

**Amhara National Regional State
Water Resources Development Bureau (BoWRD)**



**Feasibility Study and Detail Design Of
Amitu Small Scale Irrigation Project**

**Socio Economic Feasibility Study
Final Report**

Volume V: Socio Economic Assessment



**Amhara Design & Supervision Works Enterprise
(ADSWE)**

October 2015

**Amhara National Regional State
Water Resources Development Bureau (BoWRD)**

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Of
Amitu Small Scale Irrigation Project**

**Socio-Economic
Feasibility Study Final Report**

**Volume V: Socio-Economic Study
September, 2015**

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LIST OF DETAIL DESIGN REPORT STRUCTURE

- ≡ Volume I: Watershed Management
- ≡ Volume II: Engineering Geology
- ≡ Volume III: Irrigation Agronomy
- ≡ Volume IV: Engineering Design
- ≡ **Volume V: Socio Economic Assessment**
- ≡ Volume VI: Environmental Impact Assessment

EXECUTIVE SUMMARY

The economy of Ethiopia is largely dependent on rain fed agriculture. The dependency on rain fed agriculture coupled with erratic nature of rainfall is the major factor that blamed for the poor performance of the sector and main cause of widespread food insecurity in the country. To reduce this problem irrigation has served as key solution for the growth of agricultural productivity, increasing household income and alleviation of rural poverty.

Amitu Small Scale Irrigation Project is one of the irrigation projects identified by the regional government. The project area is found in North Shewa Administrative Zone of Amhara Region, Asagirt Woreda, in Tamo Kebele. The total command area of the project is estimated to 150 hectares. Anticipated beneficiary household are 126 by registering land holders in the command area.

The overall objective of the project is to ascertain effective and efficient utilization of accessible irrigable lands and water for secure better livelihood by improving beneficiaries' income and ensure sustainable development.

About 30 households were selected by using simple random sampling technique and interviewed individually by using structured questionnaires. To assess community attitude toward the proposed irrigation project Community consultation also conducted. Participants of the consultation express their heartily support as they expected that the project would lend a hand them to produce more than once per year. Secondary data were also collected from kebele and woreda offices.

The total population size of the project area where the project is found estimated to be 819 in the year 2015. From the total population about 50.7% had belonged to the labor force, i.e. lies the age between 15 to 64 years.

Agriculture is the dominant economic base and it is almost the only means of living for the people of the study area. Nearly 100% of the population in the study area depends on this sector of the economy for generating income and have got employment opportunity. The farming system is mixed farming system that integrated crop production and livestock production. Crop production is the main base of livelihood in the project area. It is source of home consumption needs and source of cash that

required to fulfilling other household needs including closing, food oil, fuel oil, salt, coffee and other social and economic expenses.

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ABBREVIATIONS AND ACRONYMS

ACSI	Amhara Credit and Saving Institution
AGP	Agricultural Growth Program
B/C	Benefit Cost Ratio
DAs	Development Agents
ETB	Ethiopian Birr
FIRR	Financial Rate of Return
FNPV	Financial Net Present Value
FTC	Farmers' Training Center
Ha	Hectare
IRR	Internal rate of Return
KM	Kilometer
NGO	Non-Governmental Organization
NPV	Net Present Value
PADET	Professional Alliance for Development in Ethiopia
PCA	Project Cite Area
Qt	Quintal
WUA	Water Users Association
WUO	Water Users Organization

1. INTRODUCTION

1.1 Background of the Study

Agriculture contributes substantially to the economic growth of many low income countries. It is often the leading sector of the economy as source of income, employment and foreign exchange. Agriculture output also is used as an input for industries so it can stimulate the growth of industrialization.

The economy of Ethiopia is largely dependent on agriculture, and about 85% of the population is engaged in it. The dependency on rain fed agriculture coupled the erratic nature of rainfall is the major factors blamed for the poor performance of the agricultural sector and main cause of widespread food insecurity in the country.

Irrigation has served as one key driver behind growth in agricultural productivity, increasing household income and alleviation of rural poverty. Irrigation contributes to agricultural production in two ways: increasing crop yields, and enabling farmers to increase cropping intensity (variety of crops in a year) and switch to high value crops.

Agricultural growth in Ethiopia offers possibilities for reducing risks of food shortages at all levels, increasing overall supply of food crops, creating economic opportunities for vulnerable people and improving dietary diversity and quality of food consumed by farmers.

The main objectives of the regional government and particularly the study area are ensuring the availability of adequate and surplus food as well as reliable socio-economic services to all. The strategies set to this end include the support to be given to population through the expansion of extension services, Supply of improved technologies, rural credit facilities, irrigation schemes, off-farm employment opportunities and natural resource conservation. Though the region has in the last few years made considerable progress towards attaining these objectives, this study has undertaken to further strengthen the objective of attaining food security through developing small-scale irrigation scheme.

Amitu small scale irrigation system is one of such projects intended to transform the traditional rain fed agriculture into sustainable and more productive irrigated agriculture to solve the multi-faceted socio-economic problems in the study area. This survey is also part of the many sectoral studies conducted to justify the possibilities of small scale irrigation scheme in the study area on 150 ha of potential irrigable areas.

Similarly, the performance of the socio-economic survey will also support proper implementation of the project by providing basic data and information on current situation of the woredas in general, and the irrigation area in particular. This activity is essential to guide the project in designing irrigation systems that are compatible with the socially acceptable mode of production in the area.

1.2 Objective of the Study

The main objective of the socioeconomic survey is to provide the project with necessary baseline information on current social and economic situation in the study area (PCA). The survey will also serve as a benchmark for decision making smooth implementation of the project.

In light of the above general objective and scope, the specific objectives of the socioeconomic survey are to:

- Estimate the magnitude and identify the profile of the target households in the kebele;
- Describe the prevailing demographic features in the PCA;
- Assess existing socioeconomic settings and deliveries of social services and economic supports in the PCA and their impact on proper implementation of the project;
- Identify existing social and economic organizations that will have a direct influences on the project implementation;
- Assess existing traditional WUOs and propose the most fitting organization for future irrigation water use;
- Investigate related problems and constraints and suggest actions and solutions for the smooth implementation and sustainable use of the project.

1.3 Scope of the Study

The study evaluates the social, cultural, financial and economic viability of the project. The scope of the study tries to identify indicators that can show the real and essential measurable impact of the project in the future. Therefore, this study covered the issues of social acceptance, profitability and the viability of the project at grass root /farmers' level which the specific project area located.

1.4 Methods and Materials

In light with the objective, scope and nature of the irrigation project dictates the methodologies and approaches used in this socio-economic survey. Due to the need for test of viability of the project quantitative approaches were selected to identify and explore the most important indicators and information by secondary and qualitative information.

Since the project is also intended to improve the agricultural productivity, and sustainability of livelihood of the small scale farmers resided on 150 ha of command area, the ultimate focus (data collection units) should be on individual households who will be the beneficiaries of the project. Therefore, the approach to this socio-economic survey undertaking and the data collection methods are purely quantitative and measure outcomes and impacts in any cycle of the intended project. Two types of data collection methods (qualitative and quantitative methods) have been used in this socio-economic survey.

1.4.1 Methods of Data Collection

1.4.1.1 Quantitative data collection methods

The major objective of this method is to capture data and information which are figurative and enable to draw quantitative indicators and measure financial viability principles of the project.

The core of socio-economic analysis is test of viability which requires analysis of quantitative data and information. These data could also be used for measuring the outcome and impact of the project on latter stage. The most important survey and data collection methods in this category are sample household survey and secondary data collection methods.

1/ Primary data collection

The quantitative methods such as sampling of individuals and group of households are important to collect data that capture peculiar individual and household behaviors, characteristics and welfare positions. The household sample survey method is taken as a major data collection method, to look into inter-household variations in access to resources and to measure variations in their capabilities. These data could also be used for measuring the outcome and impact of the project on latter stage.

2/ Secondary data collection

A comprehensive secondary data collection sheet has been prepared for both woreda and the target kebele to collect social, economic and physical characteristics and attributes. Annual reports of the sector offices at woreda and kebele level, previous baseline surveys of ADSWE, various documents of the Ministry of water resources, and other relevant information from different sources were sources of secondary data. The CSA statistical bulletins were also other sources to predict the population projection. These secondary data were used to validate the sample survey out puts and to analyze woreda and kebele level variables and socio-economic characteristics wherever necessary.

1.4.1.2 Qualitative data collection methods

The qualitative data collection methods include meeting which undertake the whole community of project beneficiaries and negatively affected communities, woreda level relevant sector offices (Agriculture, Cooperative, Trade and others).

The qualitative information such as key informants' interview with beneficiaries and negatively affected persons, kebele administrative bodies and health extension agents are also used to substantiate the findings of primary information and to capture vital community level socio-economic characteristics.

1.4.2 Survey Instruments

Survey instruments have been used to collect information for the socio-economic study. Household sample survey questionnaires are prepared to collect data from sample household. The demographic characteristics of sample households, income and expenditure, economic

infrastructure and services (health, education, water supply, housing and sanitation, energy, communication, road and transport), land tenure, agricultural production (crop and livestock production), agricultural marketing, financial institutions, gender and culture issues are insisted in the questionnaires.

The secondary collection sheet was used to collect data at woreda and kebele level and comprises food security, agricultural input and output market.

Others are checklists to collect qualitative information from key informants like offices of agriculture and rural development, cooperative, and trade offices at woreda level and Kebele administration and health institutions. Checklists are also prepared for community consulting for beneficiary communities and negatively affected groups.

The beneficiary list record sheets were also used to identify the beneficiaries with their land holding size at 150 ha command area.

Field Organization and Training of Enumerators

To ensure the reliability of the data proper care was taken in selecting the enumerators and training in basic principles and actual practices of data collection methods both in class and at field level. The enumerators were selected from Development Agents in Agriculture office. A total of 4 enumerators were selected for household survey. The selected enumerators are well versed in data collection, local language, culture and social setting from their daily contact with the local community. Therefore, there is no knowledge and cultural barriers in collecting the required information.

Data Processing and Analysis

Each and every questionnaire was edited and the questionnaire was coded for easy entry and processing. More of the data editing, cleaning and entry were made at the firm's office. After data editing is completed, data entry was made using SPSS. Finally the data entered in the spread sheet program was converted into more suitable SPSS program.

The major data analysis methods used for the preparation of the survey was simple descriptive statistics (mean, frequencies, ranges and others), and other more appropriate tools. In general, bi-variate and multi-variate tables and graphs are used for analysis and presentation of the data.

1.4.3 Sample Design and Sample Size

Two stages random sampling method was used to collect data and to conduct socio-economic studies of the project areas. The sample design considered the target groups of the project area. The target groups are the direct beneficiaries. The second stage includes the selection of the sample households from the project beneficiaries. The procedure, as indicated above is to use the sample frame from the project area. Recent list of all resident households in the project area have been used to select sample households randomly.

The sample size depends on the total population in the project area, the diversity of the farming systems and agro-ecological characteristics, the social and cultural setting of the communities and the purpose of the study. The project area is more or less homogeneous in terms of social and economic setting, and farming system. All of the population is the same ethnically and share common culture and languages. Economically, they are traditional mixed farming agriculturalists sharing common livelihood constraints and potentials.

In general the calculated sample size for the project area is about 10 percent of the total household population in the project area. Of the total selected samples 90 percent were males and the rest 10 percent were female household heads.

1.5 Limitation of the Study

In accuracy and Lack of data had seen during survey. Household farmers do not have records and the data they supplied might not be accurate. This limitation had also shown at the level of woreda experts and kebele offices especially of keeping records for many successive years' data. The experts had been over loaded by field work and other office works to give the data.

2. SURVEY RESULTS

2.1 Description of the Study Area

2.1.1 Geographical Location

The study area is located at Tamo kebele, Asagirt woreda, North Shewa zone of the Amhara region and lies adjacent to the access road linking Asagirt woreda with Debre Birhan town. It is far from 8km from Ginager town, center of the woreda. The relative location of the project site is shown in the figure below.

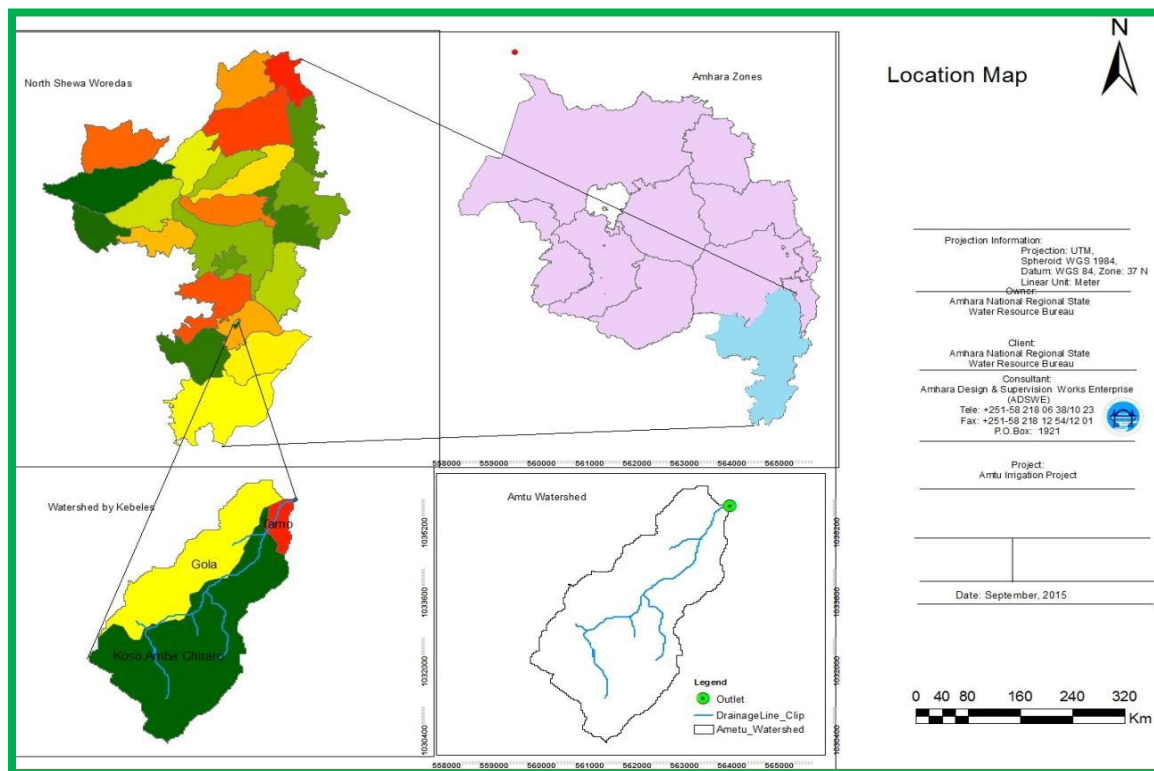


Figure 1: Location map of the project area

2.1.2 Land Use Pattern

Based on the data collected from Tamo kebele agricultural office the total area of the kebele is estimated to be 3150 hectares. Out of which the share of land under cultivation is 1356 (43%) with different annual crops; and the remaining is divided for grazing land (21.32%), forest and bush land (34.87%), and settlement areas and others (0.75%).

At present almost the whole command area is under intensive cultivation of cereal crops of individual holdings and communal grazing lands. The main agro-economic base of the area is mixed farming crops and rearing of livestock. The land use of the kebele including the project site has presented in the following Table below.

Table 1: Existing land use pattern of Tamo kebele

Land use type	Area(ha)	(%)
Cultivated land	1356	43.05
Rain fed	1164	85.84
Irrigated	192	14.16
Cultivable land	0	0.00
Grazing land	671.5	21.32
Forest	377.45	11.98
Bush	721.05	22.89
Useless land	0	0.00
Settlement area	24	0.76
Water body	0	0.00
Others	0	0.00
Total	3150	100.00

Source: Tamo kebele agriculture office

2.2 Demographic Characteristics of the Study Area

Demographic factors will play an important role in the evolution of the current as well as of the potential land use, since land use is the product of the interaction of man on land. Changes in demand pattern due to urbanization and availability of workforce are two important demographic factors which affect land use (LUPARD).

The population of any particular place is not homogenous collection of people. It is composed of people with different characteristics, which can be categorized as the age-structure, sex-composition, religious, ethnic and occupational groups, marital status, wealth status, educational level, etc.

Increasing population from time to time has created a serious burden on the environment particularly manifested in increasing number of land deficit households, high population density, low per capita agricultural production, increasing demands for land based resources and environmental degradation. Relatively low access to basic services (health, education, sanitation and water supply) and food security further compounded the problem of population growth.

According to the Tamo kebele Agricultural office, the total population is 4910, of which 2493 male and 2417 female population. The study area also has total of 988 household heads 429 (43%) male and 559 (56%) female house hold heads. The population distribution is shown in the following table below.

Table 2: Population size by Sex composition of the project area

	Sex distribution					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Total population	2493	50.77	2417	49.23	4910	100
House hold heads	429	87.91	559	12.09	988	100

Source: Tamo kebele agricultural office, 2015

The estimated population of the kebele would be 4682 by 2027 E.C. Those projections imply average population growth rates of 1.8 percent starting from the actual 2007 E.C year. The population summary is given in the following table below.

Table 3: Population summary of the project area

Description	unit	Tamo kebele	Remark
Total population	person	4910	M=2493, F=2417
No. of HHs.	person	988	
Average family size	P/F	4.97	
Agricultural density (TRP/TA in ha)	P/Ha	1.56	
Population growth rate	person	0.018	Assume growth rate is 1.8 percent
Projected population up to 20 years	person	7015	
Population estimated to be increased	person	2105	

Source: Tamo kebele administration office

The agricultural density of the study area is about 1.56 persons per hectare which shows the area is relatively densely populated that the agricultural land possession is small and fragmented difficult to increase its production and productivity through mechanization or other means of mechanism. The population of the area is estimated to be increased 2105 in the life of the project; so that the existing population pressure and fragmentation of land will be further aggravated unless solutions have been devised a head of time.

2.3 Age Distribution of the Population

Out of the total population 2457 or 50.04 % of the population are in the category of 15 to 64 ages (i.e. economically active age population). The rest 39.4% of the populations are dependent on the economically active age population. Actually as everywhere else in Ethiopia, those men and women aging between 10 and 14 are active labor force. This makes the number of economically active labor force population increasing. The age distribution of the population is shown in detail in the table below.

Table 4: Age distribution of the project area

s/n	Age group	Tamo kebele age distribution			%
		Male	Female	Total	
1	0-14 years	1132	1231	2363	48.13
2	15-64 years	1211	1246	2457	50.04
3	>64 years	55	35	90	1.83
	Total	2398	2512	4910	48.13

Source: Tamo kebele agricultural office, 2015

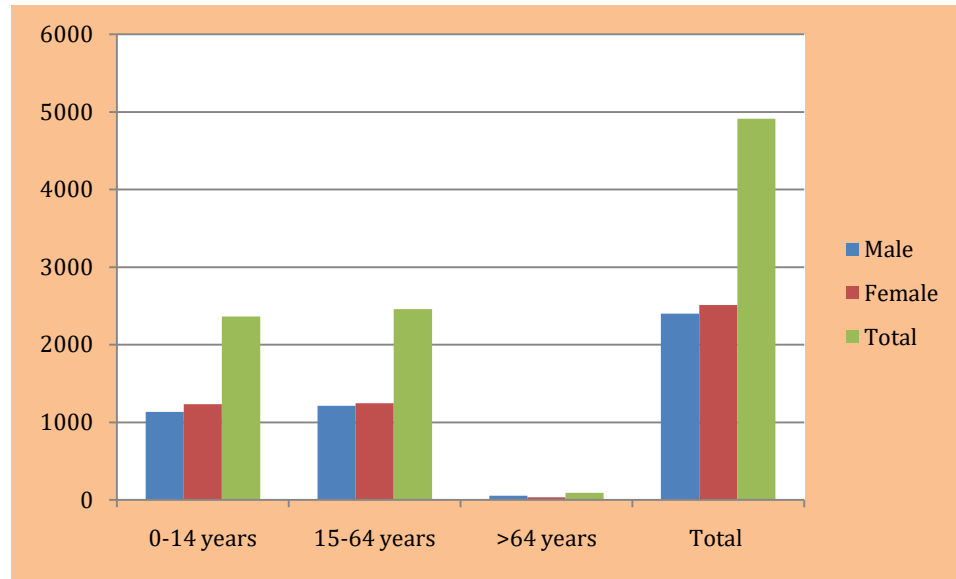


Figure 2: Labor force availability in the study area

Labor force is a segment of economically active population within the age group of 15 to 64 that are capable of participating in income generating economic activities and are readily available in the labor market. Among the kebele population approximately 50.04 percent of the population, was in the labor force. The majority of population in the study area is within the labor force age group (i.e. between 15 to 64 years old). There are three types of Age dependency ratios which are:

General age dependency ratio (GADR) considers both young and old aged dependent household members; mathematically it is defined as:

$$\text{GADR} = \frac{\text{No. of people at age group } [(< 15) + (> 65)]}{\text{No. of people at age group } (15 - 64)}$$

Youth age dependency ratio (YADR) deals with young economically dependent people in the household and similarly its mathematical formula is given as:

$$\text{YADR} = \frac{\text{No. of people at age group } (< 15)}{\text{No. of people at age group } (15 - 64)}$$

Old age dependency ratio (OADR) represents the ratio of economically dependent household members due to old age to economically active people capable of income generation and it is given as:

$$OADR = \frac{\text{No. of people at age group (> 65)]}}{\text{No. of people at age group (15 – 64)}}$$

In the study project area, young and old age dependency ratios were 96.2% and 3.6% of the active labor force respectively; and the general age dependency ratio of the study area was 99.8 % of the labor force. This implies that 96.2 young and 3.6 old people, hence approximately a total of 99.8 people, were dependent on the income earned by 100 economically active people, who were aged within the range of 15 to 64 years.

2.4 Marital status

In relation to marital status about 66.7% of the respondents have got marriage, 10% divorced, 23.3% are unmarried/widowed.

Table 5: Marital Status of respondents by sex category

Marital status of the respondents	Total		By Sex category	
	Frequency	Percent	Male in %	Female in %
Unmarried	7	23.3	23.3	0.0
Married	20	66.7	60.0	6.7
Divorced	3	10.0	6.7	3.3
Total	30	100	90	10

Source: Household survey, 2015

From the total households interviewed in the survey about 30% and 66.7% are single and coupled respectively. In the study area about 40% of irrigation users are young people. The participants during the public consultation session also described as “the project is very essential to create job opportunity especially for youth group”.

2.5 Education status

The literacy rate in the kebele is very low. Out of the respondents about 80% can read and write and the other 20% cannot read and write. This implies that adopting new technologies is difficult because of their awareness and ability to use such technologies for better agricultural production. Educated people have better knowledge about the production and marketing system of irrigation crops and they have better ability to use appropriate technologies and inputs for optimum production.

Table 6: Education status of the respondents by sex category

Education status	Total		By Sex category	
	Frequency	Percent	Male in %	Female in %
Illiterate	6	20	10	10
Able to Read and Write	12	40	40	0
1-8 Grades Completed	9	30	30	0
9-12 Grades Completed	3	10	10	0
Total	30	100	90	10

Source: Household survey, 2015

2.6 Ethnic and Religious

The sample household survey indicated that all of the sample population in the project area is of Amhara ethnic group. Amharic is a widely spoken language and a mother tongue for all of the population in the project area. Orthodox Christian is the dominant religion. Out of the total population, 100 percent are followers of Orthodox Christianity religion as shown in the table below.

Table 7: Religion of respondents in the study area

Religion	Frequency	Percent
Orthodox Christian	30	100
Others	0	0
Total	30	100

Source: Household survey, 2015

2.7 Housing Condition and Settlement

The settlement pattern of the population is scattered. The settlements are established by a group of households who have usually close blood ties and comprise a group of houses attached to farmlands and homesteads. In general, almost all of the total population of both categories of project area resided in and around their farm land (secondary data from kebele administration and from filed observations).

From the survey result, it has estimated that 50 percent of the respondent households have a corrugated iron roof houses, 17 percent have grass roofed house and the rest 33 percent have both types of houses.

Table 8: Type of Housing Unit of the respondents

Type of housing unit	Frequency	Percent
Hut with Grass thatched roof	15	50
House with Corrugated iron roof and soil Ground	5	17
Both types	10	33
Total	30	100

Source: Household survey, 2015

2.8 Population Migration

Two types of migrations are common in the Amhara region and specifically the project areas. As the data from Addis Ababa woreda women affairs and PADET indicate that seasonal and permanent migration especially children and youth women migration by illegal broker are the core problems. Seasonal migration, with the major objective of search for jobs, education and other temporary reasons are very common type of migration practiced by the majority of the surveyed households. Seasonal migration is mostly localized and season bound with return period of less than one year. This type of migration is very common recently particularly among the females and young age males who lack access to land and other opportunities. Poverty related factors are major reasons for such type of migration. Thus the poor and the marginal groups are most likely to experience seasonal migration compared to the relatively better off households. Permanent out migration is either localized or trans-boundary and mainly related to chronic poverty and vulnerability of livelihoods, marriage, dislocations, epidemic, and other reasons that force population to permanent dislocations. Like temporary migrations, the poor is more likely to permanently migrate than the better off.

2.9 Land Tenure and Size of Holdings

In Ethiopia it is known that land is the property of the government. However; the owner of the farm land has the right to use, rent and able to transfer to the next generation.

Family size as the main criteria the land redistribution was held during 1991 and the regional government has no intension to continue to with reallocation hereafter. Because it has been thought that reallocation now and then leads to fragmentation of land and thereby decrease per capita food production. As the administrative bodies of the kebele explained that on average one household has 0.625 ha. Landless youths and newly married households have been leading their live by renting land from others and by doing works for others as daily laborers.

2.10 Social Services and Infrastructures

2.10.1 Education

Education is very essential for development as it is an instrument in fostering progress towards other goals, such as reducing extreme poverty and hunger by building up poor people’s producing potential, creativity and improving child health via the beneficial effects of maternal education. Thus, it is one of the vital sectors which emphasis has given by the government to improve the quality as well as to expand access especially for rural and underserved areas.

There is one elementary school /from grade 1-4/ and one satellite school found in the study area. As the data from kebele administration office indicate that in these schools 471 students were attend in 2007 E.C. Out of the total students, 49 % are females which have almost equal share of male students. There are 6 student drop outs from school due to different reasons like migration to other places for labor, households need their child labor, health problem and so on.

Table 9: Number of students attended in 2007

Level of School	Number of schools	Number of Students			Share of female students (%)
		Male	Female	Total	
Satellite	1	65	60	125	48
Grade 1-4	1	176	170	346	49
Grade 1-8	0	0	0	0	0
Total	2	241	230	471	49

Source: Tamo kebele administration office

2.10.2 Health

Health service coverage is one of the major indicators of the level of living standard of the community. Besides health care infrastructure, provision of adequate clean water and sanitation, malnutrition and primary education are crucial to improve the health status. Likewise, the productivity and sustainability of any development program is determined by the supply of healthy workforce. Much focus has been given to improve access to preventive and curative care for those who have inadequate access as well as to improve effectiveness of health services, staffing and adequate flow of drugs.

The second most needed social service in general is health. In the study area there is one health post at which gives prevention service. There is also one health center in the project area. Additional health treatment is given for the population at neighboring areas from the project area, at Ginager town 8km distance far from the kebele center. There are 15 health service providers to give health services to the community. Sanitation and hygiene are one of the key issues to create healthy population. From the household survey result, 65% of the respondent households use the latrine properly.

2.10.3 Access to Potable Water Supply

Providing access to safe and adequate water is one of the key factors for socio-economic transformation. Water has an interactive linkage with health and education. Good health is crucial to enhance the productive capacity of the community and improve attendance and performance of students, especially for girls by reducing water fetching burden. Thus, availability of clean and sufficient water plays a vital role for sustainability of any development project. Considering this, the study team has thoroughly assessed and identified outstanding issues related to water supply condition of the project area.

The sources of potable water in the project area are developed springs and undeveloped springs. About 95 percent of the respondents in the project area are using these water sources. Here the accessibility of clean water is low and it will be the cause for some water born diseases in the project area. In addition, in the project area, Amitu River is the major source of drinking water for the population and livestock. The other well developed water sources are not available in the project area.

Table 10: Water sources available in the project area

Water sources	Qty	Name	Remark
River- Perennial	2	Amitu and Mentik	
-Seasonal	0		
Developed springs	0		
Undeveloped springs	0		

Source: Tamo kebele agricultural office, 2015

2.10.4 Road and Transport Net work

Availability of adequate road network and transport facilities is the major factors to make the development program effective and sustainable. Considering the level of importance and relevance, the study assessed the status of road access and transportation facility of the project area.

There is no highway asphalt concrete road provides all year round access for the project area. But, specific to the project area, there is a dry weather road that passes through the kebele and joins the project site from Ginager town and Debre Birhan woreda. The following figure shows the road access in the project area.

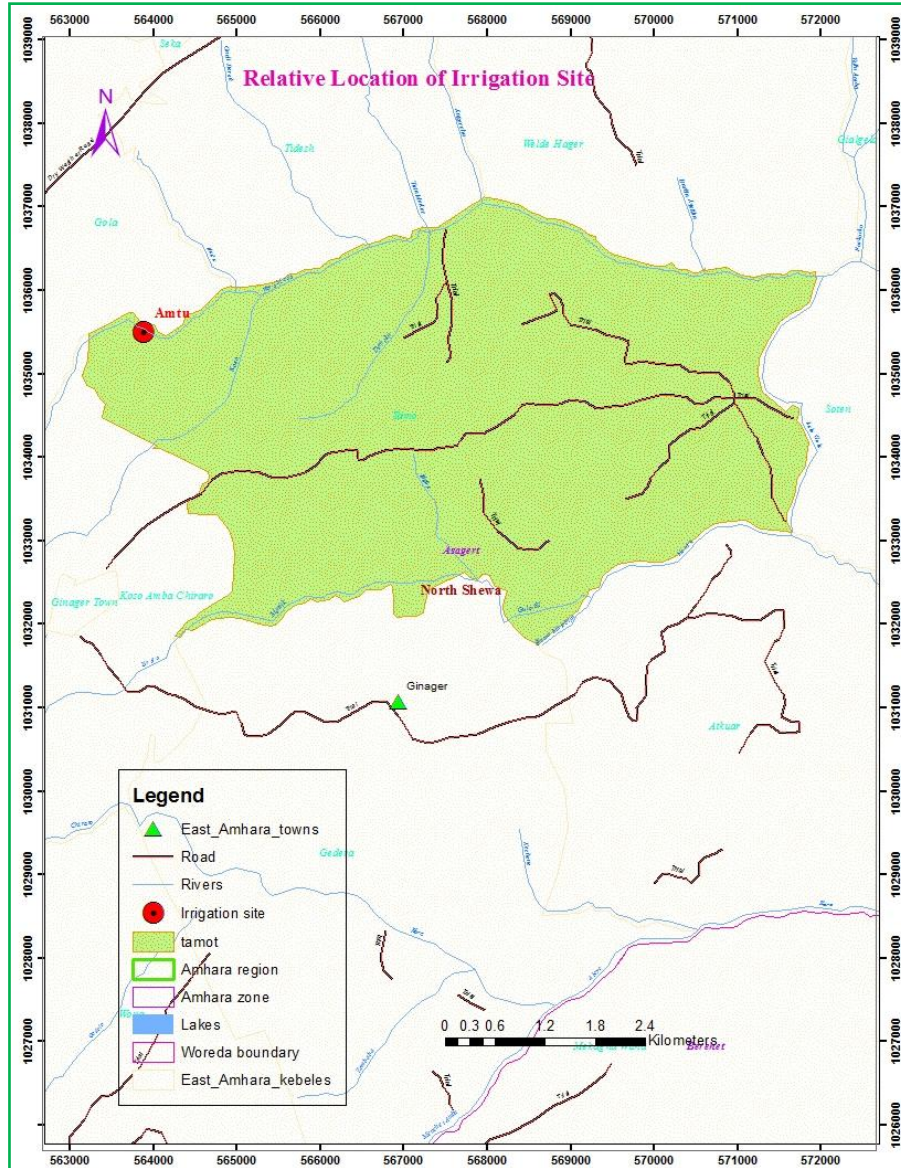


Figure 3: Road access in the project area

2.10.5 Other Institutions

In addition to the above institution, market centers, grain mill, veterinary services and cooperatives are the most to be fulfilled social institutions or services in the rural area.

In regarding to these, grain mill, veterinary services, markets and cooperatives can play decisive role for farmers but they are limited in availability in the project area. They are very important to provide agricultural inputs and agricultural products easily for the society. However residents only can get those types of services in the adjacent kebeles.

In addition to the available social institutions data in the kebele, the numbers of employees who work in governmental organization /health, agriculture, education, administration and other office/ in the kebele are shown in the following table.

Table 11: Number of employees in different governmental institutions

S/No	Institutions	Number of staffs			Remark
		Male	Female	Total	
1	Education	14	22	36	
2	Health	8	7	15	
3	Agriculture	3	2	5	
4	Administration	0	1	1	
5	Land use	1	0	1	
6	Police station	1	0	1	
7	Cooperatives	0	1	1	
8	Others	1	1	2	NGO Employee
	Total	28	34	62	

Source: Tamo Kebele Administrative Office, 2015

Social institutions

Every society organizes its members by institutionalizing norms to insure the transformation of their values to generation. These institutions serve the people to solve their problems, to minimize conflicts and to help each other in the time of cultivation.

“Iddir” is the most existed social institutions in the study area to discuss and solve their common problems mainly when they are in sorrow and conflict. “Wonfel” also used to help each other mainly in the time of cultivation and crop harvest.

2.11 Gender Issue

The increased participation of women in productive income generating activities strengthens economic independence and contributes to self-reliance. In line with country needs, women related results are indicators of programmers and projects relating to generation of employment of women, gender related skills development.

In the study area like most rural part of the country, women are working for long hours. They are involved in child care, feeding the family, animal husbandry and milking cows and supporting agricultural activities like weeding, mowing and harvesting.

With regarded to resource control and access to resource, women have the right to have a resource and the right to use and mobilize that resource. The concerned bodies from kebele and district office give awareness to the people to equalize women with men. Women start to control resources and making decisions on home management and resources.

2.12 Economic Activities

Traditional agriculture (crop and animal rearing) dependent on rainfall is the dominant livelihood strategy of the majority of the population. As the data from kebele administration office mixed farming is the livelihood for the residents. A livelihood strategy in the project area is usually vulnerable to various shocks and low yielding with the ever increasing population. Low income, food insecurity, and incidence of poverty are peculiar characteristics of the livelihood systems reinforced by excessive environmental degradation due to over cultivation, population densities, deforestation, and soil erosion. Unemployment due to lack of arable land and low income due to low yield of crops and animals in general are very common exacerbated by growth of agrarian population from year to year. Low access to inputs, rural credit and other support services, low level of technology adoption, poor access to alternative income and employment opportunities reinforced vulnerability of livelihoods. Combined with environmental degradation, low land and human productivity; and irrigation and high yielding technologies were not developed to support and change livelihood systems from worse to the better. Alternative employment opportunities to support crop farming and household income are not sufficiently developed due to lack of experience in small businesses, adequate rural credit and technical support, as well as inadequate attention given to this important sector.

Yet three major livelihood strategies support the overall livelihoods of the majority of the population in the project area. Crop production, animal rearing and off and/or non-farm activities, all of them traditional, subsistent and low yielding. The nature of these livelihood systems and strategies and the proportion of population subsisting on them are discussed in detail as follows.

2.12.1 Crop Production

Crop production is the main economic activities supporting the lives of the majority of the population. For the majority of the households, the major objective is to support families with annual food requirements, cash expenditures and other social cases. Crop production engaged the largest proportion of the rural labor force and supports livelihoods of almost all rural population. Traditional crop production systems highly integrated with animal production are common.

Crop production is highly dependent on rainfall and highly vulnerable to various natural and manmade risks. Yields are very low due to flooding, crop pests and diseases, low level technology adoption, insufficient extension support services, low level of inputs utilization, poor farming practices and declining land holding sizes. As a result, crop production is mainly subsistence with no or small marketable surplus.

The major crops grown in the study area includes are Teff, faba bean, wheat, sorghum and barley during wet season. Generally, cereals are the dominant crops commonly produced for consumption and for sale; other crops such as onion, carrot, garlic, lentil and sugar cane are mainly produced by using irrigation during dry season for sale as cash incomes and to supplement home consumption. Traditional irrigation practice is common in the study area by using Amitu River through traditional diversion system as shown in the figure below.





Figure 4: Traditional irrigation practice in the study area by using Amitu River

Table 12: Existing cropping pattern and production (rain fed) of Tamo Kebele, 2015

S/N	Crop type	Cropped Area		Productivity	Production
		(ha)	(%)	(qt/ha)	(qt)
1	Teff	194	23	14	2716
2	Faba bean	120	14.2	20	2400
3	Wheat	83	9.8	21	1743
4	Sorghum	304	36	20	6080
5	Barely	143	16.9	35	5005
	Total	844	100		17944

Agricultural Input Utilization

Long history of habitation and cultivation of land, without adequate fertilization and fallow system, has been the major reason for low agricultural productivity that results poverty and food insecurity in the project areas. Traditional cultural practices which have been used by the farm households for centuries have failed with increasing number of population and declining of crop land holding. Fallowing is used by insignificant number of households. Inter cropping and crop rotation is rare as most of the households have inadequate land to spare. Application of organic manure and compost is also limited with declining number of livestock and the use of residues for fuel and animal feed. Thus for the majority of the households in the project areas, commercial

fertilizer and seeds are the major available options to improve both land productivity and household income.

Yet the majority of the households have inadequate access to commercial inputs mainly due to rising prices from year to year. Even improved seeds are not sufficiently available to all households either due to shortage in supply and/or high prices when ever available.

Sometimes compost users are also use chemical fertilizers in small amount. But it is insignificant as compare with compost. The proportion of land under commercial fertilizer is few mainly attributed to high costs of fertilizer. Even if the farmers tolerate the high cost and be ready to use, are not available on time. In the other way as the data from key informants shown increasing prices of fertilizers are also the limiting factor for low level of application of fertilizers.

Thus the volume of production is significantly related to application rates of fertilizer in all crop productions. The major suppliers of fertilizers in the project area are farmers’ cooperatives and Governmental organizations. The use of manure is limited by the declining number of livestock and use of manure for energy source as a fuel.

2.12.2 Livestock Production

The second most important economic activity of the study area is livestock husbandry where cattle production has a significant contribution both as a source of cash and food. In addition to its economic contribution, livestock production is also contributed to crop production by supplying drought power. Out of the total livestock population, 40.73 percents covers cattle, 45.31 percents are shouts (sheep and goat) and the remaining 13.96 percents pack animals.

Table 13: Livestock population in the study area

Livestock type	Number	(%)	Livestock	Number	(%)
Ox	116	16.45	Donkey	78	11.06
Cow	51	7.23	Mule	3	0.43
Calf	5	0.71	Horse	0	0.00
Heifer	10	1.42	Camel	0	0.00
Bull	30	4.26	Chicken	365	
Goat	311	44.11	Tradit/bee hive	32	
Sheep	101	14.33	Modern bee hive	15	

Source: Tamo kebele Agriculture Office, 2015

The livestock sector is less productive compared with crop production as a whole in the study area. This is because of various reasons such as shortage of forage, poor livestock management and poor and insufficient veterinary services at reasonable distance. The sector is not operated in a competitive way to get advantage of the increasing demand both for milk and meat product. Moreover poor and undeveloped market infrastructures make the sector less competitive.

Natural grazing land and crop residues are the major feed sources for majority of the total livestock. Communal grazing is also commonly practiced in the study area.

2.13 Agricultural Marketing

Access to roads and transport facilities, market information, packaging and handling system, method of storage mechanism and input supply network are vital to raise the competitiveness and growth in agricultural sector. A well develop infrastructure and physical market access condition influence the tendency of producers to produce more and increase their income. Besides, improvement in market infrastructure is crucial to ensure the sustainability of any development program.

Like any other areas of the region, farmers of the proposed project area store grain in traditional storage facilities made of wood and mud (locally called *Gotera*). In general as different information confirmed that such type of storage system has a high risk of moisture and pest damage which significantly decrease the quality of products as well their selling prices.

Lack of market information is one of the major constraints in the proposed project area. As discussed with different potential stakeholders including the beneficiaries' and the survey result show that 95 % of producers receive most of their information about the market through their interactions with neighboring and traders. They are unaware of prices in other markets, even those that are in close proximity. Traders often lack information on domestic production, marketable surpluses, stock, etc at all level. They usually get most of their information from brokers and transporters, who know about prices. Besides, the price information available from secondary materials is not available in timely, accurately, and comprehensively. Thus, it is very crucial to conduct a detail study to establish a well-organized market information dissemination network and make the development program sustainable.

Penitential stakeholders including the beneficiaries are seriously point out during the discussion about the market issues. Besides, the cooperative are not strong to bargain the price as they have no adequate knowledge, awareness and information to actively follow up the market condition. The market has also monopolized with a limited number of traders that influence the price.

In general, most of irrigated crops are perishable and bulky which need proper packaging, modern warehousing and transportation system. As the size of irrigable land increases, the need for more efficient market infrastructure and services become more important and urgent. Local markets are small and the demand for irrigated crop is insignificant and in most of the areas it is not part of the daily food menus of the population. This implied the absorption capacity of the local markets and adjacent major urban centers will not accommodate the huge volume of production. Thus, thorough independent market study is necessary and a priority before the development of the irrigation scheme. This is also a core for sustainability, adoption and viability of the proposed project.

2.14 Socioeconomic Constraints and Irrigation Impacts

2.14.1 Perception of Households to Irrigation

Irrigation agriculture is not a recent practice around the project area. Currently there are small-scale traditional irrigation schemes around the project area.

This survey also covered major obstacles and experiences and knowledge of households on small scale irrigation, their perception and need in case the expansion of irrigation will be materialized in the future and the consequences of irrigation on the social and economic settings of the households as perceived by the future beneficiaries. These are important for the sustainability of the project in the future particularly in case the expansion of irrigation.

The importance of small-scale irrigation in crop production is currently increasing with increasing land degradation, declining crop yield, fluctuation of rainfall and above all declining land holding sizes b/c of population pressure. As a result, most of the households need to intensify their current holding to improve their livelihoods and ensure sustainable food crop production.

Almost all households need to practice, improve and expand their current production and area under irrigation. There is a need to improve and expand irrigation development to solve major problems. Poverty driven and shocks seem the major reasons for the majority to practice

irrigation development. In addition, an improvement of wellbeing in households who use irrigation around the project area is another driving force for the development.

Sustainable development and utilization of farmers managed small scale irrigation requires above all the genuine participation of beneficiaries and affected persons. Efficient utilization, sustainable maintenance and operation of schemes, adoption of profitable production systems, should consider the priority needs of the beneficiaries. In this survey, three measures of participation have been used including, willingness of the household to pay for construction, maintenance and operation of irrigation schemes, and the willingness to produce high value /market oriented/ crop to cover the production cost of the project and improve farming income level.

In addition, meeting was undertaken to assess the attitudes of the direct and indirect beneficiaries of the proposed project towards its implementation. About 16 farmers were involved during the meeting to discuss on the implementation of the project issues. Most of them were male household heads and also females participated. All the farmers gave positive ideas towards the realization of the planned project. They further explained to see the planned project realization in the near future. The minute of consultation meeting is attached in the annex of this report.

Table 14: Details of attitudes towards the planned project

s/n	Major Issues presented for discussion	Attitudes of the participants			
		Positive	Negative	Neutral	Total
1	Attitude towards the acceptance planned project	16	0	0	16
2	Attitude towards actively participate /involve in planned project construction	16	0	0	16
3	Attitude to handover after the completion of construction and then to implement as per the plan	16	0	0	16
4	Attitude towards covering maintenance and operating Costs	16	0	0	16
5	Attitude towards establishing water user's association	16	0	0	16

s/n	Major Issues presented for discussion	Attitudes of the participants			
		Positive	Negative	Neutral	Total
6	Attitude towards cultivation of market oriented /high value/ crops	16	0	0	16

Source: community meeting with beneficiaries

In summary, there are encouraging needs for the expansion of irrigation agriculture among the majority of the households in the project area. In view of increasing population pressure and declining of land holding size, environmental degradation and food insecurity, poverty and destitutions in the project area, the development and expansion of farmer managed small-scale irrigation projects are a prior development strategy to improve livelihoods of the rural poor people. Participation of the community in all stages of the project however determines the sustainability of the irrigation projects to achieve the planned objectives. Ownership of the project must be ensured and the farmers themselves must handle management and administrative issues in collaboration with different stakeholders. To bring genuine participation on the other hand, farmers have to be trained to master the principles and practices of irrigation agriculture development. Training and capacity building must be objective, need based and practical. Empowerment of the user communities is therefore the prime element to ensure sustainability and ownership of the project. Irrigation projects must be supported by efficient market infrastructure and support services such as rural credit, extension services, transportation and communication facilities, more affordable energy sources, ware housing and other links for the production and distribution of agricultural products. These services must be available in parallel with the actual development of irrigation scheme to enhance the adoption and implementation of the most productive and profitable irrigation agriculture.



Figure 5: Community consultation session in Tamo kebele

2.14.2 Problems and Socioeconomic Constraints

A. Repeated Flooding

Most parts of the project area suffer from recurrent flooding caused by rivers and others overtopping their banks. Thus, unless some solutions, such as construction of conservation structures on the riverbanks are considered and implemented, flooding will remain one of the major threats to achieve the expected benefits from the project and will also increase the burdens and costs for rehabilitating the irrigation structures.

B. Level of Skill to Adopt New Technologies

It is known that most of the target population has a low level of education. This will require a two-pronged approach: on the one hand, the project must be tailored to suit the capacity of the target community and, on the other hand, rigorous efforts will have to be made to train and educate the community. In the future, wide-sweeping extension and demonstration works and pilot trials should be carried out before embarking on implementation of the entire work.

C. Infrastructures and Marketing Problems

Development of infrastructure, such as roads, safe drinking water supply, schools, power supply and communication facilities are critically at low level in PCA. As these basic needs are not meet, the community will lack the capacity to adopt new technologies of the kind proposed in the irrigation scheme. Sick people who are not able to get health treatment within their locality cannot be expected to participate wholeheartedly in the implementation of development-oriented projects.

Lack of road infrastructure and marketing facilities are serious problems, the community has already identified these as critical challenges to their well being and livelihood. The marketing problem is related mainly to the lack of access roads and the absence of transportation vehicles both for human and freight (for farm inputs and outputs). The community members reported that they are constrained with respect to the use of new technologies due to their unavailability and high prices, low levels of demand due to high price and price fluctuations for their products. This calls for more serious attention for the future agricultural development within the project area.

2.14.3 Potential Impacts of the Proposed Project

2.14.3.1 Potential Positive Impacts

Increasing production and productivity, then improving living standards of the target population is the most expected social and economic positive impacts. The implementation of the proposed irrigation project is expected to bring several economic and social benefits particularly to the local population. These positive impacts will include:

- It will enable the beneficiary farmers to produce a large quantity and/or more valuable crops i.e.to increase production and diversify the cropping pattern and crop varieties or shifting to more valuable crops;
- It will give the opportunity to increase yields per unit area of land
- It will help the local farmers to be surplus producers
- It will reduce the risk of crop failure due to flood damage and unexpected rainfall interruption
- It will help to improve the living standards of the local population including health standards due to improved income levels
- It will provide employment opportunity for the local population and

- It will contribute for the economic development of the country.

2.14.3.2 Potential Negative Impacts

On the other hand, land use changes (for example communal grazing lands will be distributed for youths to cultivate crops), an increased pressure on land than ever (due to increased livestock and human population) and prevalence of water related diseases are most expected social and economic negative impacts on the proposed small scale irrigation scheme development.

Table 15: Some adverse impacts of the project & mitigation measures

No	Adverse Impacts	Proposed mitigation measures
1	High cost of initial installation of the project including road construction and power energy supply	Access Financial and credit systems
2	Technical limitations due to lack of appropriate trainings for implementers and supervisors in charge of the pressurized surface irrigation water system since a higher level of design, management and maintenance is required.	Capacity building programs tailored as per the needs of the project
3	<p>Increased prices of social services (water, electricity, etc.).</p> <p>Exclusion of specific groups from accessing irrigated land can bring in conflicts unless equity and fairness is promoted</p> <p>Population growth encouraged by irrigation scheme allocation criteria favouring large families.</p> <p>Increase the population due to migrants attracted by new economic</p>	Townships within the project area and incorporate the needs and requirements of the population in terms of accommodating the needs for social services and facilities.

No	Adverse Impacts	Proposed mitigation measures
	opportunities created by the project and it results the requirement of social services and facilities.	
4	Restriction of free livestock grazing	Livestock production should be designed in such a way that it becomes economically meaningful by reducing stock number and enhancing stock quality and in such a way that it can co-exist and benefit from the irrigation scheme through appropriate zoning and the utilization of biomass that can be generated from the system.
5	Conflicts on water access and rights	Institutional setup and implementation mechanisms recommended by the EIA study of the project.
6	The feasibility of irrigation schemes can be affected by agricultural input prices and markets instability.	The problem deserves adequate and appropriate attention since some negative signs have already been witnessed in relation to marketing of products with respect to the producers of the already developed irrigation schemes in and around the area. As such production has to be designed in such a way that it is market driven as appropriate to the wellbeing of the communities.
7	No progress can be made without having an appropriate institution designed and developed to fit to the needs and requirements of the project.	The success of the project will depend on whether or not the project adequately considers the development of institutions, water user organisations and other types of co-ordination between the local population (users) and the gov't to achieve environmentally sound project.

3. PROPOSED ORGANIZATIONAL STRUCTURE OF THE PROJECT

This project needs to be carefully implemented in a strong integration of all stake holders with real commitment for the achievement of the commonly shared goal and special organizational framework with specific roles and responsibilities pertinent to each.

The implementation would be closely and effectively managed both administratively and technically because massive, intensive, purposeful and properly integrated joint efforts are critically demanded if the results desired to be realized.

The woreda agricultural office and kebele level administrative councils are expected to commit to mobilize the community and support the Irrigation Users Cooperative (IUC) and provide administrative supports in the course of the development. In this regard, in the command area, an Irrigation User Cooperative (IUC) will be formally organized by the Woreda Cooperative promotion office.

Bureau of water resource development on the other hand will manage the financial and major maintenance aspects of the project development. The Woreda agricultural office, in collaboration with Woreda cooperative promotion and organization office and Amhara credit and saving institution (ACSI) will access agricultural inputs (on credit or on cash basis) and provide a routine extension services for quality production.

With regard to organizational modality of the target groups, they need to be organized in to associations that can be called “Irrigation Users Cooperative” in which both private and communal owner ship and responsibilities are simultaneously involved. Every member grows the selected varieties of crops on its own plots in fact, according to the technical recommendations and rated of applications recommended by the extension service with close follow up and monitoring. However, scheme management and water utilization issues are administered by the IUC. The association would then be organized in such a way that there are” Block leaders” based on primary and secondary canals. The farmers laid in one primary and secondary canal will have one “Block leader” (leader) who are responsible for managing his/her member .Therefore, the number of ” Block leader” are depending up on the number of primary and secondary canals (one

“Block leader” per primary or secondary canal). “Block leaders” will be accountable for the chairman of the association. The association will have its own leadership (chairman, Finance and administration service, credit service, input and marketing committee) and will produce workable bi-laws to which they stick in the course of the development. The roles and responsibilities of each theme are presented in “Irrigation Cooperative Guideline” which is prepared by ANRS cooperative promotion and organization agency in 2003 E.C.

3.1 Organizational Structure

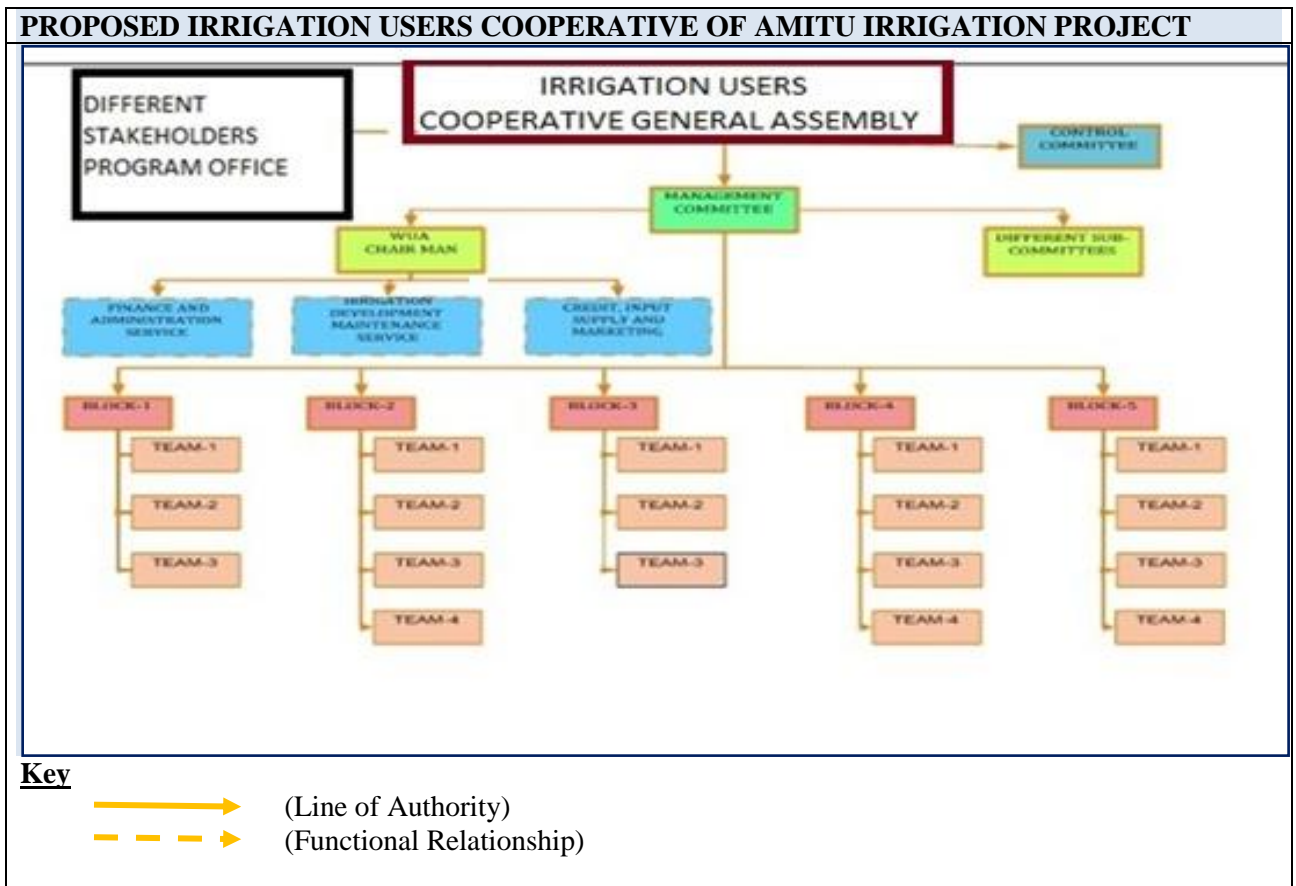


Figure 6: Proposed organizational structure of IUC for the project

3.2 Roles and Responsibilities

a) Member of the association

- ≡ Strictly follow technical recommendations of the extension advice regarding inputs application and improve cultural practices involving in the process of the production.
- ≡ Contribute labor, material and where possible financial resources for scheme construction, and other activities

- ≡ Timely replay loans extended to him/her for input and other items required by the development
- ≡ Responsible to participate in the scheme management either in physical work, Material or cash contribution as determined by the association.
- ≡ Respect the bi-laws of the “water father “and association.
- ≡ Respect the decisions made by the” water father” and association.
- ≡ Strictly follow-up the watering schedule set by the group in watering their own plots.
- ≡ Readiness for joint liability and to be for the group as a whole in cases of individual’s frailer.

b) The Irrigation Users Cooperative

The association as a front line focal owner for jointly performing the implementation tasks will have the following joint responsibilities.

- ≡ Responsible for the scheme maintenance and overall management of the system.
- ≡ Prepare watering schedule in collaboration with technical staff and manages its effectiveness.
- ≡ Takes the repayment responsibility of the loan extended to its member
- ≡ Control each member to adherence to extension advice.
- ≡ Decides mode of participation and mobilization of members for scheme maintenance and other tasks related to the scheme and the development.
- ≡ Determines roles and responsibilities of chairman, secretary and treasurer.

c) Woreda agricultural development office

- ≡ Assign competent DAs with adequate experience regarding the intended development.
- ≡ Assign extension supervisor at woreda level for close supervision and follow up of the extension inputs to the proposed development.
- ≡ Undertake production demonstrations at the site so that the farmers could grasp know-how on how to produce irrigated crops in improved and scientific production techniques.
- ≡ Assesses potential markets for the production and formulate marketing procedures and system conducive for the group.
- ≡ Record data on productivity, marketing and other basic information.

- ≡ Provide other technical assistances required for the irrigation development.
- d) Bureau of water resource development**
 - ≡ Undertake the scheme construction
 - ≡ Give initial training on how to operate the scheme.
 - ≡ Assistance on major maintenance.
- e) Woreda administrative council**
 - ≡ Provides administrative support in all the implementation processes.
 - ≡ Mobilize the community for both construction and production phases timely.
 - ≡ Closely controls kebele council fulfillment of their responsibility regarding the development.
 - ≡ Coordinates woreda level line offices relevant to the work to insure full participation.
- f) Kebele administrative council**
 - ≡ Mobilizes the community for the construction and development phases assist the WUA in managing the project.
 - ≡ Solves conflicts that may confront in the process of effectuating the development.
 - ≡ Create supportive administrative atmosphere for the technical staffs involving in the work.
- g) Woreda cooperative promotion and organization office**
 - ≡ Assist the farmers in the formation of WUA.
 - ≡ Legalize, monitor and supervise the association.
 - ≡ Helping the association in providing agricultural inputs on time.
- h) Woreda branch of Amhara credit and saving institution**
 - ≡ provide credit service for the farmers
 - ≡ Develop the saving habit of the farmers through training.
 - ≡ Monitoring the farmers in order to pay back their loans on time.

4. CONCLUSION AND RECOMMENDATION

4.1 Conclusion

The socio-economic condition of the project area is characterized by high population growth and pressure, subsistence farming economy, low diversification of income and employment, high degree of poverty incidence and food insecurity, degradation and deteriorating livelihoods. In recent years, though many efforts are made to improve livelihoods, significant number of the rural population still suffers from multiple socio-economic problems.

Besides, flooding, erratic and unpredictable rainfall pattern is the most important cause of vulnerability for the majority of the population. Increasing number of rural population has also resulted in land fragmentation and shortage. As a result, the majority of the households owned very small plot of land. The agricultural sector suffers from critical shortage of arable land, degradation and soil fertility decline, unrewarding traditional farm practices, and low level of input utilization. Furthermore storms, crop pests, weeds and various diseases devastated significant volume of production in each year. Lack of diversification of cropping pattern also makes the cropping system more vulnerable to risks.

Livestock production is also subsistence and mainly for traction power and very small scale milk and meat production. Rapidly declining individual and communal grazing land, animal diseases and pests, poor animal husbandry practices are some of the problems affecting the livestock sector. Non-farm activities are also not well developed to support the livelihood of the poor people. However in recent years, with increasing poverty and destitutions, a number of households started to engage in various non-agricultural activities. Yet, income from this sector is low due to lack of competitive power, access to credit, lack of technical support, and weak entrepreneurship. Due to vulnerability of the agricultural sector, farm income is also low and predominantly depended on the volume of annual production and safety net programs.

Access to basic services in recent years has been on the way of improvement. Still most of the basic service facilities suffer from critical capacity gaps, unequal distribution of benefits, weak infrastructure, and poor quality facilities and poor service provisions. As a result, prevalence of diseases particularly those related to water born diseases as well as poor environmental and

personal hygiene are commonly affecting significant number of the population. Opportunities to education are better yet poverty related problems still forced significant number of children to stay away from the education system. Other infrastructures such as water supply, access roads, marketing, communications, veterinary and extension services need further improvement for effective and sustainable socio-economic development.

Therefore; this small scale irrigation development is a master key for at least minimizing those mentioned agricultural related problems. That may also be the reason why farmers are eager to see the project implementation as soon as possible in the short time.

4.2 Recommendation

The improvement of livelihoods of the population in the project areas depends on the sustainability and effectiveness of all development interventions. These interventions should be integrated and their impact must be multidimensional to solve old aged and deep rooted socio-economic problems. The agricultural sector must be improved in order to improve livelihoods. The sector often suffers from shortage of moisture, land degradation, fragmentation and lack of diversification. Without adequate moisture, sustainable crop production is nearly impossible. It needs vital transformation from rain fed to irrigated agriculture. Such transformation believed to solve deep rooted agricultural problems such as lack of diversification, vulnerability to shocks, low input, low yield and lack of sustainability.

The irrigation systems should also integrate with modern intensive livestock production (improved breeds, market infrastructures, and improved forage production), nonfarm activities (small scale processing, marketing and distribution, trade, etc), infrastructure development and appropriate rural institutions, rural credit and extension systems. Irrigation will trigger demand for various goods and services which on the other hand leads to diversification of livelihoods, employment and income and in general the transformation of traditional agriculture into modern monetized sector with high productivity and resilience. Thus,

- All the extension services (such as provision of inputs on time, technical support, provision of training and strengthening project organization (WUA)) will have to be undertaken as per the plan to achieve the predicted benefits of the project.

- Restless efforts of the kebele development agents will also highly require for successfully coordinating and implementing the whole plan.
- Provision of electric power energy supply is a mandatory to implement the project effectively.

5. APPENDICES

5.1 Household Survey questionnaire

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	የ ማጠቃለያ ማቁ: የ ፕሮጀክቱ ስም..... ማኅኛ ልማት ፕሮጀክት ወረዳ: ቀበሌ: ጎጥ:																												
1. የቤተሰብ ሁኔታ	1.1. የአባወራ/እማወራ ስም 1.2. ልጆች: ወንድ=1 ሴት=2 1.3. እድሜ 1.4. ብሄር: አማራ=1 አገው=2 ትግራይ=3 ኦሮሞ=4 ሌላ-----5 1.5. ሃይማኖት: ኦርቶዶክስ ክርስቲያን=1 ፕሮቴስታንት=2 እስልምና=3 1.6. የጋብቻ ሁኔታ: ያለገባ/ች (ላጣ)=1 ባለትዳር/ያገባ/ች=2 የፈታ/ች=3 የትዳር አጋር በሞት የተለየ/እማገለት=4 1.7. ዋና ማዳደሪያ ስራ: ጥምር ግብርና/ሰብል ልማትና እንስሳት እርባታ=1 እንስሳት እርባታ=2 ሜት ማኅጠሞድ=3 ሜት ማኅራዮት=4 ንግድ=5 የእጅ ጥበብ=6 ሌላ-----7 1.8. ሁለተኛ ማዳደሪያ ስራ: ጥምር ግብርና/ሰብል ልማትና እንስሳት እርባታ=1 እንስሳት እርባታ=2 ሜት ማኅጠሞድ=3 ንግድ=4 የእጅ ጥበብ ስራ=5 ሌላ-----6 1.9. የቤተሰብ አባላት ብዛትና የእድሜ ስብጥር (አባወራና እማወራን ይጨምሩል) <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">ተ/ቁ</th> <th rowspan="2">የእድሜ ስብጥር</th> <th colspan="3">የቤተሰብ አባላት ብዛት</th> </tr> <tr> <th>ወንድ</th> <th>ሴት</th> <th>ድምር</th> </tr> </thead> <tbody> <tr> <td>1.9.1</td> <td>ከ 0-14 ዓመት</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.9.2</td> <td>ከ 15-64 ዓመት</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.9.3</td> <td>ከ 64 ዓመት በላይ</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.9.4</td> <td>ድምር</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	ተ/ቁ	የእድሜ ስብጥር	የቤተሰብ አባላት ብዛት			ወንድ	ሴት	ድምር	1.9.1	ከ 0-14 ዓመት				1.9.2	ከ 15-64 ዓመት				1.9.3	ከ 64 ዓመት በላይ				1.9.4	ድምር			
ተ/ቁ	የእድሜ ስብጥር			የቤተሰብ አባላት ብዛት																									
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	1.10. የት/ት ደረጃ: ያልተማረ =1 የሀይማኖት ት/ት=2 ማኅበብና ማጠቃለያ ማቆ =2 ከ1-4ኛ ክፍል=3 ከ5-8ኛ ክፍል=4 ከ9-12ኛ ክፍል=5 ከፍተኛ ትምህርት=6 ሌላ-----7 1.11. ያለዎት የቤት ዓይነት: ሳርቤት ብቻ=1 ቆርቆሮቤት ብቻ=2 ሁለቱም=3 1.12. እርስዎ እዚህ ቦታ ተወልደው አድገዋል? አዎ=1 የሌላ=2 1.13. ማለት የለም ለምን ያህል ጊዜ እዚህ ቦታ ኖረዎልዎት? ከ 10 ዓመት በታች=1 ከ 10 እስከ 20 ዓመት=2 ከ 20 ዓመት በላይ=3 1.14. ወደዚህ ቦታ የሚጠጡት ዋና ውጭካን ያት ምን ድን ነው? ስራ ፍለጋ=1 የእርሻ ሜት ፍለጋ=2 በድርቅ=3 በሰፈራ=4 በጋብቻ=5 በሌላ-----6 1.15. ከተለያዩ የገቢ ምንጮች ጋር የሚያደርጉት የገቢ ማኅን ግምት በብር (ከጥር/2006-ታህሳስ/2007) <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>ተ/ቁ</th> <th>የገቢ ምንጭ</th> <th>ዓመታዊ ገቢ በብር</th> </tr> </thead> <tbody> <tr> <td>1.15.1.</td> <td>ከሰብል ምርት (የተገኘ ምርት × በምርት ዋጋ)</td> <td></td> </tr> <tr> <td>1.15.2.</td> <td>ከእንስሳት እርባታ ሽያጭ</td> <td></td> </tr> </tbody> </table>	ተ/ቁ	የገቢ ምንጭ	ዓመታዊ ገቢ በብር	1.15.1.	ከሰብል ምርት (የተገኘ ምርት × በምርት ዋጋ)		1.15.2.	ከእንስሳት እርባታ ሽያጭ																				
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ርእስ	ማጠቃለያ																																																						
	<p>5.2.11. በአብዛኛው እርሻ ስራ የሚጠቀሙት የሰው-ጉልበት የቱነው? እኔና ቤተሰቤ=1 ተቀጣሪ=2 ሁለቱንም=3</p>																																																						
<p>5.3. እንስሳት እርባታ</p>	<p>5.3.1. ያለዎት የቤት እንስሳት ብዛት በቁጥር</p> <table border="1" data-bbox="370 359 1516 625"> <thead> <tr> <th>ተ/ቁ</th> <th>የእንስሳት ዓይነት</th> <th>ብዛት</th> <th>ተ/ቁ</th> <th>የእንስሳት ዓይነት</th> <th>ብዛት</th> <th>ተ/ቁ</th> <th>የእንስሳት ዓይነት</th> <th>ብዛት</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>በሬ</td> <td></td> <td>6</td> <td>በግ</td> <td></td> <td>11</td> <td>ዶሮ</td> <td></td> </tr> <tr> <td>2</td> <td>ለም</td> <td></td> <td>7</td> <td>ፍየል</td> <td></td> <td>12</td> <td>የንብቀፎ ብዛት (በህላዊ)</td> <td></td> </tr> <tr> <td>3</td> <td>ጊደር</td> <td></td> <td>8</td> <td>አህያ</td> <td></td> <td>13</td> <td>የንብቀፎ ብዛት (ዘመናዊ)</td> <td></td> </tr> <tr> <td>4</td> <td>ወይፈን</td> <td></td> <td>9</td> <td>ፈረስ</td> <td></td> <td>14</td> <td>ግማላ</td> <td></td> </tr> <tr> <td>5</td> <td>ጥጃ</td> <td></td> <td>10</td> <td>በቅሎ</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>5.3.2. በእንስሳት እርባታ ዋነኛው ችግር የቱነው? የሙያ እጥረት=1 የእንስሳት በሽታ=2 የውሃ እጥረት=3</p> <p>5.3.3. በአብዛኛው የእንስሳት ዋነኛ የሙያ ምን ጭቶ ቱነው? የጋራ የግጥሽ ማሬት=1 የግል የግጥሽ ማሬት =2 የሰብል ተረፈ ምርት =3 ሌላ -----=4</p>	ተ/ቁ	የእንስሳት ዓይነት	ብዛት	ተ/ቁ	የእንስሳት ዓይነት	ብዛት	ተ/ቁ	የእንስሳት ዓይነት	ብዛት	1	በሬ		6	በግ		11	ዶሮ		2	ለም		7	ፍየል		12	የንብቀፎ ብዛት (በህላዊ)		3	ጊደር		8	አህያ		13	የንብቀፎ ብዛት (ዘመናዊ)		4	ወይፈን		9	ፈረስ		14	ግማላ		5	ጥጃ		10	በቅሎ				
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5	ጥጃ		10	በቅሎ																																																			
<p>6. ግብይት</p>	<p>6.1. ስለገበያ ተኮር የሰብል ምርት አሟረት ግንዛቤ አለዎት? አዎ=1 የለም=2</p> <p>6.2. የራስዎ የሆነ የሜዳ ዝቅጠት (የጋማከብት) አለዎት? አዎ=1 የለም=2</p> <p>6.3. ማለትም አዎ ከሆነ የትኛው የሜዳ ዝቅጠት አለዎት? ግማላ=1 አህያ=2 ፈረስ=3 በቅሎ=4</p> <p>6.4. በአብዛኛው የሚጠቀሙት የገበያ ሚረጃ የሚገኙት ጉዳዮች የቱነው? በስልክ=1 በየወቅቱ በሚጠቀሙት የጋማከብት ገርገር=2 በጋራ=3 በሬድዮ=4 በደላላ=5 ከጎረቤቶች ወይም ሌሎች ሰው በሚጠቀሙት ሚረጃ=6 ገበያ ሄዶ ማየት=7 ሌላ -----=8</p> <p>6.5. የምርት ግብይት ችግር ገጥሞት ያወቃል? አዎ=1 የለም=2</p> <p>6.6. የትኛው የገበያ ችግር በስፋት ተከስቶ ነበር? የሰብል ዋጋ ማሳደግ/የሚጠቀሙት ገበያ ፍላጎት አጠቃቀም ማሳደግ/የገበያ ፍላጎት ማሳደግ=2 የምርት ማጠቃለያ/የምርት ማጠቃለያ=3 የምርት ጥራት ጉዳይ=4 ሌላ -----=5</p> <p>6.7. የግብርና ግብዓት በአብዛኛው ከየት ያገኛሉ? ከሚጠቀሙት=1 ከግል አቅራቢዎች=2 ከሙያዎች=3</p> <p>6.8. የእርሻ ወጠቻ ምርት ዎችን በሽያጭ ዜላ የትኛው ድርጅት በብዛት ይሸጣሉ? ሙያዎች/የገበያ ድርጅቶች=1 ለህ/ስ/ሚጠቀሙት=2 ለደላሎች=3 ለጅምላ ነገ ዳዎች=4 ለሽርቻሮ ነገ ዳዎች=5 ለግል ፍጆታ ተጠቃሚዎች=6 ሌላ -----=7</p>																																																						
<p>7. የገበያ ገንዘብ ተቋማት</p>	<p>7.1. ባለፈው አመት ብድር ወስደው ነበር? አዎ=1 የለም=2</p> <p>7.2. ብድር የወሰዱ ከሆነ ከየት ወሰዱ? ከአብቁተ=1 ከባንክ=2 ከሁለገብ ሚጠቀሙት=3 ከሙያዎች ሚጠቀሙት=4 ከገንዘብ ተቋማት ሚጠቀሙት=5 ከእቅብ=6 ከሌላ -----=6</p> <p>7.3. ለጥያቄ 7.1 ማለትም አዎ ከሆነ ባለፈው/በዚህ ዓመት ምን ያህል ብር ተበደሩ? ብር -----</p> <p>7.4. ለጥያቄ 7.1 ማለትም አዎ ከሆነ በብድር የወሰዱትን ገንዘብ በይበልጥ ለምን አገልግሎት አዎሉት? ለሙያዎች ግብይት=1 ለምርት ጥራት ግብይት=2 ለእንስሳት ማድለብ=3 ለቤት ወስጥ ፍጆታ ግብይት=4 ሌላ -----=5</p> <p>7.5. ለጥያቄ 7.1 ማለትም «የለም» ከሆነ የብድር ተጠቃሚ እንዳይሆኑ ያደረገዎት ዋና ዋና ግብዓት የቱነው? ወለድ ከፍተኛ ማህንደስት=1 ብድር እንደሚገኝ ሚረጃ ስላል ነበረዎት=2 አብይ ተበዳሪ ቡድን ስለሆነ=3 ለማጠቃለያ ፍላጎት ስለሌለዎት=4 ሌላ -----=5</p> <p>7.6. ለጥያቄ 7.1 ማለትም «የለም» ከሆነ ለግብርና ስራ የሚያስፈልጉ ግብዓቶችን እንዴት ማሟላት ችሉ? ከሌሎች እንስሳት ሀብት በማሻገር=1 ከዘመናዊ ከጓደኛ በማጠቃለያ=2</p>																																																						

5.2 Community consultation guiding questions, reflections and participants' list

በ ----- ወረዳ በ ----- ቀበሌ የ ----- ወንዝ የ መከተል ፕሮጀክት

የ ማህበረሰብ ወይይት ቃለ ጉባዔ

የ ስብሰባ ቀን: -----/-----/2007 ዓ.ም.

የ ስብሰባ ሰዓት: -----

የ ስብሰባ ቦታ: -----

የ ስብሰባ ተሳታፊዎች: የ ----- ቀበሌ ነዋሪዎች ሲሆኑ ብዛት በቁጥር ወንድ: ----- ሴት: ----- ድምር: -----

የ ስብሰባ ውሳኔ ጀንዳዎች:

1ኛ/ የ -----ን ወንዝ በመገደብ የ ታቀደውን የ መከተል ፕሮጀክት ለ አካባቢው ማህበረሰብ ምን ያህል ጠቀሜታ ይኖረዋል ብለን ስንገባ ምን ያህል ሆኗል?

2ኛ/ ይህንን የ መከተል ፕሮጀክት ዘላቂ ለማድረግ የ አካባቢው ማህበረሰብ ተሳትፎ (አስተዋፅኦ) ምን ያህል ነው?

3ኛ/ ወንዙን በመገደብ ወይም ለ መከተል ፕሮጀክት በመስራት የ መከተል ፕሮጀክት ማድረግ ግድቡ በማይዘውብ ታ የህብረተሰቡ ትብብርና ፈቃደኝነት ምን ያህል ነው?

4ኛ/ በቀጣይ በሚገኘው የ መከተል ፕሮጀክት አድታር ተጠቅሞች ሁንባ በይዘት የሆኑትን ሰብሎች ለማግኘት ምን ያህል ዝግጁ ናችሁ?

5ኛ/ የ መከተል ፕሮጀክት በሚገኘው ወቅት ለከሰቱ የ ማቆላላት ስጋቶች ወይም አሉታዊ ተፅዕኖዎች ምን ምን ሊሆኑ ይችላሉ?

Appendix 3: Expected beneficiaries lists

ጠቅላይ ልማት ሚኒስቴር ግብርና ጉዳይ ሚኒስቴር የአገልግሎት ማስገኛ ስልጠና (4 ጥምድ=1ኛ/ር)

ተ/ቁ	የአገልግሎት ስም	የታ	የደብዳቤ መጠን በጥምድ	ተ/ቁ	የአገልግሎት ስም	የታ	የደብዳቤ መጠን በጥምድ
1	አብይ ለገሰ	10	0.25	31	ደብዳቤ ገቢ	10	0.75
2	ወርቅ ደብዳቤ	10	2.5	32	ደብዳቤ ማስገኛ	10	0.75
3	አብይ ለገሰ	10	0.25	33	ደብዳቤ ገቢ	10	0.25
4	ደብዳቤ ገቢ	10	0.5	34	ደብዳቤ ገቢ	"	0.5
5	ደብዳቤ ገቢ	"	1.25	35	ደብዳቤ ገቢ	"	2.25
6	ደብዳቤ ገቢ	"	0.25	36	ደብዳቤ ገቢ	"	0.5
7	ደብዳቤ ገቢ	"	0.25	37	ደብዳቤ ገቢ	"	0.75
8	ደብዳቤ ገቢ	10	0.5	38	ደብዳቤ ገቢ	"	0.75
9	ደብዳቤ ገቢ	10	2.25		ደብዳቤ ገቢ		
10	ደብዳቤ ገቢ	"	0.5	1	ደብዳቤ ገቢ	10	2
11	ደብዳቤ ገቢ	"	2	2	ደብዳቤ ገቢ	"	1.5
12	ደብዳቤ ገቢ	"	2	3	ደብዳቤ ገቢ	"	2
13	ደብዳቤ ገቢ	"	2	4	ደብዳቤ ገቢ	"	2
14	ደብዳቤ ገቢ	"	0.125	5	ደብዳቤ ገቢ	"	2.5
15	ደብዳቤ ገቢ	"	0.125	6	ደብዳቤ ገቢ	10	0.5
16	ደብዳቤ ገቢ	"	2.5	7	ደብዳቤ ገቢ	10	2.5
17	ደብዳቤ ገቢ	"	0.5	8	ደብዳቤ ገቢ	10	2.5
18	ደብዳቤ ገቢ	10	2.5	9	ደብዳቤ ገቢ	"	2.5
19	ደብዳቤ ገቢ	10	0.75	10	ደብዳቤ ገቢ	"	0.5
20	ደብዳቤ ገቢ	"	0.75	11	ደብዳቤ ገቢ	"	0.5
21	ደብዳቤ ገቢ	10	0.75	12	ደብዳቤ ገቢ	10	2.5
22	ደብዳቤ ገቢ	10	0.75	13	ደብዳቤ ገቢ	"	0.5
23	ደብዳቤ ገቢ	"	0.5	14	ደብዳቤ ገቢ	10	0.25
24	ደብዳቤ ገቢ	10	0.25	15	ደብዳቤ ገቢ	"	2.5
25	ደብዳቤ ገቢ	"	0.75	16	ደብዳቤ ገቢ	"	2.5
26	ደብዳቤ ገቢ	"	0.75	17	ደብዳቤ ገቢ	"	2.5
27	ደብዳቤ ገቢ	"	0.5	18	ደብዳቤ ገቢ	"	2.5
28	ደብዳቤ ገቢ	"	2.25	19	ደብዳቤ ገቢ	"	0.5
29	ደብዳቤ ገቢ	"	2.5	20	ደብዳቤ ገቢ	10	0.5
30	ደብዳቤ ገቢ	"	0.5	21	ደብዳቤ ገቢ	10	2.5

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ገጽ 7
 መሰሪ ፕሮጀክት ውስጥ የመሬት ይዘት ያላቸው አካላት ዝርዝር (4 ጥማድ=1ሃ/ር)

ተ/ቁ	የአካል ስም	የይዘት መጠን በጥማድ	ተ/ቁ	የአካል ስም	የይዘት መጠን በጥማድ
1	የአካል ስም	2.5	7	የአካል ስም	2.5
2	የአካል ስም	2.5	8	የአካል ስም	0.5
3	የአካል ስም	9.5	9	የአካል ስም	0.5
4	የአካል ስም	0.5	10	የአካል ስም	0.5
5	የአካል ስም	0.5	11	የአካል ስም	0.5
6	የአካል ስም	2.5	12	የአካል ስም	0.25
7	የአካል ስም	2.5	13	የአካል ስም	0.5
8	የአካል ስም	2.5	14	የአካል ስም	0.25
9	የአካል ስም	2.5	15	የአካል ስም	0.25
10	የአካል ስም	2.5	16	የአካል ስም	0.125
11	የአካል ስም	2.5	17	የአካል ስም	2.5
12	የአካል ስም	2.5	18	የአካል ስም	0.5
13	የአካል ስም	0.5	19	የአካል ስም	0.5
14	የአካል ስም	2.5	20	የአካል ስም	0.5
15	የአካል ስም	2.5	21	የአካል ስም	0.5
16	የአካል ስም	2.5	22	የአካል ስም	0.5
17	የአካል ስም	2.5	23	የአካል ስም	0.5
18	የአካል ስም	2.5	24	የአካል ስም	2.5
19	የአካል ስም	2.5	25	የአካል ስም	0.5
20	የአካል ስም	2.5	26	የአካል ስም	2.5
21	የአካል ስም	0.25	27	የአካል ስም	0.5
22	የአካል ስም	0.25	28	የአካል ስም	2.5
23	የአካል ስም	0.5	29	የአካል ስም	0.5
24	የአካል ስም	0.5	30	የአካል ስም	2.5
25	የአካል ስም	2.5	31	የአካል ስም	2.5
26	የአካል ስም	2.5	32	የአካል ስም	2.5
27	የአካል ስም	2.5	33	የአካል ስም	0.25
28	የአካል ስም	0.125	34	የአካል ስም	0.5

14.03125

የገጽ 15 መስኖ ፕሮጀክት ውስጥ የመሬት ይዘት ያላቸው አ/አደሮች ዝርዝር (4 ፕላን=1ህ/ር)

ተ/ቁ	የአ/አደሩ ስም	የታ	የይዘት መጠን በፕላን	ተ/ቁ	የአ/አደሩ ስም	የታ	የይዘት መጠን በፕላን
15	አርጋሪ አይ	ፊ	0.5				
16	አይገጽ ደገገ	"	2				
17	ተራራ ለቀጠ	"	2.5				
18	ሀ/20002ኛ መከተ	"	2.5				
19	ዛገጠ መገንገ	ከ	0.5				
20	አይተ አይገገ	"	0.5				

Survey on Socioeconomic Data for Irrigation Development Projects

ገጽ 28/5/19

ጥብብ 28/5/19

የጥራት ደረጃ ለማረጋገጥ የሚያገለግል ነው

ተ.ቁ	ስም	ጾታ	የባለ	ስም	ፊርማ
1	ቀለ ገሰገሰ	ወ	ታላቅ	ሁሉ	ቀለ ገሰገሰ
2	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
3	ሁሉ ገሰገሰ	ወ	ሁሉ	ሁሉ	ሁሉ ገሰገሰ
4	ቀለ ገሰገሰ	ወ	ሁሉ	ሁሉ	ቀለ ገሰገሰ
5	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
6	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
7	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
8	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
9	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
10	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
11	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
12	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
13	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
14	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
15	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ
16	ገሰገሰ ገሰገሰ	ወ	ሁሉ	ሁሉ	ገሰገሰ

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5.3 Secondary data collection format

Amhara Design and Supervision works Enterprise

Socio-Economic Survey Data Collection format at Kebele level

I. Location

1. Woreda ----- Kebele -----Distance from the Woreda (km) -----
2. Name of the Irrigation scheme -----Distance from the kebele (km) -----
3. Area of the kebele (in ha or km²) ----- Number of “Gots” or Villages in the kebele -----

II. Water Supply & Sources in the kebele

Source	name	Qty	In the project area	In the kebele
River				
perennial				
Seasonal				
Hand pump dug well/modern/				
Developed spring				
Undeveloped spring				
Private dug well/traditional/				
Deep well/for piped water/				
River diversion (Modern)				
Traditional diversion				
Water harvesting structure				
Lake				
Dam				
Ponds				

III. Demography of the Kebele

1. Number of households Male----- Female----- Total -----
2. Population Male-----Female----- Total-----
3. Population by age groups(if any)

Age Group	Male	Female	Total	(%)
0-14				
15-64				
65 and above				

4. Ethnicity & Religious (%)

Ethnic group	No	(%)	Religion	No	(%)
Amhara			Orthodox		
Agew			Catholic		
Oromo			Protestant		

Gumuz		Muslim	
Afar		Others	

5. Settlement pattern (1) Scattered (2) Clustered; on what does the settlement pattern based?

- | | |
|------------------------------|----------------------------|
| (1) Clan, lineage or kinship | (2) Economic activity |
| (3) Religious places | (4) Administrative centers |

6. Housing condition in the kebele (HH %)

Type of house	No	(%)	Remark
Only Iron roofed			
Only Grass thatched			
Both			

IV. Social services

1. Main social services in the kebele (in the study area) (Mark \surd if yes and \times if NO)

Type of services	Availability					Distance from project in km
	name	Qty				
Mill						
Market			Market day			
Major market/including livestock						
Minor market						
Road						
Electric service						
Telephone/digital or wireless						
Public health post						
Public health centre						
hospital						
Rural drug vendor						
Veterinary service						
Multipurpose Cooperatives						
Saving & credit						
Irrigation cooperatives						
Multipurpose union						
Saving cooperative union						
Other cooperatives						
Education			Number of students			
			Male	Female	Total	
Preprimary education						
Satellite school						
Grade 1-4						
Grade 1-6						
Grade 1-8						
Grade 9-10						
Grade 9-12						
Grade 11-12						
technique						
FTC						
Religious Institutions						
Church						

Type of services	Availability		Distance from project in km
	name	Qty	
Mosque			

2. What is the total number of regular students drop out in 2006 E.C.?

Male----- Female-----Total-----

3. What are the reasons for the students drop out in the kebele?

4. Existing governmental institutions & No of employed staffs in the study area

Institutions	Male	Female	Total
Education			
Health			
Agriculture			
Administration			
Land use			
Police station			
Cooperative			
Other			
Total			

V. Health & Related issues

1. Family planning, Sanitation and hygiene (HH %)

Description	No	%	Remark
Women who took family planning measures			
Women who do not took family planning measures			
Households who use with pit latrine			
Households who do not use with pit latrine			

2. Availability of potable water the household uses (%) in the study area

Source of water	Beneficiary HHs	%	Remark
River			
Hand pump dug well			
Open hand dug well			
Developed spring			
Undeveloped spring			
Deep well			

VI. Agriculture

1. Land use pattern of the kebele (in ha)(2006)

S/N	Land use type	Area(ha)	(%)	Remark
	Cultivated land			
	Rain fed			
	Irrigated			
	Cultivable land			
	Useless land			
	Forest			
	Grazing land			
	Bush			
	Marsh land			
	Water body			
	Others			

2. Crop production in wet season (2005/06)

S/N	Type of crop	Area(ha)	Total yield(Qt)	Productivity(Qt/ha)
1				
2				
3				

3. Crop production in Dry season (Irrigation)(2005)

S/N	Type of crop	Area(ha)	Total yield(Qt)	Productivity(Qt/ha)
1				
2				

4. Livestock population in the study area

Livestock	Number	(%)	Livestock	Number	(%)
Ox			Donkey		
Cow			Mule		
Calf			Horse		
Heifer			Camel		
Bull			Chicken		
Goat			Traditional beehive		
Sheep			Modern beehive		

5. Non-governmental institutions/ organizations in the study area

S/N	Name of NGO	Field of intervention
1		
2		
3		

6. Are Community based organizations (CBOs) established in the kebele? Mention them

VII. Food security

Description	Male	Female	Total
Number of HHs supported by food security program			
Number of population supported by food security program			

1. Is supply food aid (if any) decreasing or increasing?
Why?-----

2. What are the major causes that led to food shortage in the area (kebele)?

3. Is there any Irrigation scheme in the kebele?
Improved? (1) Yes (2) No, if yes; -----ha

Traditional schemes (1) Yes (2) No, if yes; -----ha

4. Are cooperatives organized in the kebele? 1) Yes 2) No
5. If yes describe types of cooperatives

6. Members in cooperatives society, Male----- Female----- Total-----
7. If there is either modern or traditional irrigation scheme, does the beneficiary farmers organized in irrigation cooperative or water users group? (1)Yes (2) No
8. If beneficiary farmers are organized in irrigation cooperative or water users groups, number of members organized;
Male -----Female-----Total-----
9. Do members pay for irrigation service fee? (1)Yes (2)No
10. If members pay irrigation service fee, rate of payment in Birr-----per hectare or per HH

VIII. Land use Right

1. What is the average landholding of the kebele? (In ha)-----
2. Maximum land holding -----ha Minimum land holding -----ha
3. Does the farmers received land use certificate for their holdings?

S/N	Description	Male	Female	Total
1	Number of households received land use certificate			
2	Number of households not received land use certificate			
3	Number of Complete land less households			

IX. Market Assessment

crop	Current Price(Birr/Qt)	Price of seed(birr/qt)	
		Local	Improved
Cereals			
Teff			
Barely			
Wheat			

crop	Current Price(Birr/Qt)	Price of seed(birr/qt)	
		Local	Improved
Millet			
Rice			
Sorghum			
Maize			
Oats			
Pulse			
Fava bean			
Field Pea			
Haricot bean			
Chickpea			
Grass pea			
Lentil			
Oilseeds			
Soybean			
Nuge			
Flax/Linseed			
Rape seed			
safflower			
Seas am			
Vegetables			
Onion			
Potato			
Garlic			
Shallot			
Beetroot			
Cabbage			
Carrot			
Tomato			
Fenugreek(አ ብሽ)			
Pepper			

X. Farm inputs and implements

Description	Unit Price
Knapsack sprayer with accessories	
Wheel barrow ጋሪ	
Spade መቆፈሪያ መሳይ አካፋ	
Plough ሚሻ	
Sickle ማጭድ	
Shovel አካፋ	
Hoe መቆፈሪያ	
Rake ማሲጠጫ	
Wegel ወገል	
Axe ማኮረቢያ	
Major inputs	
Labor(Birr/day)	
Fertilizer	
D.A.P.(Birr/Qt)	
Urea(birr/qt)	
Agrochemicals(liter/kg)	
Pesticides	

Description	Unit Price
Fungicides	
Others	
Bio fertilizer(kg)	
Labor/day	
Oxen/day	
Land tax	