

### **Water payment practice and contribution for the development**

As far as payment for water is concerned about 95% of the surveyed households responded that they pay for water. To this contrary only one person is found responding that he doesn't pay for water.

The survey result indicates that both types of payment that is tariff and flat rate payments for water is practiced by the village community. Due to this fact the

maximum payment on the tariff rate is reported to be 0.20 cents per jerrycan where as on the flat rate base the maximum payment is reported to be Birr 12.00 per year.

Mainly for the reason that there is no water supply access in the village the community felt need for water supply development is found some great and due to this case the motivation to community towards water supply development is mentioned by focus group discussion and on conducted interview by sampled households. Hence, regarding the households commitment the entire households assured to participate in the development activity by contributing to the level of their capacity. To this end among the surveyed households about 33.3%, and 66.7% have mentioned to contribute money and labour, respectively.

#### **F. Health situation**

The health situation of the village residents is not that good but poor mainly because of malaria and water related or born diseases. In this respect the surveyed households were asked whether there was major health problem that confronted the family. In responding to this half of the sampled households responded that they have confronted the problem.

Among those households the great majority that constitute about 63.6% reported as malaria was remained to be the problem that has affected their family health. This is also followed by TB which is reported by 36.4% of the concerned households.

The surveyed households those who have reported about the health problem were asked where the treatment service has been obtained. In this case half of the respondents reported that they have got the treatment at modern institutes mainly health post and health centre that are located in Enseno kebele and Butajira town. Where as the rest have reported that they got the treatment by visiting local healers.

Regarding diarrhea occurrence within in one year period the majority of surveyed households that constitute about 85% responded that there was no case among their family where as about 15% have mentioned its occurrence among different groups of person among their family. In most cases the victims of the disease were children under five because of poor sanitation and unprotected water utilization.

#### **G. Sanitation situation**

The sanitation aspects of the village community is concerned the surveyed households have been asked whether they have or have not latrine for their family, to this response about 70% of the households responded that they have latrine where as the rest 25% of the surveyed households have not latrine for their family. This indicates that as there is good awareness of sanitation by the

village community as effect of good promotion activity that have been carried out in the area.

In terms of utilization it is reported that mostly the adult men and women utilize latrine under regular condition with few exceptional cases. On other hand regarding children it is reported that there is no similar trend for different reason mainly fear of risk assuming that children may fall down in to the latrine.

With regard to the type of latrines that have been constructed by the surveyed households are dominantly traditional pit latrines that are constructed purely using local available material.

However the motivation and practical involvement of latrine construction that exists in the study area is encouraging one, the emphasis given to the standard issue is not that satisfactory. To this effect during the survey some of the latrines were observed having no roof, no shelter and sanplate.

Beside this, it has been tried to identify why some households did not construct latrine for their family. In response to this, among the surveyed households those who don't have latrine mentioned that economic and skill problems as major problems.

With this connection these households were asked about the place were their family use for defection. In this response they have mentioned that they use back yard.

From the survey, it is also learned that there is no cultural and traditional objection to have and utilize latrine among the village community. To this end all the household who don't have latrine during the study period agree to have latrine for their family.

During the survey while interviewing the households at their home the sanitation conditions of the residential houses' of the inside and outside parts have been over viewed. To this end as the survey finding indicates most of the housing units that are observed during the survey were found being not clean of their inside part and this account for 60% of the surveyed households. This is mainly attributed to animals that pass the nighttime with family members and lower living standard of households at large.

With relation to environmental sanitation the surveyed households are asked where they dispose waste that will be generated inside and outside home. On this base as it is shown in the table 149 below out of the total surveyed households 45%, 40%, and 15% responded that they dispose at the back yard, in front of home, and communal disposal place respectively.

## **H. Improved Hygiene practice**

Regarding improved hygiene practice among sampled households by taking different parameters particularly for critical time, nearly all the households responded that adult men and women practice hand washing under regular condition at critical period where as for children it is reported to be seldom practice.

Along this concerning the frequency of bathing practice the majority of the households that constitute about 75% reported that their family members would take bathing every week and this is followed by the households who have reported that their family members take every two weeks and every month constituting about 15% and 10% respectively.

In the same way regarding family cloth washing practice the majority of the households that constitute 50% reported that they usually undertake every week while the remaining households that constitute 35% and 15% reported that it is carried out every two weeks and every month respectively.

#### **8.4.3 Meskan Woreda**

##### **9.4.3.1 General**

Meskan Woreda is located in South Nation Nationalities and Peoples regional state of Gurage zone. The Woreda is bounded on the east by Mareko Woreda, on South by Sodo Woreda, on Sest by Ezja and Kokire Woredas and on North by Seleti Woreda. For administration purpose the Woreda is structured by 5 urban Kebeles and 40 rural Kebeles and the total area of the Mesekan Woreda is estimated to be 511.8 Sq km.

The Woreda capital town is Butajira, which is located at a distance of 130 km, 153 km and 265 km from Addis Ababa the capital city of the country, regional capital Awassa and zonal capital Welekite respectively.

The Woreda agro climatic zone is situated in warm temperate rainy /Dega/ and tropical rainy /Weynadega/ climatic zone constituting about 18% and 82% respectively. By elevation the Woreda is situated between 1820 and 3500 meters above sea level. The Woreda has also the annual rainfall that falls in the range of 1400 - 900 mm.

##### **8.4.3.2 Population**

According to information obtained from Woreda administration office, the Woreda total population for the year 1998 was estimated to be 184431. Out of this the males were 92159 constituting 49.9%, while the females were 92272 constituting 50.1%. In the same year the number of the household for the Woreda is

estimated to be 38491. To this effect the average family size of the Woreda is estimated to be 4.8.

Religious Affiliation

#### ***8.4.3.3 Religious affiliation***

According to information obtained from Woreda administration office the Woreda population follows different religions and hence the very majority of the people are the follower of Islam religion. Accordingly, 70% of the total population is reported to be the follower of Islam, which is followed by Orthodox and Protestant Christianity followers constituting 25% and 4.5% of the total population respectively.

#### ***8.4.3.4 Settlement and Land use Pattern***

The population settlement pattern in the rural areas of the Woreda is observed to be uneven as influenced by topography, agro-climate and water resource. The settlement is dominated by village form settlement that is formed mainly by extended family.

Regarding the land use pattern as per Woreda agriculture and development office data most of the land that is estimated to be 57.8% is cultivated land and this is followed by land covered by forest that constitutes 11.5 percent.

As per obtained information there are about 4867 households owing less than 0.5 ha and 1954 households owing more than 2 ha. constituting 8.03 percent of the total households. Where as the majority of the household holds 1-2 ha. and this constitute 47.43 percent. Beyond this there are also about 2320 households having no land in the Woreda however they reside in the rural areas. Simply this illustrates the existence of land scarcity in the Woreda for farm activity at large.

#### ***8.4.3.5 Economic Activity***

Agriculture is the dominant economic activity of the Woreda in the rural areas in particular. It is basic for livelihood and main source of income. The agriculture sector is predominated by rain fed crop production. Livestock rearing is the second most important economic activity in the Woreda where cattle, goat, sheep and equine rearing is common.

Farmers in the Woreda undertake their agricultural activities in its traditional form except some who use modern input such as fertilizer and selected seeds to increase their crop production.

In farm activity it is very common to use human and animal labour. Ploughing is carried out by two oxen that is usually managed by men. However the household head takes the highest responsibility, all the family members who reach the working age have the responsibility to contribute to their capacity including women even who have the highest responsibility at home.

### **A. Crop Production**

Due to the uni-modal type of rain in the Woreda there is only meher /autumn/ season crop production. Depending on this factor the major crops that grow in the Woreda includes Maize, Wheat, Teff, Barley and Sorghum.

### **B. Livestock**

Rearing livestock is the second most important agricultural activity in the Woreda among the majority of the farmers and hence in the Woreda there are numerous livestock as a resource by variety such as Cattle, Goat, Sheep, Horse, Mules, Donkey and Poultry.

For the Woreda population particularly who reside in rural areas rearing livestock has various values such as economic value, food value, and transportation. As economic value livestock will be sold when money is required and food value except equine the rest will be used as a source of food. The equine will serve as means of transportation for human and materials.

### **C. Irrigation farm practice**

According to information obtained from Woreda agriculture and rural development office both modern and traditional irrigations activity is practiced in the Woreda at a very low level when it is evaluated against the water resources that exist in the Woreda.

To this end it is only about 60 ha and 440 ha. of land that has been cultivated under modern and traditional irrigation respectively. The sources of water for the existing irrigation activity are Iresha, Irizaf, Assde, Ufero and Jirbenes rivers. As the total effect there are about 4397 households who are benefiting from irrigation farm cultivating mainly tomato, cabbage potato, onion and the like.

#### **8.4.3.6 Social services**

##### **A. Water Supply**

In Meskan Woreda, according to information obtained from Woreda water resource office, there are 173 water supply schemes of different types. This include deep well, shallow well with hand pump, hand dug well with hand pump, spring with distribution line and on spot developed springs. With these facilities

the Woreda water supply coverage for the year 1998 was reported to be 37 percent.

Out of the total water supply schemes it is reported that 155 schemes were functional while only 18 schemes were not functional for different reasons including technical problem. This indicates the existence of good management system among the water supply schemes.

*Table 4 Water Supply Scheme by functional status in Meskan Woreda.*

Scheme Type	No of scheme	Functional Status			
		Functional	%	Non-functional	%
Deep Well/Motorized	6	3	50	3	50
Shallow well with hand pump	60	55	91.7	5	7.3
Hand dug well with hand pump	85	75	88.2	10	21.8
Spring with distribution	3	3	100	-	-
Spring Development /on spot/	19	19	100	-	-
<b>Total</b>	<b>173</b>	<b>155</b>	<b>89.6</b>	<b>18</b>	<b>10.4</b>

Source: Woreda Water Resource office and Woreda finance and Economic development office

Regarding the water quality test the zone experts have undertook the quality test for 35 water supply schemes but similar and the required test is not carried out for most of the water supply schemes.

Concerning maintenance particularly to undertake minor maintenance the office has the technical capacity but budget and transportation is reported to be a major constraint.

On other hand, as far as the management activity of the community on functional schemes is concerned it is informed that there is good management practice by the community and water committee members. Along this, it is also reported some of the schemes have trained caretakers and hence there are about 120 care takers currently working effectively on their respective water supply schemes.

It is believed that the prevalence of good management system and caretakers in many of water supply schemes have contributed to the sustainable condition of the schemes as it seen from the view point of functional status that is reported above.

## **B. Health and Sanitation**

According to information obtained from the Woreda health office the Woreda health coverage is reported to be 56.2% for the year 1998.

In the Woreda there are different types of health institutions providing the health service for the Woreda communities both in urban and rural areas. On this base in the Woreda there is 1 hospital, 3 health centers, 12 health posts, 4 private clinics and 6 private rural drug stores. All the health posts are suited in 12 rural Kebeles to give the first level health service for the needy person.

By health professional workers in the Woreda there are 2 medical doctors, 14 senior nurses, and 7 junior nurses with government and NGOs' institutes. There are also 26 front line health workers who are giving the service at community grass root level. Along this at the community level there are also health volunteers who undertake promotion among their respective communities.

For the year 1998 Malaria is reported to be the first level disease among the ten top diseases. On this report intestinal parasite is reported to be at the fourth stage indicating the prevalence of water related problem in the Woreda.

Regarding sanitation situation in the Woreda according to the health office information out of the total 41430 households 30664 have latrine where as 10774 have not any. This makes in general the Woreda latrine access to be 74 percent. On other hand all health institutes are reported having latrine and waste pits. As far as waste pit for the household is concerned it is reported that there is no household who has that facility.

## **C. Education**

The education coverage of the Woreda is reported to be 93.3%. According to obtained information from Woreda education office there are 27 first cycle schools, 21 2<sup>nd</sup> cycle and 1 high school. In all schools in 1998 budget year there were 32,675 students and 338 teachers.

Particularly, the first cycle schools are distributed almost in all Kebeles except for a few Kebeles being a good opportunity for rural children to get school at a near distance from home.

### **8.4.3.7 Physical infrastructure**

#### **A. Electricity Supply**

In the Woreda only three Kebeles have a 24-hour electric power supply with hydropower source where as thirty-eight Kebeles have not electricity.

## **B. Communication Service**

In Meseke Woreda there are two Telecommunication stations in urban Kebeles serving the surrounding communities. In addition to this 23 rural Kebeles have got the service which is very encouraging one enabling the rural communities to have an easy access to communicate with telephone mainly for the market purpose.

Regarding postal service, in the Woreda there are two post offices located in Butajira and Enseno towns.

## **C. Road**

The Woreda is crossed by 17 km. asphalt road that stretched from Addis Ababa to Hosaena. Within the Woreda there is 95.5 kms gravel roads that connect different Kebeles and neighbour Woredas. In addition to this there are also all weather roads that cover about 149 km connecting different Kebeles and the capital town butajira.

### **8.4.3.8 Survey Findings of Kechebere**

#### **A. General**

The Kechaber village is located at a distance of 10 km West of Butajira town. The total population village that is expected to be the beneficiary of the proposed project is estimated to be 1826 by considering the number of the household heads that is reported to be 265 and the average family size of the Woreda that is 6.9 persons.

The settlement pattern of the community is characterized by big village settlement, and small village pattern that is believed to be convenient for the development of basic infrastructure. The villages are formed based on the group interest and individuals wish that is mainly bonded also by the blood relationship.

In the village there is no even elementary school and health post but the community gets such services from the centres that are located in the Kebele. Like any other rural community the village community has not the basic infrastructures such as electric power, telephone and postal service. Due to this, the community obtain the service particularly telephone service at the nearby town Butajira. In addition to this the village community has not also market place and grind mill in the village and for this reason the community is supposed to look for the service in nearby Kebele.

Similar to other infrastructure there is no also developed water supply system in the village except unprotected private and communal traditional hand dug wells. Since the ground water level is relatively shallow compared to other project

areas, the people of the village dug traditional wells to satisfy their water demand.

### **B. The Surveyed Households Characteristic**

The number of the household assumed to be the beneficiary of water development activity is estimated to be 265. It is out of these households that 20 were selected by systematic random sampling method for the survey.

Among the households that are covered by the survey, the males were 16 that constitute 80% and females were 4 constituting 20%. By age category the majority of the sampled household was found in the age group of 26-35 constituting 45 percent and this is followed by the households who are found in the age group of 46 -55 and 36-45 constituting 30% and 25% respectively.

By ethnic group nearly the entire village community belongs to Gurage ethnic group with a very few mix to other ethnic group. On this base among the surveyed households about 90% is reported to belong to Gurage ethnic where as the rest 5% belong to Oromo ethnic group.

By religion affiliation the entire sampled households are found to be the follower of Islam religion. This could in tell that nearly all the residents of the community are Muslim being the follower of Islam religion.

By marital status the survey output indicates that the majority of the surveyed households are married having the responsibility to administer their family with their spouse and this constitute about 80% of total surveyed households, where as the rest few that constitute 20% are widow.

Regarding the educational level of the interviewed households the survey output indicates that about 45% were illiterate where as the rest were reported for the level of read and write and 1<sup>st</sup> grade and above constituting 25% and 30% of the surveyed households respectively.

### **C. Economic Activity and Status**

The economy activity of the Kechebere village community is agriculture, which is the mixed one that is farming and livestock rearing. On this base, the survey output indicates that nearly all the surveyed households that constitute about 95% are farmers cultivating crops and rearing livestock for their family livelihood except one sampled household who has responded for farm and trade activity.

Apparently among all the households in the village agricultural activity is carried out in most cases in its traditional forms. Hence the farmers usually use two oxen to plough land and the male household head and any active male member of the family manage this activity. Apart from this to undertake related activities with out sex difference every economically active person has the responsibility to involve

and contribute labour to the level of its capacity. Because this fact among the village community the women have also the responsibility to work in the field in addition to the chore at home.

## **Farming**

The types of crop that grow in the village are influenced by agro ecology of the study area and because of this factor the most dominantly produced crops in the village includes Teff, and Maize and mixed crops. In this respect the survey result indicates that about 68.4% of surveyed households have cultivated mixed crops and the rest about 21.1% have cultivated maize dominantly than any other crop.

As regard to utilization of fertilizer for farm activity the survey indicates that the majority of the surveyed households that constitute about 70% reported to use modern fertilizer. Where as the rest of the households those constitute 15% and 15% reported to use traditional fertilizer and never to use any type of fertilizer respectively.

As far as selected seeds utilization is concerned the survey result indicates that about 33.3% of the surveyed households use selected seeds where as the rest 66.7% don't use selected seeds.

In the village households who are engaged in farm activity have their own plot of land be it large or small. On this base surveyed households were asked whether they have plot of land or not including the size. To this response except one household the rest that account 95% reported that they have their own plot of land for their activity.

Similarly in response to the holding size among the surveyed households about 47.4% reported that they have more than two hectares. This is followed by households who own 1 ha. constituting 26.3% of the total surveyed households.

## **Rearing Livestock**

Most of the village residents are engaged in livestock rearing activity as to subsidize their economy. The practice is not wide mainly because of the shortage of grazing land that prevails in the village. It is learned that among the surveyed household about 80% have livestock while only 20% do not have any.

Similar to the agricultural activity this activity is also carried out in the village in its traditional forms. So that there is no cattle cross breeding activity in the village to make the activity intensive having few number of selected breed of cattle for increased product.

## **Irrigation activity**

In Kechebere village some household have a good awareness about irrigation. So that among the surveyed households some 27.8% have reported that they are practicing the activity using spring water in most cases to cultivating vegetables on small plot of land. Where as the rest of the households responded that they don't practice the activity.

### **Household Income and Expense**

Since most of the village residents are farmers by their occupation the major income sources is nothing but income from crops selling and livestock selling. To this effect it has been learned that the major income sources of the surveyed household is found to be crop and vegetables.

To get information about the average annual income of the surveyed households, they were asked to tell their annual average income particularly for the fiscal year, and to this reply most of the surveyed households that constitute 31.6% reported that their annual income was in the range of birr 100 - 501, next to this some 26.3% of the surveyed households reported that their annual income was in the range of birr. 501-1000 for the fiscal year.

Along this the households are also asked whether their annual average income is enough or not. To this response the entire households responded that the income that they obtain is not enough for their livelihood. Among those who have responded the average annual income is not enough for their livelihood, most of them mentioned that they have a plan to improve their income by expanding their agricultural activity and involving in other activity that would enable them to generate additional income.

On other hand regarding the annual average expenditure the surveyed households have indicated that their main expenditure items including food, water clothing, education, medical and the like.

### **D. Residential Housing Units type**

The residential housing units in the village are typical of the rural type mainly constructed by locally available materials. Thus the housing units are classified into two types that are thatched roof type and corrugated iron sheet roof type. With this respect the housing unit type that dominantly exist in the village are thatched roof with different size namely from small to the largest one. About 60% of surveyed household have thatched roof-housing unit, where as 25% of the surveyed households have housing units that have corrugated iron sheet roof.

All the housing units have wall constructed of mud and wood and also have floor constructed of earth. The typical type of the housing units that is thatched roof ones have circular shape with out separate room for different purpose but in side the house there is partition structure by wood for bed, cooking and domestic animals for the night time purpose.

Nearly all households in the village have not separate kitchen for cooking in the village. Hence, to this end among surveyed households about 75% responded that have not separate kitchen where as only 25% responded have separate kitchen.

## **E. Water Supply Aspects**

### **Source of Water Supply**

The major source of the water for the village community include shallow well, hand dug well with hand pump, traditional hand dug wells and rivers that are located at a far distance from home. To this fact, among the sampled households the majority that constitutes about 45% responded that they get water for household consumption from traditional hand dug wells. In the same development households that constitute about 45% reported that they get water for domestic consumption from protected wells.

With regard to the water supply problem some of the surveyed households that account 61.1% responded in affirming the prevalence of the problem where as the rest of the households that constitute 38.9% reported that they have not water supply problem as such.

Households those who have responded that they have the water supply problem were also asked to specify the problem and in this respect about 53.8% of them responded that their major problem is shortage. The rest of the households that constitute about 38.5% and 7.7% reported safeness and distance as the problem respectively.

Again those who responded the shortage problem were asked about the period of the problem and to this end the entire households reported that they mainly face the problem during the dry season.

In considering the problems that it would have various impacts on the residents the surveyed households were asked about what major impact they have confronted. In response to this most of the surveyed households mentioned that the followings being the major problem.

- Health problem that is caused by water born disease and
- Long time wastage that could be devoted on other economic activity.

Although it is not a burning issue for all residents it is understood that households who have livestock have a great demand of water for their livestock. To this effect the survey result indicates that for most of surveyed households obtaining water for livestock is not that easy but rather difficult and most of the households

reported that they get under difficult condition in terms of distance and some times shortage.

### **Time taken to fetch water**

Since there are numerous number of traditional hand dug wells for most households at a near distance from home the time that is consumed to fetch water is not that much. In this respect in responding to time taken to fetch water the majority of surveyed households that constitute about 64.7% reported that it takes them less than ten minutes. Also the remaining households reported that it takes them less than 50 minutes.

### **Water quantity and quality**

Concerning the adequacy of water that is obtained from any source the survey result shows that out of the total surveyed households about 50% responded that they have not problem with adequacy. In same development among the surveyed households that constitute about 50% reported that they have not adequate water supply for their household consumption.

With regard to the quality aspect about 65% of the households reported that they are not satisfied with quality of water that is obtained from main source. In this connection these households mentioned that turbidity as their major concern in terms of quality.

### **Water fetching responsibility and transportation**

As it is well known and common in many areas fetching water for domestic consumption in the study area is the responsibility of women and daughter. In this respect, among the surveyed households about 44.4% and 22.2% responded that fetching water is the responsibility of wife and children and wife only respectively. All this conditions shows that how the study area women suffer from the burden in addition to food preparation and child care any other activity to generate income for the family livelihood.

In the village it is very common to see human and animal or both types of labour to transport water from source point to home. With this regard among the surveyed households about 94.7% responded that they utilize human labour of the family members to transport water from source to home. Where as the rest 5.3% responded that they use animal for this purpose. The most important animal for this purpose is donkey.

### **Priority need and consumption rate**

In mentioning the priority need area of water, the entire surveyed households responded that their need is for drinking and have also labeled this at the first rank of any other purpose.

Concerning the consumption rate of the water mainly for major purpose including for drinking, food preparation and hygiene most of the surveyed households that account 25% responded that they consume more than 31- 40 liter per day at family level. In same development about 25% of the respondents responded that their consumption rate reaches up to 80 liter per day. As the total effect the average consumption of the households is calculated to be 57 liter and when this is converted to each of the family member it would be 8.3 liter which is below minimum standard of the country that is 15 liter for rural resident.

### **Water payment practice and contribution for the development**

As far as payment for water is concerned some 47.4% of surveyed households responded that they pay for water where as about 52.6% of the household responded that they don't pay for water.

Those households who practice payment for water were asked how they settle their payment and to this response the enter households reported that they pay on flat rate base. Along this they have also mentioned the amount that ranges between birr 0.5 –1.50 per month that is decided by the user community.

Mainly for the reason that there is no water supply access in the village the community felt need for water supply development is found some how great and due to this case the motivation of the community towards water supply development is mentioned by focus group discussion and on conducted interview by sampled households. Hence, regarding the households commitment the entire households assured to participate in the development activity by contributing to the level of their capacity. To this end among the surveyed households that constitute about 10.5%, 47.4% and 42.1% have mentioned to contribute money, labour and all in compound respectively.

### **F. Health situation**

The health situation of the village residents is not that good but poor mainly because of the occurrence of different diseases. As per the household survey result for the last one-year period most of the households reported that TB and kidney as the major diseases that have been confronted. In this respect out of the surveyed households about 50% has reported for TB case and next to this kidney case is reported by about 20 percent of the households.

The surveyed households those who have reported about the health problem were asked where the treatment service has been obtained. In this case about 87% of the respondents reported that they have obtained the treatment at modern institutes mainly health post and health centre that are located in Butajira

town, where as the rest that constitute about 12.5 reported that they have obtained the treatment by visiting local healers.

Regarding diarrhea occurrence within in one year period the majority of surveyed households that constitute about 60% responded that there was no case among their family where as about 40% have mentioned its occurrence among different groups of person among their family. In most cases the victims of the disease were children under five because of poor sanitation and unprotected water utilization.

### **G. Sanitation situation**

In relation to the sanitation aspects the surveyed households have been asked whether they have or have not latrine for their family, and to this response about 55% of the households responded that they have latrine access where as the rest 45% of the surveyed household have not latrine access for their family. This indicates that as there is good awareness of sanitation by the village community as the result of good promotional activity that has been carried out in the area.

In terms of utilization it is reported that mostly the adult men and women utilize latrine under regular condition with few exceptional cases. On other hand regarding children it is reported that there is no similar trend for different reason mainly fear of risk assuming that children may fall down in to the latrine.

With regard to the type of latrines that have been constructed by the surveyed households that dominantly observed were traditional pit latrines that are constructed purely using locally available material.

However the motivation and practical involvement of latrine construction that exists in the study area is encouraging one since the emphasis given to the standard issue is not that satisfactory. To this effect during the survey some of the latrines were observed having no roof, no shelter and sanplate.

Beside this, it has been also tried to identify why some households did not construct latrine for their family. In response to this, among the surveyed households those who don't have latrine mentioned that economic and skill problems as major problems.

With this connection these households were asked about place were their family use for defecation and in this response they have mentioned that they use different areas for defecation. On this base the household that constitute about 37.5%, 12.5% and 50% responded to use back yard, bush and farm fields respectively.

From the survey, it is also learned that there is no cultural and traditional objection to have and utilize latrine among the village community. To this end all

the household who don't have latrine during the study period agree to have latrine for their family.

During the survey while interviewing the households at their home the sanitation conditions of the residential houses' of the inside and outside parts have been observed. To this end as the survey finding indicates most of the housing units that are observed during the survey were found being clean of their inside part and this account for 55% of the surveyed households. Where are rest that constitute about 45% were found being not clean this is mainly attributed to animals that pass the nighttime with family members and lower living standard of households at large.

With relation to environmental sanitation the surveyed households are asked where they dispose waste that will be generated inside and outside home. On this base out of the total surveyed households 68% and 31% responded that they dispose at the back yard and in farmland respectively.

## **H. Improved Hygiene practice**

Regarding improved hygiene practice among sampled households by taking different parameters particularly for critical time, nearly all the households responded that adult men and women practice hand washing under regular condition at critical period where as for children it is reported to be seldom.

Along this concerning the frequency of bathing practice the majority of the households that constitute about 92.3% reported that their family members would take bathing every week and this is followed by the households who have reported that their family members take every two weeks constituting only 7.7%.

In the same way regarding family cloth washing practice the majority of the households that constitute 60% reported that they usually undertake every week while the remaining households that constitute 40% reported that it is carried out every two weeks.

### **8.4.3.9 Survey findings of Semene Shereshera**

#### **A. General**

Semene shereshera village is located in Semene shereshera Kebele in the East direction of Butajira (the Woreda capital) at distance of 15 kms. Since the village is crossed by the Ziway-Butajira gravel road it is accessible and community has not a problem related to transportation.

The total population of the village that is targeted to be the beneficiary of the proposed project is estimated to 2926 by considering the number of the

household heads that is 424 and the average size of the family for the Woreda that is 6.9 persons.

The settlement pattern of the community is characterized by big village settlement, and small village pattern that is believed to be convenient for the development of basic infrastructure. The villages are formed based on the group interest and individuals wish that is mainly bonded also by the blood relationship.

In the village there is one elementary school that gives the service for the village community and Kebeles communities at large. In addition to this there is also health post in the Kebele that services the community and the surroundings.

Regarding physical infrastructure unlike many rural areas the community has an electric power service for 24 hours from hydropower source. But there is no telephone and postal service in the village and the community gets the services at nearby town Butajira.

As far as water supply is concerned previously there was a water supply scheme from deep well source. The water supply scheme ceased its function since 2004 because of major technical problem that could not be solved. Hence, during the survey period the village population have not water supply access that resulted a great problem to get safe drinking water at a near distance.

## **B. The Surveyed Households Characteristic**

The number of the targeted households to be benefited from the proposed water development is estimated to be 424. It is out of these households that 20 were selected by systematic random sampling method for the survey.

Among the households that are covered by the survey, the males were 18 that constitute 90% and females were 2 constituting 10%. By age distribution the majority of the sampled household is found in the age group of 26-35 constituting 50%, and this is followed by the households who are found in the age group of 36 -45 constituting 30% of the surveyed households.

By ethnic group nearly the entire village community belongs to Gurage ethnic group with a very few mix of other ethnic group. On this base among the surveyed households about 90% is reported to belong to Gurage ethnic where as the rest 10% belong to Oromo and Amahar ethnic groups with equal proportion.

The residents of the villages are heterogeneous by their ethnic comprising of different ethnics such as Gurage and Oromo and Amhara. This is reflected by sampled households and among the surveyed households the majority of them belongs to Gurage ethnic constituting 90% were as the rest belongs to Oromo and Amahara constituting 5% for each ethnic group.

By religion affiliation the majority of the residents of village are the follower of Islam religion except few who are the follower of other region. To this end the entire sampled households are reported to be the follower of Islam religion.

By martial status the survey output indicates that the majority of the surveyed household are married having the responsibility to administer their family with their spouse and this constitute about 85% of the total surveyed households, where the rest few that constitute 10% and 5% are widow and divorced respectively.

Regarding the educational level of the interviewed households the survey output indicates that about 25% were illiterate where as the rest were reported for the level of read and write and 1<sup>st</sup> grad and above constituting 5% and 70% of the surveyed households respectively.

### **C. Economic Activity and Status**

The economy activity of the Semene Shereshera village community is agriculture, which is the mixed one that is farming and livestock rearing. On this base, the survey out put indicates that almost all the surveyed households that constitute about 90% are farmers cultivating crops and rearing livestock for their family livelihood. The rest of the households constitute 10% reported that they engaged in both farming and trading activities.

Apparently among all the households in the village agricultural activity is carried out in most cases in its traditional forms. Hence the farmers usually use two oxen to plough land and the male household head and any active male member of the family manage this activity. Apart from this to undertake related activities with out sex difference every economically active person has the responsibility to involve and contribute labour to the level of its capacity. Because this fact among the village community the women have also the responsibility to work in the field in addition to the chore at home.

#### **Farming**

The types of crop that grow in the village are influenced by agro ecology of the study area and for that matter the most dominantly produced crops are Maize, Wheat and the like. In this respect the surveyed households have reported that they have cultivated such crops for the season.

In the Semene Shereshera village the crop yield that was obtained from crop farming is not that attractive and this was mainly attributed to the poor soil fertility of the area and some trends of not using modern inputs that is utilized for the activity at large.

With this regard the household survey indicates that the majority of the surveyed households that constitute about 36.8% usually use modern fertilizer to increase for their crop production. To this contrary it is also reported that the households that constitute 31.6% use traditional fertilizer and the same proportion of the households don't use any type of fertilizer.

As far as selected seeds utilization is concerned the survey result indicates that about 44.4% of the surveyed households reported that they have used selected seeds where as the rest 55.6% reported that they did not use selected seeds.

In the village households who are engaged in farm activity have their own plot of land be it large or small. On this base they surveyed households were asked whether they have plot of land or not including the size. To this response except one household the rest that account 95% reported that they have their own plot of land for their activity.

Similarly, in response to the holding size among the surveyed households about 44.4% reported that they have 1 hectare of plot of land. This is followed by households who own 0.25 ha. constituting 27.8% of the total surveyed households.

### **Rearing Livestock**

Most of the village residents are engaged in livestock rearing activity as to subsidize their economy. The practice is not wide mainly because of the shortage of grazing land that prevails in the village. It is learned that among the surveyed household about 85% have livestock while 15% of the surveyed households do not have any. As it is shown in the table below the number of livestock owned by a household is not that significant.

Similar to the agricultural activity this activity is also carried out in the village in its traditional forms. So that there is no cattle cross breeding activity in the village to make the activity intensive one having few number of selected breed of cattle.

### **Irrigation activity**

In Semene shereshera village irrigation activity is unthinkable since there is no water source for this activity. For this reason the entire sampled households responded that they do not practice the activity and have no any plot of land for that matter.

### **Household Income and Expense**

Since most of the village residents are farmers by their occupation the major income sources is nothing but income from crops selling and rarely from livestock

selling. To this effect it has been learned that the major income sources of the surveyed household is found to be crop and livestock, which is not that satisfactory.

To get information about the average annual income of the surveyed households, they were asked to tell their annual average income particularly for the fiscal year, and to this reply the most of the surveyed households that constitute 40% reported that their annual income falls in the range of birr 501 - 100, next to this some 35% of the surveyed households reported that their annual income range was between birr 100 - 501 for the fiscal year.

Along this the households were also asked whether their annual average income is enough or not. To this response out of the surveyed household 95% and 5% have responded that it is not enough and it is enough respectively. From this analysis in fact it is simple to conclude that the residents of the village are not at the level of good economic condition.

Along this the households were also asked whether their annual average income is enough or not. To this response the entire households responded that the income that they obtain is not enough for their livelihood. Among those who have responded the average annual income is not enough for their livelihood, most of them mentioned that they have a plan to improve their income by expanding their agricultural activity and involving in other activity that would enable them to generate additional income.

On other hand regarding the annual average expenditure the surveyed households have indicated that their main expenditure items including food, water clothing, education, medical and the like.

#### **D. Residential Housing Units type**

The residential housing units in the village are typical of the rural type mainly constructed by locally available materials. Thus the housing units are classified into two types that are thatched roof type and corrugated iron sheet roof type. With this respect the housing unit type dominantly exist in the village are thatched roof with different size namely from small to largest one.

Accordingly most of the surveyed households that constitute about 85% reported that their housing units are thatched roof type where as only 10% reported for corrugated iron sheet type of housing unit.

All the housing units have wall constructed of mud and wood and also have floor constructed of earth. The typical type of the housing units that is thatched roof ones have circular shape with out separate room for different purpose but in side the house there is partition structure by wood for bed, cooking and domestic animals for the night time purpose.

Nearly all households in the village have not separate kitchen for cooking in the village. Hence, to this end among surveyed households about 95% responded that have not separate kitchen where as only 5% responded have separate kitchen.

## **E. Water Supply Aspects**

### **Source of Water Supply**

The major source of the water for the village community is deep wells and river that is located at a far distance from home. To this fact among the sampled households 78.9% reopened that they get water for household consumption from borehole and the rest 21.1% responded that they get from river.

With regard to the water supply problem some of the surveyed households that account about 95% responded in affirming the prevalence of the problem. With this connection in stating the specific problem area most of the surveyed households that constitute 55.6% responded the distance problem as a major ones and this is followed by the responses for shortage constituting 44.4% as a major problem.

Again those who responded the shortage problem were asked about the period of the problem and some of the surveyed households reported for dry season while some responded saying they face the problem throughout the year with same proportion.

In considering the problems that it would have various impacts on the residents the surveyed households were asked about what major impact they have confronted. In response to this most of the survey households mentioned that the followings as major problem.

- Health problem that is caused by water born disease and
- Long time wastage that could be devoted on other economic activity.

Although it is not a burning issue for all residents it is understood that households who have livestock have a great demand of water for their livestock. To this effect the survey result indicates that most of surveyed households obtaining water for livestock under difficult condition in terms of distance and some times shortage.

### **Time taken to fetching water**

Since there is no water supply scheme in the village it is apparent that fetching water for most the households is time taking. Thus such households are supposed to walk about an hour to reach the sources for a single trip. On this base it is analyzed that about 52.6% of the surveyed household are supposed to

walk about an hour for a single trip, which is followed by households who travel more than an hour constituting about 25%. All these shows as the majority of the sampled households' family members walk a long distance to fetch water daily spending more time that may be used for other economic activity. This is much sounding for the local women who shoulder the burden more than any family member at large.

### **Water quantity and quality**

Concerning the adequacy of water that is obtained from any of source the survey result shows that out of the total surveyed households about 81.3% responded that the water from well source is not adequate, where as the rest 18% responded that it is adequate.

For households who usually use the deep well source for domestic consumption there is no water quality problem. To this effect among the surveyed households about 45% responded that they have not problem with quality of water that they use for domestic consumption. To this contrary about 55% of respondents responded that they are not satisfied with the quality of water since they use unprotected water source.

### **Water fetching responsibility and transportation**

As it is well known and common in many areas fetching water for domestic consumption in the study area is the responsibility of women and daughter. In this respect, among the surveyed households about 44.4% responded that fetching water is the responsibility of wife only where with same proportion other respondents reported that it is the responsibility of wife and children. All this conditions shows that how the study area women suffer from the burden in addition to food preparation and child care and other activity to generate income for the family livelihood.

In the village it is very common to see human and animal or both types of labour while utilized in transporting water from source point to home. With this regard among the surveyed households about 45% responded that they utilize human labour of the family members to transport water from source to home. On other hand the rest of surveyed households that constitute about 55% responded that they use animal for this purpose. The most important animal for this purpose is donkey.

### **Priority need and consumption rate**

In mentioning the priority need area of water, the entire surveyed households responded that their need is for drinking and have also labeled this at the first rank of any other purpose.

Concerning the consumption rate of the water mainly for major purpose including for drinking, food preparation and hygiene most of the surveyed households that account 30% responded that they consume more than 80 liter per day at family level. In same development about 27.8% of the respondents responded that their consumption rate reaches 41- 50 liter per day. As the total effect the average consumption of the households is calculated to be 57 liter and when this converted to each of the family member it would be 8.2 liter which is below the minimum standard of the country that is 15 liter for rural resident.

### **Water payment practice and contribution for the development**

As far as payment for water is concerned the households that constitute about 70% reported that they pay for water that is used for domestic consumption. This is because they use safe water for domestic consumption purpose. The rest that constitute about 30% do not pay water this means they do not uses safe water for their domestic consumption.

The payment is made on tariff base that is fixed by the water committee as to cover the operation and maintenance costs of the scheme. On this base it is realized that the amount of payment varies from individuals to individuals depending on the container they use to fetch water. So that in response to the amount they pay the majority of the households that constitute about 50% reported that they pay 0.15 cents where as the rest that constitute 37.5% and 12.5% reported that they pay 0.20 cents and 0.10 cents respectively.

Mainly for the reason that there is no water supply access in the village the community felt need for water supply development is found very high and due to this case the motivation of the community towards water supply development is mentioned by focus group discussion and on conducted interview by sampled households. Hence, regarding the households commitment the entire households assured to participate in the development activity by contributing to the level of their capacity. To this end among the surveyed households 20%, 30% and 50% have mentioned that to contribute money and labour and all in compound respectively.

### **F. Health situation**

The health situation of the village residents is not that good but poor mainly because of malaria and water related or born diseases. As per the household survey result in one-year period most of the households reported that malaria and intestinal diseases as the major diseases that have been confronted.

The surveyed households those who have reported about the health problem were asked where the treatment service have been obtained. In this case about 75% of the respondents reported that the got the treatment at modern institutes

mainly health post and health centre that are located in Butajira town while other look for local healers.

Regarding diarrhea occurrence within in one year period the majority of the surveyed households that constitute about 75% responded that there was no case among their family where as about 25% have mentioned its occurrence among different groups of person among their family. In most cases the victims of the disease were children under five because of poor sanitation and unprotected water utilization.

### **G. Sanitation situation**

Concerned the sanitation aspects of the village community the surveyed households were asked whether they have or have not latrine for their family, to this response about 75% of the households responded that they have latrine where as the rest 25% of the surveyed household have not latrine for their family. This indicates by itself that as there is good awareness of sanitation by the village community.

In terms of utilization it is reported that mostly the adult men and women utilize their latrine under regular condition with few exceptional cases. On other hand regarding children it is reported that there is no similar trend for different reason mainly fear of risk assuming that children may fall down in to the latrine.

With regard to the type of latrines that have been constructed by the surveyed households that dominantly observed were traditional pit latrines that are constructed purely using local available material.

However the motivation and practical involvement of latrine construction that exists in the study area is encouraging one the emphasis given to the standard issue is not that satisfactory. To this effect during the survey some of the latrines were observed having no roof, no shelter and sanplate.

Beside this, some households were also asked why they did not construct latrine for their family. In response to this, among the surveyed households those who don't have latrine mentioned that economic and skill problems as major problems.

With this connection these households were also asked about place were their family use for defecation and in this response they have mentioned that they use different areas for defecation. On this base the common defecation area for these households are identified to be back yard, bush and farm fields. To this effect the household that constitute about 50%, 25% and 25% responded to use back yard, bush and farm fields respectively.

From the survey, it is also learned that there is no cultural and traditional objection to have and utilize latrine among the village community. To this end all the household who don't have latrine during the study period agree to have latrine for their family.

During the survey while interviewing the households at their home the sanitation conditions of the residential houses' of the inside and outside parts have been over viewed. To this end as the survey finding indicates most of the housing units that are observed during the survey were found being clean of their inside part and this account for 73.7% of the surveyed households. Where are rest that constitute about 26.3% were found being not clean this is mainly attributed to animals that pass the night times with family members and lower living standard of households at large.

With relation to environmental sanitation the surveyed households are asked where they dispose waste that will be generated inside and outside home. On this base out of the total surveyed households 42%, 21%, 21% and 14% responded that they at dispose communal disposal place, at the back yard, in farm land and in front of home/compound and respectively.

#### **H. Improved Hygiene practice**

Regarding improved hygiene practice among sampled households by taking different parameters particularly for critical time, nearly all the households responded that adult men and women practice hand washing under regular condition at critical period where as for children it is reported to be seldom.

Along this concerning the frequency of bathing practice the majority of the households that constitute about 75% reported that their family members would take bathing every week and this is followed by the households who have reported that their family members take every two weeks and every month constituting about 18.8% and 6.3% respectively.

In the same way regarding family cloth washing practice the majority of the households that constitute 47.4% reported that they usually undertake every week while the remaining households that constitute 47.4% and 5.3% reported that it is carried out every two weeks and every month respectively.

## 9. BASELINE SURVEY SUMMARY

Table 5 Summary of the survey findings with major indicators

Indicators	Adami Tulu Woreda	Marekko Woreda		Maasekan Woreda	
	Shisho tora	Koshe town and surrounding	Kuno Keretefa	Keche Bere	Semene shereshera
<b>1. General</b>					
- Number of beneficiary targeted households	207	143	210	265	424
-Number of expected beneficiary population	1470	987	1449	1826	2926
- Number of surveyed household	20	50	20	20	20
- Education level of surveyed HH	Literate (60%)	Literate (77.1%)	Literate (75%)	Literate (55%)	Literate (75%)
Ethnic group	Oromo (100%)	Gurage & Mareko (60%)	Mareko (70%)	Gurage (95%)	Gurage (90%)
Religion	Islam (100%)	Orthodox (56%)	Orthodox & Protestant (80%)	Islam (100%)	Islam (100%)
<b>2. Economic aspect</b>					
- Occupation	Farmer (95%)	Farmer (50%)	Farmer (90%)	Farmer (95%)	Farmer (90%)
- Major source of income	Crop selling	Crop selling	Red pepper selling	Crop selling	Crop selling
- Average annual income	900	1442	1250	1040	830
- Average land holding size	0.85(ha)	0.5(ha)	(0.1)	(1.3 ha)	(0.5)
- Irrigation practice	Low	Low	Medium	Medium	No
- Average livestock holding	4	4	5	6	5
<b>3. Water supply aspect</b>					
- Major source	Deep well (70.6%)	Deep well (82.6%)	Shallow Well (61%)	Hand dug well (35%)	Deep well (78.9)
- Average time to reach the water source /single trip/	48 (Minute)	33 (Minute)	20 (Minute)	12 (Minute)	50 (Minute)
- Main responsible body to fetch Water	Only Wife (47.4%)	Wife & Children (38%)	Only Wife (45%)	Wife & Children (40.0)	Only Wife (44.4%)

Indicators	Adami Tulu Woreda	Marekko Woreda		Maasekan Woreda	
	Shisho tora	Koshe town and surrounding	Kuno Keretefa	Keche Bere	Semene shereshera
- Commonly utilized labour to fetch water	Animal (52.6%)	Human (80%)	Human (95%)	Human (94.7%)	Human (80%)
Major problem related to water supply	Distance (55.6)	Shortage (80%)	Distance (46.7)	Shortage (53.8%)	Distance (55.6)
Average water payment rate	0.15 cen/20 liter	0.15 cen/20 liter	0.15 cen/20 liter	1.00 per month	0.15 cen/20 liter
Average consumption rate of water	71.5 lit/HH	84 lit/HH	49 lit/HH	64 lit/HH	57 lit/HH
<i>4. Health and sanitation</i>					
- Common disease	Malaria	Malaria	Malaria	TB	TB
- Diarrhea occurrence	15%	26%	15%	40%	25%
- Latrine Access	85%	93.5%	70%	55%	75%
- Latrine utilization	Moderate	Regular	Moderate	Moderate	Moderate

## 10. RECOMMENDATION REMARKS

In considering the sustainability of the designed development and achieving the desired goal that is to improved health and increased productivity of the target community the consultants recommendation include the followings:

- To organize the community through the water resource office and Kebele administration,
- To establish water supply sanitation and hygiene committee that could mobilize the community and manage the scheme under sustainable condition,
- To train water supply, sanitation and hygiene community,
- To mobilize the village community to contribute for development activity in different forms of contribution as to develop ownership feeling,
- To train care takers on technical know-how to enable them undertake operation activities and minor maintenance,
- To involve women in decision making activities and allow them to play the leading role,
- To hand over the scheme to community as the construction complete and
- To develop the awareness of target communities on sanitation and improved hygiene practice

# APPENDICES

## Questionnaire for the HH Base Line Survey

### I. General Socio-Economic Characteristics of the Household Members

#### Area Identification

Region	Zone	Woreda	Kebele	Village

SN	Household member	Age	Sex		Relationship to HH head	For the HH head			For all persons aged above 6 year			Occupation
						Ethnic	Religious affiliation	Marital status	Illiterate	Read & write	Previously Attended grade	
00	01	02	03	04	05	06	07	08	09	10	11	12
1			M 1	F 2								
2			1	2								
3			1	2								
4			1	2								
5			1	2								

(04)

1= Head

2= Spouse

3= Son /daughter

4= Mother/ Father

5= Sister/Brother

6= Other relative

7= None relative

(05)

1= Gurage

2= Oromo

3 = Amhara

4= Other

(specify)

(06)

1= Orthodox

2= Islam

3= Protestant

4= Catholic

5= Other

(specify)

(07)

1= Single

2= Married

3= Divorced

4= Widow

(012)

1= Farmer

2= Trader

3= Farmer&

Trader

4= Other

(specify)

## II. Economic Aspects

### 1. Sources of annual income and estimated amount

Sources	Estimated (in Birr)
Crop	
Vegetable and fruits	
Spices	
Eucalyptus tree	
Livestock	
Animal products	
Hiring labour	
Family support	
Trading	
Other (Specify)	

2. What is your annual average income from the major sources? Birr \_\_\_\_\_

3. Do you think that this is enough for the household livelihood?

a) Yes  Skip → 5      b) No

4. If no, what is your future plan? (Specify) \_\_\_\_\_

5. Do you have land plot?

a) Yes       b) No  Skip → 15

6. What is the size of the land plot? (in hac) \_\_\_\_\_

7. Tell us what the type of crop you have cultivated and the amount of yield obtained?

Types of Crop	Plot Size (in hac.)	Obtained yield (in qui)

8. Usually which type of fertilizer do you use to increase crop production?

a) Modern Fertilizer    b) Traditional fertilizer    c) Never use

9. Do you use selected seeds to increase crop production

a) Yes     b) No

10. If yes, for what type of crop do you use? (Specify)

1.

2.

3.

11. Do you have an irrigation farm?

a) Yes     b) No

12. If yes, tell us the size of the plot you use under irrigation? \_\_\_\_ (hac.)

13. What are the major crops you have produced and obtained yield from irrigation in this current year?

Type of crop	Obtained yield (in quintal)

14. What is your source of water for your irrigation activity?

a) River    b) Spring    c) traditional pond    d) modern pond    e) hand dug well

15. Do you own livestock

a) Yes     b) No     Skip → 17

16. If yes, state the type and number of the livestock

Types of livestock	Number
Bulls/Oxen	
Cow	
Horse	
Donkey	
Mule	
Calve	
Sheep	
Goat	
Chicken	

17. Have you ever faced shortage of food in the last two years?

a) Yes  b) No

18. If yes, what mechanism did you apply to overcome the problem?

a) Migration b) Decrease the amount of food intake  
c) Decrease the quality of food d) Other (specify) \_\_\_\_\_

19. How many meals do the members of the household get every day?

Household category	Number of meals
Adults	
Expectant mother	
Nursing mother	
Children under 5 year	
Children above 5 year	

20. What type of residential house do you have?

a) Corrugated roof b) Thatched roof  
c) Both type d) Other (specify) \_\_\_\_\_

21. How many rooms does your house have?

a) One b) two c) Three d) Four e) More than four

22. Tell us your major annual expenditure area and the amount?

Item	Amount (in Birr)
Food and related items	
Clothing	
Seed	
Fertilizer	
Pesticides	
Farm equipments	
Water	
Land rent	
Education	
Medical	
Other (specify)	

### III. Water Supply aspects

1. What is the regular and most accessible source of water for domestic consumption?

Source Type	Distance from house (in minutes)	Adequacy	
		Adequate	Not adequate
Deep Well			
Shallow well with hand pump			
Hand dug well with hand pump			
Developed spring			
River			
Unprotected spring			
Pond			
Unprotected hand dug well			
Other specify			

2. Who is responsible to fetch water for domestic consumption?

- a) Wife only                      b) Husband only  
 c) Wife and husband          d) Wife and children  
 e) Children only                f) Other (specify) \_\_\_\_\_

3. What type of labour does the family use to fetch water?

- a) Human                      b) Animal            c) Others (Specify) \_\_\_\_\_

4. Does the household keeps drinking water in separate container?

- a) Yes       b) No

5. Do you think that there is a problem related to water supply?

- a) Yes                       b) No

6. If yes, what do you think as a major problem?

- a) Shortage of water      b) Distance problem  
 c) Safeness                      d) other specify \_\_\_\_\_

7. What is the impact of the problem you have mentioned? Specify

\_\_\_\_\_

8. If there is a shortage problem, which period?

- a) Through out the year b) Only during dry season  
 c) Other period (specify) \_\_\_\_\_
9. Tell us your priority need area of water and consumption amount by the family per day or during utilization?

Purpose	Ranking order	Amount (in lit.)
Drinking		
Food preparation		
Washing clothes		
For personal hygiene		
Gardening		
Livestock		
Other (Specify)		

10. Are you satisfied with quality of water supply that you use for human consumption?  
 a) Yes  b) No
11. If no, what type of quality you feel as a problem?  
 a) Bad smell b) Salty c) Turbidity d) Fluoride e) Other (specify)
12. Are you paying for water (for household who has access to improved water supply)  
 a) Yes  b) No  skip → 17
13. If yes, what is your term of payment?  
 a) Tariff b) Flat rate Skip → 15 c) other (specify) \_\_\_\_\_
14. If tariff how much per Jerrican?  
 a) 0.10 b) 0.15 c) 0.20 d) other (specify) \_\_\_\_\_
15. If flat rate payment when do you settle the payment?  
 a) Every two weeks b) Every month  
 c) Every six month d) every year
16. If flat rate how much is it?  
 a) 0.50 b) 1.00 c) 1.50 d) Other (specify) \_\_\_\_\_
17. If you don't have an access to safe drinking water do you think that is your priority need?  
 a) Yes  b) No
18. If yes, how do you participate in water development activity?  
 a) Money contribution b) Labour contribution

- c) Locally available material contribution      d) All combined
- e) Other (Specify) \_\_\_\_\_

19. How do you get water for your livestock?

- a) Easily                      b) difficult                      c) I don't know

20. If difficult what is the major problem?

- a) Shortage                      b) Distance                      c) Other (Specify) \_\_\_\_\_

#### IV. Health and Sanitation aspect

1. Among the household members was there a person who has faced diarrhea problem in one-year period?

a) Yes  b) No  Skip → 3

2. If yes, tell us the affected group and its frequency?

Household group	Frequency			
	1 time	2 times	3 times	More than 3 times
Children under 5 years				
Children above 5 years				
Adult women				
Adult men				

3. Has any one in your household been seriously sick during the last one year?

a) Yes  b) No  Skip → 5

4. If yes, tell us the type of the disease and how it has been treated?

Household member	Types of diseases	Types of Treatment Service				
		Modern Service	Local healer	Holy water	Other	Result obtained
Husband						
Wife						
Children under 5 years						
Children above 5 years						
Other specify						

5. Do you have latrine for the family?

a) Yes  b) No  Skip → 10

6. If yes, what type of latrine?

- a) Traditional pit latrine                      b) Improved pit latrine  
 c) Ventilated improved pit latrine    d) Other (specify) \_\_\_\_\_

7. If you have latrine what is its existing condition?

- a) Well constructed            b) Has only wall  
 c) Has no shelter                d) Has no roof                    e) Other (specify) \_\_\_\_\_

8. Tell us how the members of the household utilize the latrine?

House hold member	Utilization condition		
	Regularly	Seldom	Not at all
Adult Men			
Adult Women			
Children			

9. If it is not regular what is the reason for that? please specify?

\_\_\_\_\_

10. If you don't have latrine what is the reason?

- a) Economic Problem                      b) Cultural problem  
 c) Skill Problem                              d) Other (Specify) \_\_\_\_\_

11. If, you do not have latrine where do the family member suppose to defecate?

- a) At the back yard            b) In the bush    c) In the farm field    d) other (specify)

12. Do you agree that the household must have latrine?

- a) Agree                      b) Disagree                      c) I don't know

13. If disagree what is your reason? Specify

\_\_\_\_\_

14. Sanitation condition of the house

i.                      Inside

1. Very clean            2. Clean            3. Not clean

ii.                      Outside

1. Very clean            2. Clean            3. Not clean

15. Do domestic animals and the household members pass the night in the same room?

a) Yes  b) No

16. Does the housing unit have separate kitchen?

a) Yes  b) No

17. Where do you dispose waste?

- a. Communal disposal place
- b. Backyard
- c. In front of home/compound
- d. Farm land
- e. Other (specify) \_\_\_\_\_

18. Tell us the hygiene practice of the household members?

Practice type	Adult Man			Adult women			Children		
	Regular	Seldom	Never	Regular	Seldom	Never	Regular	Seldom	Never
Wash after toilet									
Wash before food									
Wash after eating									
Wash before food preparation									
Wash after cleaning children faeces									
Wash after burial									

19. How often the household members take bath?

- a) Every week b) Every two weeks
- c) Every month d) other (specify) \_\_\_\_\_

20. How often the household members wash clothes?

- a) Every week b) Every two weeks
- c) Every month d) Other (specify) \_\_\_\_\_

Enumerator's: Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_