OROMIA IRRIGATION DEVELOPMENT AUTHORITY

Feasibility Study and Detailed Project Designs of Weteba Bedessa Small-Scale Irrigation Project

FINAL FEASIBILITY REPORT

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ACRONYMS

AGP	Agricultural Growth Program
ANRDO	Agricultural and Natural Resource Development Office
BOQ	Bill of Quantity
CBO's	Community Based Organization's
CPA	Cooperative Promotion Agency
CSA	Central Statistical Authority
DAs	Development Agents
FGD	Focus Group Discussion
FP	Family planning
FS & DD	Feasibility Study and Detail Design
FTC	Farmer training centers
GDP	Gross Domestic Product
GTP-I	Growth and Transformation Plan One
GTP-II	Growth and Transformation Plan Two
ha	Hectare
HH	Household
IDD	Irrigation and Drainage Development
IWUA	Irrigation Water Users' Association
Km	Kilo meter
l/s	Liter per second
MoWIE	Ministry of Water, Irrigation and Energy
MoANR	Ministry of Agriculture and Natural Resource
M & E	Monitoring and Evaluation
MFI	Micro Finance Institution
MM	Millimeter
MOM	Management, Operation & Maintenance
NA	Not Available
NGO	Non-Government Organization
O & M	Operation and Maintenance
PA	Peasant Association
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
Qt	Quintal
ONRS	Oromia National Regional State
IP	Irrigation Project
SWC	Soil and Water Conservation
WANRDO	Wereda Agricultural and Natural Resource Development Office

EXECUTIVE SUMMARY

Irrigation is the one and main alternative investment in order to ensure food security and reduce poverty through many ways. It boosts total farm output and hence, with unchanged prices and raises farm incomes. Increased output levels may arise for any of at least three reasons. First irrigation improves yields through reduced crop loss due to erratic, unreliable or insufficient rain water supply. Second, irrigation allows for the possibility of multiple cropping, and so an increase in annual output. Thirdly, irrigation allows an area of land to be used for crops in areas where rain fed production is hardly possible. Hence irrigation is likely to boost outputs and income levels.

Increased availability of irrigation and less dependency on rain fed agriculture is taken as a means to increase food production and self-sufficiency of the rapidly growing population of the country in general and that of the project area in particular.

Ethiopian irrigation development has been considered as a means to back up economic growth, to ensure rural development, bring livelihood development and poverty reduction.

The proposed Weteba Bedessa Irrigation Project is located in ONRS, Arsi, Shirka Wereda Elelewallena kebele about 26km from Shirka wereda capital, Gobessa town along the dry weather road shifting to the left side along the village of Tena wereda where by some 5 Km is also seasonal road. The total distance of the proposed site is 96km from the zonal capital AsselaTown. The site is not totally accessible for transport, marketing communication because there is no access road to the area. Based on the information from beneficiary community, the community has been traditionally using irrigation from weteba bedessa river since last 33 years. The project aims at developing a net irrigable area of 63ha by using diversion scheme from Bedessa perinial river as a water resource. It is expected that the project will benefit 200project HHs and 1200 families. The total Initial Investment cost is estimated 12.51million ETB.

This socioeconomic report is done through undertaking different interaction with various stake holders ranging from zonal level to beneficiary community. And the finding of the discussion and interaction with various stakes shows that all parts of the stakes, including the beneficiary community, have shown great desire to develp irrigation in the area. The socio-economic aspect of this report has also tried to show all basic elements of the socio-economic and financial and economic analysis aspect of the project. The over all situation of the project shown that the project is socially accepatable and economically viable. The result of measures of economic viability also indicates that IRR 15% B/C ratio1.08and NPV 9.1million ETB. So that the project is economically feasible and can be ready for the construction through discussion with the community and their active envolvmement.

INTRODUCTION

1.1 BACKGROUND

Agricultural production and productivity of the country in general and ONRS in particular is carried out largely under rain fed condition where cropping intensity and the productivity have remained low and the application of improved technology and traditional farming system are major factors contributing to low productivity of agriculture in the country.

In transforming the agricultural sector, in the country, the government has adopted different development policies and strategies of the agricultural sector. One of the significant strategies is enhancing the planning and implementation of small-scale irrigation project for improving water availability and security for better agricultural production and productivty. To make this happen, several attempts underway in the study and detail design of smallscale irrigation project initiated by Oromia Irrigation Development (OIDA), Ministry of Agriculture and Natural Resource (MoANR) and regions with vision towards water centered irrigated agriculture development for small holder benefit through efficient utilization of the existing water resource. There is also growing interest of government and other stakeholders towards promotion of water centered agricultural development through which study, design and implementation of small-scale irrigation scheme are given due attention for accelerating the pace of irrigated agriculture development in the country. It is with this aim that Agriculture Growth Program (AGP) has been identified and formulated as an integrated project under which Small-Scale Irrigation Development and Improvemenet is one of the major components of the program.

In this respect, Small-scale Irrigation Infrastructure Development and Improvement and Integrated Crop and Water Managemenet for Irrigated Agriculture are considered the sub-components. AGP provides support for the government of Ethiopia to promote agricultural growth to higher-level objectives. The higher-level objectives of the AGP are to accelerate broad-based sustained agricultural growth that will create high household income, employment and reduce poverty.

In line with the government development strategic direction, and focus to the agriculture and the Agriculture Growth Program, Weteba Bedessa Irrigation Project was identified for feasibility and detail design study. Feasibility study of the project included different sectoral studies and the socio-economic study is conducted as one component of the feasibility study of this project.

In this connection, development specialists, policy makers and AGP planners increasingly identified that socio-economic aspects of the particular project area are important for design and implementation of Irrigation Development Projects (IDP). Similar to the technical and engineering investigations, socioeconomic study is very essential in assessing feasibility of an irrigation project. It helps to generate social, economic and cultural settings of the population in the project area that are essentially important to sustainable use of the project. It is an instrument to provide adequate and more focused benchmark indicators to pertinently utilize during monitoring and evaluation processes in the future.

In this regard, the socioeconomic study has been conducted comprehensively and, hence, this study report is prepared to show the overall findings of the study in line with the objective of developing small scale irrigation project. It gives detail information on the major social, cultural, and economic settings of the project area.

The project area has good tradition on irrigation development and is conducive for the undertaking improvement of new irrigation scheme. The people are positive and they are also

ready to support the project with their own resources. They have big and potential marketing places in small distance for their products and input requirements. The institutions available within the project area support the project similar to the community. The project could lead to the diversification of crop and livestock production and also to the creation of more labor than the existing. Additional area of land would be developed with no significant socioeconomic impacts. Thus, there are no socioeconomic constraints which could prevent the project from implementation.

The report has been developed with due consideration of the requirements of the Terms of Reference, guidelines and standards of AGP, Client and other similar guidlines. It is prepared based on field assessment, data collected at project sites and different stakeholder consultations to depict general socio-economic overview of the project area.

1.2 PROJECT RATIONALE

The community of the area is dependent on traditional agriculture and the sector determines the livelihood of the community. Crop production is taking place in the area largely using rain fed and very limited traditional irrigation started just two years a go on the bank of Weteba Bedessa river. It has been understood from the field visit that the wider agricultural production in the project area largely depends upon the seasonal rainfall, with only one season operation.

Farmers are producing rain fed crops mainly for domestic consumption while surplus products and few cash crops are produced for market. Crops like Teff, wheat, maize, pea, Horse bean lentils and crops are the major food crop cultivated in the field mainly for domestic consumption.Cash crops like Onion and Tomato have been produced by some of the farmers through use of pump Irrigation. Except the land preparation all other field activities and post harvest activities are undertaken by human labour and women have also high responsibility.

Smallholder commercial irrigated farming system is found at infant stage where attempts are undertaken by producing crops like onion and tomato on small plots of land around the bank of Weteba Bedessa river. The irrigation mechanism is using pumping irrigation from Weteba Bedessa river and crops productivity is also very limited. These situation, knowledge and farmers capacity gap have resulted the existing irrigation to cover small portion of plots from the potentially irrigable lands and existing Weteba Bedessa river Water Resource.

Similarly, the main function of irrigation development is the provision of adequate and sustainable water sources for agricultural production. Irrigation agriculture can result in increased productivity through double or multiple cropping and improve income and nutritional status of households through diversification of agricultural production. Irrigation also provides new employment opportunities and possibility of growing high value crops that require yearround water supply.

Despite the availability of water resources and irrigable land in the project area, production and productivity from both rain-fed agriculture and traditional irrigation is substantially low. Currently, the agricultural production system of the project area is generally characterized by low production and income from rain fed agriculture and traditional irrigation.

Therefore, the upgrading of development of irrigation using Weteba Bedessa water would contribute to improved livelihood status of the community. This is because, the farmers can maximize their benefits that could be obtained from irrigated agriculture; it will enable them to generate significant income increment through the diversification and increment of crop production. Besides, such a project creates additional job opportunity for larger number of

people, youths and women groups. It also leads to surplus production which could be marketed to various places. The stakeholders could also involve in the project which helps for sustainability of the project.

Generally, the project is justifiable with the following reasons:

- Provision of adequate and sustainable water sources for irrigated agriculture
- Increases production and income of small-holders from irrigated agriculture
- Develop and make use the existing land, water and labour resources in the area
- Provide technical, technological and financial support of small-holders
- Acquaint small-holders with irrigated agriculture technologies and parctices

1.3 STUDY OBJECTIVES

1.3.1 General Objectives

The objective of this socio-economy study is to assess the socio-economic condition of the communities under Feasibility Study of this Irrigation Project and to enhance the utilization of the available surface water resources for irrigation development and thus improve agricultural production and productivity of farmers. The study shall ensure a participatory approach, enabling the prospective beneficiaries to contribute to the development of a proposed project, thereby generating a sense of involvement, which is essential to understand and consider the community site specific knowledge in all activities and enhance their sense of ownership that will create fertile ground for existing and future project management.

1.3.2 Specific Objectives

The specific objectives of socioeconomic study enable to investigate keyfactors, which are described as below:

- Identify existing and potential areas for improving the livelihood bases of the communities in the project areas and to identify different possible interventions for sustainable development
- Investigate the Availability and Accessibility of all Social Services and Possibility of the Contributions It has for Future Development of the Irrigation Project
- Identify the population of the project area and investigation of population dynamics
- Identify and Investigate the present and projected economic systems of the farmers around the project area; this is very important to outline the benefits of the proposed development that can be enjoyed by the target users;
- Identify the development potentials and constraints of the intended project; this helps to involve all beneficiaries in the project area so that sustainability of the irrigation project will be planned ahead;
- Assess the understanding and desire of the beneficiaries towards development of irrigated agriculture; this is of course crucial to identify important changes that the population feels necessary to improve their economic conditions. It enables to make the project to be demand driven;
- Identify and estimate the socio-economic benefits and negative impacts of the project, and propose remedial measures;

1.4 SCOPE OF THE STUDY

The scope of the socioeconomic study includes, but not limited to, the following issues:

- Assess the demographic characteristics of the study area including population dynamics, gender issues, settlement patterns, and labour availability;

- Analyzing the existing economic base of the project area, which includes the present and future economic conditions and existing level of income of the farmers;
- Identify and Analyze the Present and Projected Economic Systems, Input Demand, Supply and Consumption, Product Markets and Facilities, Primary & Secondary of the present and demand, supply and consumption; product markets and facilities; and credit services
- Assessing the agricultural support services including input supply and product marketing, their potentials and constraints;
- Investigating the presence of social and development infrastructures in the project areas and find out their linkage or importance with relation to the irrigation development;
- Identify Development Potentials, Constraints in Order to Involve All Stakeholders in the Project Area for Sustainability of the Project
- Undertake Gender Analysis
- Undertake Public Consultation and Assessment of Attitudes
- Identifying conflicting and /or competing demands, if any;
- Find out unlikely social impacts and mitigation measure of the projects;

1.5 LIMITATION OF THE STUDY

While conducting the community consultative meetings, it was found that prior awarness creation were not adequately conducted by the clients during identification/ recconnicence stage which makes difficult the consultation process and time taking for the survey crew. However, during our consultative meeting the consultant made detail discussion and consensus were reached with the communities. Secondly, certain data obtained from various data sources are found to be inconsistent to each other. Accordingly, data obtained from the household survey, focus group discussions and Development Agents are applied in the study by carefule analysis.

2. STUDY APPROACH AND METHODOLOGY

2.1 STUDY APPROACHES AND FRAMEWORKS

In generating plausible and reliable information, the consultant (HM Development Consult) has adopted a wide range of approches and established frameworks. Some includes: - sample household survey, beneficiary housholds regestration, public consultation, FGD techniques and Key informant interviews. These techniques have enabled the survey to get significant data both from the proposed users and local level government institutions. Public consultation and FGD methods have also enabled users and potential stakeholders to reflect their concerns and interests.

Pertinent data has been collected from community members using different approaches and methods and checklists. In conducting the study, the consultant has given due focus towards collecting data at grass root or project command area level. On the other hand, the consultant has also used standard approaches and methods of irrigation study and design preparations that are set by the client and other international institutions. Among others, the Irrigation Development Manual of AGP and JICA guideline have been used as a major reference.

The key data sources were identified following the requirement of the task. Appropriate data collection questionnaires, formats and checklists were prepared prior to the actual data collection tasks. In general, the overall methodologies which are employed for data collection, data entry, data cleaning, analysis and report writing are described indetail below.

2.2 ESTABLISHING DATA COLLECTION TOOLS

Relevant questionnaires, formats and checklists were prepared for different level i.e for wereda, kebele, development agent and key informants. Similarly, questionnaires were prepared for household survey, kebele data and DA data collection. Various formats were prepared and applied for the purposes of beneficiary dentification and registration; undertaking consultative meetings, collection of primary and secondary data, making focus group discussion and others. Moreover, formats also prepared to collect data and information from local level institutions such as agiricultural and natural resources office, schools, wereda education office, DA office, health posts, water supply, primary cooperative offices, micro-finance institutions, women and youth groups.

2.3 PRIMARY DATA

2.3.1 Site Visit and Observation of Project Areas

Before the start of collecting any kinds of socio economy data and information, the team has made site visit and observation of different permanent and temporary component places of the project areas. The socio-economy team together with the engineering team have made preliminary level site visit along project areas in order to have an overview and record of different socio-economic aspects. The site observations were conducted together with members of the kebele administration council; community members suggested by the kebele and development workers of the kebele; experts of the wereda; and with engineering, agronomy and environmental study experts of the project.

Some of the points that have been observed and recorded were sources of water for the project, project boundary, settlement patterns and availability of residential houses located within and outside project command areas, appropriateness of the command area, land cover and utilization

of project areas, attitudes of randomly contacted or approached persons, availability of other water users, number and locations of water points for human and livestock, existing irrigation practices, and existing use of water and land resources. The site visit and observation assisted the socio-economic team to see possible project main components such as water intake points, possible water abstractions methods, head work place, main canal routes, and secondary and other related irrigation infrastructures. The site visit and observation assisted to prepare location maps and further to use for data collection and analysis tasks, to have better knowledge and understandings about the different project sites among participants and to share ideas and select issues that need further consideration. After the visit and observation, the group members have made discussions on the issues which are important for further consideration. In the way of site visit, relevant pictures of settlement pattern, command area features, economic activities, land use pattern, and other relevant issues were taken and used in the report of this project.

2.3.2 Consultation

2.3.2.1 Stakeholders Consultations and Discussions

Prior to in-depth data and information collection the potential stakeholders that would participate in the project were identified. The potential stakeholders are farmers, Wereda administration, Irrigation aDevelopment Office, Agriculture and Natural Resource Development Office, Wereda education office, Wereda health office, Wereda trade and industry office, Wereda women's and children office, Youth and sport office, and others such as kebele administration office, cooperative offices, women and youth associations.

Accordingly, consultative meeting and discussion were made with the abovementioned stakeholder institutions of the project in Shirka wereda Administration office (see Appendix VII), in order to get primary data regarding different factors of the project. The major point which was presented for discussion were regarding the needs and advantages of the project implementation, the current use of the water and land resource, the existence of other land use plan in the proposed project area, willingness of the Wereda administration council, the existence of other water users in the up and down stream, the commitment so far provided and expected from Wereda administration, compensation and land redistribution issues, suggestion on the location of social-infrastructures, appropriateness of the head work site, availability of camp site and other supplementary suggestion.

Accordingly, the participants forwarded their views, opinions and threats on the above major points and proposed irrigation project. In addition to that, secondary data were collected from those stakeholders on the basis of the prepared formats. Tentative formats for letter of administrative bodies request for project implementation was also prepared. It was found that the project is proceeding and selected under the farmers' and stakeholders' requests. Collection of secondary data was also made with the Wereda level offices. The discussion minuets at Wereda sector offices and kebele level area attached in the Appendix of this report.

Figure 2-1: Shirka wereda Administration Council Consultative Meeting

2.3.2.2 Focus Group Discussions (FGD)

A focus group is a qualitative data collection method in which experts and project beneficiaries meet as a group to discuss on the project issues. As a result, during field survey, from the kebele sub-village that fall in commend area, one FGD was undertaken. The FGD members include farmers, youth and women headed households. Women and youth are consulted separately and jointly with the community to ensure that their priorities and motivations are reflected. In each FGD and sub-villages discussion at the end of discussions the minutes and agreement were signed that shows the willingness of communities to support the proposed projects (See the minutes IX). Similarly, FGD was also conducted with Traditional Irrigation Water Users' Group and kebele administration representatives.

2.3.2.3 Public Consultation and Beneficiary Communities Identification

Project beneficiary's identification was the critical and tiresome tasks in this irrigation project and there are no uniformly or readily available kebele lists of farmers or pre-identified beneficiary lists. As a result, format for registering list of beneficiaries was prepared prior to the collection of any socio economy data. The names of households who have irrigable land within the command area are initially identified and community data such as household survey, focus group discussions, and consultations were undertaken from the list of identified households. The list of the beneficiary farmers together with their area of land holdings, family size and asset ownership are collected by the selected persons and sub-village leaders and DA of the kebele. In preparing the direct beneficiary list the kebele administration council, sub-village leaders played crucial role. Similarly, the list of the beneficiary communities, land size, family size, signature and other household resources are attached in the Appendix of this report.

Consultative meeting was held with the beneficiaries found within the project area. The consulted persons are the direct beneficiary of the project and all have got land within the command area. The major reason of making community discussion is to get the views and attitudes of the people about the proposed irrigation project, as well as to collect primary data. Similarly, in the consultative meeting the public or the project beneficiary at large, women headed households and youth groups were participated and forwarded their positive idea, threats, opportunities and future directions.

2.3.3 Household Survey

2.3.3.1 Enumerators Training

Household survey is one of the primary data collection methdologes proposed in the TOR. Household survey was undertaken by trained enumerators with close supervision of the consultant. The enumerators were two (2) in numbers (Kebele DA and Kebele Adminstration Manager) and selected from the project kebeles and well experienced in knowing the local language, culture of the people and also know local measurements. After selection of the enumerators explanation and training were given to them before and along the course of data collection process. Similarly, various responsibilities were given for the enumerators in their field of responsibilities.

Accordingly, enumerators mainly took the responsibilities of conducting household questionnaire. The process of the survey was closely supervised by the socio economist.

2.3.3.2 Sample Households

Prior to the selection of sample household, household settelement, location and their groups were identified. Then, out of the total identified number of 200 households found within the project command area,15 sample households' (95% male and 5% female) were selected for the survey. The samle households are selected using proportionately systematic random sampling method by dividing the population into groups according to their location, settelement patterns and gender.

2.4 REVIEW OF DOCUMENTS

Planning and implementation of any development projects can be facilitated if the project is compatible with existing policies, strategies and legal framework of the country and the region. In this regard review of polices, strategies, proclamation, guidelines and previous studies helps to assess relevant findings applicable and aligned to the current studies were conducted. It also helps for suggesting for changes of polices and legal frameworks. Accordingly, relevant studies, policy issues and guidelines were reviewed in the study.

In this study, the reviewed documents includes Water Resource Management Policy, Agriculture and Rural Development Policy and Strategy, Growth and Transformation Plan (GTP-II), Participation Policy, Rural Credit Policy, Ethiopian Water Resource Management Proclamation, Proclamation on Expropriation of Land Holdings and Payment of Compensation, Proclamation on Rural Land Administration and Land Use, AGP-Small-Scale Irrigation Planning and Implementation Guidelines, and Irrigation Water User Association Proclamation of the region. Generally, pertinent document on AGP and Irrigation Water Users' Association Proclamation are assessed, reviewed and summerized for the purpose of this study.

2.5 SECONDARY DATA

Secondary data consists of document including legally published, unpublished, policy issues, recorded office level data, reports and information were collected. These data were collected from the region, wereda level sector offices, kebele administration, DAs and kebele level sector office representatives. Various formats were developed for the collection of secondary data from various sectoral wereda level governmental offices namely offices of Water Supply and Mines, Agriculture&Natural Resources, health, education, Women and Children, Youth and Sports, Rural land Administrationand Environmental protection and plan and economy.

Most of the secondary data were basically used for the purposes of defining different socio-economic profile of the project places and to recommend measures that have to be introduced. The types of data that were collected largely relate to the figures of the wereda as well as specific project areas. The collected data and information were used to describe in comparison with the surveyed data from project places.

2.6 DATA ENTRY, ANALYSIS AND REPORT WRITING

Based on the methodologies applied in this study, data clearing, organizing and coding of each variables and data sheet so as to ease the controlling and managing the expected results from each source were performed. The collected data using different approaches were entered into EXCEL Spread Sheets and SPSS software. After data entry and verification is completed, then summaries of relevant data were obtained and used for report writings.

Accordingly, the preparation of socio economy report was both descriptive and quantitative data analysis approach. The report focuses basically on the specific project area and also provides comparative analysis with the Wereda as required data available. In the final, the socio economy report is prepared with a support of relevant explanatory tables, figures, discussion minutes, pictures and annexes

3. REVIEW OF POLICY, STRATEGIES, LEGAL FRAMEWORKS AND DOCUMENTS

3.1 POLICIES AND STRATEGIES

3.1.1 Water Resource Management Policy

The overall goal of the water resources management policy issued in 1999 is to enhance and promote all national efforts towards the efficient and optimum utilization of the available water resources for socio-economic development on sustainable basis. The document includes policies to establish and institutionalize environment conservation and protection requirements as integral parts of water resources planning and project development. It also includes policies to develop criteria and parameters for:

- Protection of water bodies;
- Impacts of water resources undertakings on the environment; and
- Ensure that all water resources schemes and projects shall have "Environment Impact Assessment and Evaluation" component where the impacts of schemes or projects are identified and the appropriate measures to mitigate impacts.

As part of water resource management policy, irrigation is dealt as sectoral issue in part 2.3.2. with the major objective to develop the huge irrigated agriculture potential for the production of food crops and raw materials needed for agro industries, on efficient, and sustainable manner and without degrading the fertility of the production fields and water resources base as described below.

3.1.2 Irrigation Policy

According to irrigation policy of the country sufficient food has to be produced to meet the requirements of the fastgrowing population and ensure food security for eventualities at household level. Furthermore, small, medium and larg scale irrigation schemes will have to be developed in order to enhance reliable agricultural development in Ethiopia to cater for externally marketable surplus that would earn the country foreign exchange and at the same time provide raw material inputs for industries.

The overall objective of irrigation policy is to develop the huge irrigated agriculture potential for the production of food crops and raw materials needed for agro industries, on efficient, and sustainable basis and without degrading the fertility of the production fields and water resources base and the policies are outlined below.

- Ensure the full integration of irrigation with the overall framework of the country's socio-economic development plans.
- Promote the development of irrigation on two- pronged approaches of:-
  - Strategic planning for achieving socio-economic goals and
  - Participatory- driven approach for promoting efficiency and sustainability.
- Recognize that irrigation is an integral part of the water sector and consequently develop irrigation within the domain and framework of overall water resources management.
- Earmark a reasonable percentage of the GDP as committed resource towards the development of irrigated agriculture, especially in capacity building and infrastructures.
- Promote decentralization and users-based-management of irrigation systems taking account of the special needs of rural women in particular.

- Develop a hierarchy of priority schemes based on food requirements, needs of the national economy and requirements of raw materials and other needs.
- Support and enhance traditional irrigation schemes by improving water abstraction, transport systems and water use efficiency.
- Ensure the prevention and mitigation of degradation of irrigated water and maintain acceptable water quality standards for irrigation.
- Establish water allocation and priority setting criteria based on harmonization of social equity, economic efficiency and environmental sustainability requirements.
- Integrate the provision of appropriate drainage facilities in all irrigated agriculture schemes.
- Enhance greater participation by the Regional and Federal Governments in the development of large scale irrigated farms in high water potential basins but with low population density.

3.1.3 Agriculture and Rural Development Policy and Strategy

Agriculture and Rural Development Policy and Strategy were adopted by the government in March 2010/2011. The basic objective of agriculture and rural development policy of the country in general and the ONRS region in particular is to achive rapid and sustainable economic growth by improving the productivity of the agricultural sector and building up agriculture based industrial sector, which is labour intensive and utilizes local resources (water, land and labour). The plan aims at achieving food security in the region. The specific objectives of the agriculture and rural development policy include: -

- Increase the production of food crops both in quality and quantity in order to attain food self-sufficiency;
- Improve the livelihood of the rural community through sustainable development of the agricultural sector;
- Promote the production of sufficient agricultural products, which can be used as raw material for the agro-industries and to expand the production of industry led agricultural production; and
- Ensure sustainable agriculture through the promotion of agricultural practice, which realizes the conservation of natural resources base.

Currently, the region intending to enhance rural development through accelerating water based development such as large, medium and small-scale irrigation development. It is in this line that Weteba Bedessa Irrigation Project planed and proposed for feasibility study through the support of Agri-cultural Growth program (AGP).

3.1.4 PASDEP, Growth and Transformation Plan (GTP)

The government of Ethiopia adopts development policies and strategies every five years. The Plan for Accelerated and Sustained Development to End Poverty (PASDEP) adopted for the period 2005/6-2009/10 has given prime importance for rural and agriculture development with aims for accelerated, sustained and people-centered economic development.

Following the PASDEP, Growth and Transformation Plan (GTP-I and II) adopted for the period (2009/10-2014/15) and (2016/17-2020/2021) is directed to achieve an economy which has a modern and productive agricultural sector with enhanced technology and an industrial sector that plays a leading role in the economy; to sustain economic development and secure social justice; and, increase per capita income of citizens so that it reaches at the level of those in middle-income countries.

In policy direction of GTP, smallholder farming will continue to be the major source of agricultural growth with shift into commercialization. To complement this development objective, concentrated policy support should be provided for private investment in large commercial farms. Fundamentals of the strategy include the shift to produce high value crops, a special focus on high-potential areas, facilitating the commercialization of agriculture, supporting the development of small and large-scale commercial agriculture where it is feasible. In general, agriculture will direct on placing major effort to support the intensification of marketable farm products by small and large farmers for domestic and export market.

During the GTP period, it is planned to transform agriculture sector to high growth path in order to ensure the food security challenge of the country and to curb inflationary pressure as well as broadening the export base of the country. The sector also serves as a spring board to bring about structural transformation in the long run through contribution to industrial growth. To promote multiple cropping and better cope with climate variability and insure food security, the Growth and Transformation Plan (GTP) has adopted agricultural development and focus strategies include;

- Scaling up production and productivity of land, labor and available natural resource use based on agro ecological suitability.
- Specialization, diversification and strengthening agricultural production and marketing system.
- Strengthen extension service for majorities of smallholders
- Provide support for the private large scale commercial farms.
- Promotes appropriate use of rain water and other water source,
- Improve water use efficiency through expanding of irrigation schemes with special attention to small scale irrigation schemes development.
- Strengthen public participation in the planning and implementation and take affirmative actions to enhance women participation at Wereda and kebele level; engaging and mobilizing the public in the construction of local infrastructure development activities (road, schools, health stations, irrigation and others).

In line with the general development policy and strategic framework, several attempts underway in study and design of small scale irrigation project initiated by respective regions with vision towards water centered irrigated agriculture development for small holder benefit through efficient utilization of the existing water resource.

Similarly, GTP-II also prepared in a participatory approach in a more comprehensive manner and it assessed the gaps observed under GTP-I implementation process and tries to fill the gaps. In general, the agricultural Transformation Plan-II has adopted range of interventions and public investments directed to basic infrastructure development mainly road, market infrastructures and others to support and scale-up of the success in economic growth of the country. For conducting the socioeconomic study other policies like Rural Development Policy, Decentralization policy, participatory policy, land use policy, water policy etc was referred and used to explain the issues with the current proposed irrigation project.

3.1.5 Participation Policy

The official policy of participation is to properly sensitize, motivate and aware the entire soceity (rural and urban) in all development activities. The policy assesses the fact that no development activity can succeed without the effort and participation of the entire community. It should also be

noted the participation of the public should not be on the basis of compulsions or in a manner, which is contrary to their interest or against their belief. They should be convinced and accept that the ongoing and proposed development intervensions are their own and are for their advantage.

3.1.6 Rural Credit Policy

Rural credit policy was issued in 1986 and revised in 1988. The revised policy has formed a basis for rural credit activities. The objectives and strategies of the revised rural credit policy hinge on expanding credit operation in the rural sector through:

- Investment credit for agricultural and non-agricultural activities in the rural areas
- Short term production, marketing and facilitating other credit system as an option for rural financial needs.
- Introducing institutional credit system as well as development of traditional rural financing system.

3.2 LEGAL FRAMEWORKS

3.2.1 Ethiopian Water Resource Management Proclamation

This Proclamation, proc.No.197/2000, was issued in March 2000 and provides legal requirements for Ethiopian water resources management, protection and utilization. The aim of the proclamation is to ensure that water resources of the country are protected and utilized for the highest social and economic benefits, to follow up and supervise that they are duly conserved, ensure that harmful effects of water use prevented, and that the management of water resources is carried out properly.

The proclamation defines the ownership of water resources, powers and duties of the supervising body, inventory of water resources and registry of actions, permits and professional licenses, fees and water charges. According to the Proclamation, all water resources of the country are the common property of the Ethiopian people and the State.

Under Article 11 which deals about the necessity of permits, the proclamation states that without prejudice to the exceptions specified under article 12 of this proclamation, no person shall perform the following activities without having obtained a permit from the supervising body:

- Construct water works;
- Supply water, whether for his own use or for others;
- Transfer water which he/she abstracted from a water resource or received from another supplies; and
- Release or discharge waste into water resources unless otherwise provided for in the regulations to be issued for the implementation of this proclamation.

3.2.2 Proclamation on Expropriation of Land Holdings and Payment of Compensation

Proclamation No. 455/2005 was issued in July 2005 and deals with appropriation of land for development works carried out by the government and determination of compensation for a person whose landholding has been expropriated. It includes provisions on power to expropriate landholdings, notification of expropriation order, and responsibility for the implementing agency and procedures for removal of utility lines. According to the proclamation, the power to

expropriate landholdings mainly rests on Wereda or urban administration authorities. Article 3 (1) of the Proclamation states that a Wereda or an urban administration shall, upon payment in advance of compensation in accordance with this proclamation, have the power to expropriate rural or urban landholdings for public purpose where it believes that it should be used for a better development project to be carried out by public entities, private investors, cooperative societies or other organs, or where such expropriation has been decided by the appropriate higher regional or federal government organ for the same purpose.

In addition, the proclamation deals with determination of compensation having articles on the basis and amount of compensation, displacement compensation, valuation of property, property valuation committees, complaints and appeals in relation to compensation. As per this proclamation, a land holder whose holding has been expropriated shall be entitled to payment for compensation for his property situated on the land for permanent improvements he made to such land, and the amount of compensation for property situated on the expropriated land shall be determined on the basis of replacement cost of the property. For houses in urban areas, the amount of compensation should not be less than the current market value of construction. In addition to the amount of compensation for the property expropriated, the proclamation also gives a provision for cost of removal, transportation and erection.

3.2.3 Proclamation on Rural Land Administration and Land Use

This Proclamation, Proclamation No. 456/2005, came into effect in July 2005. The objective of the proclamation is to conserve and develop natural resources in rural areas by promoting sustainable land use practices. In order to encourage farmers to implement measures to guard against soil erosion, the proclamation introduces a rural land use right certificate, which provides a level of security of tenure.

The Ministry of Agriculture and Natural Resource is charged with executing the proclamation by providing support and coordinating the activities of the regional authorities. Regional governments have an obligation to establish a competent organization to implement the rural land administration and land use law. At regional level, ONRS Land Use and Administration Bureau is responsible to implement this issue.

Part three of the proclamation presents regulations relating to the use of rural land, particularly as it relates to soil and water conservation and watershed management. The Proclamation also addresses environmental concerns, including non-compliance with directives on environmental protection. An important feature of this proclamation is that it stipulates rural land use and restrictions based on proper land use planning, providing for the proper use of various types of land, such as slopes, gullies and wetlands, as well as the utilization of rural land for villages and social services. In addition, it is envisaged that the proclamation will create a sense of ownership among the vast majority of the rural population and enable them to take initiatives and collectively engage in environmental management activities.

In relation to Rural Land Use and Administration Proclamation, the proclamation issued by the Regional State is proclamation No.133/2006. One of the aims of the proclamation is to correct the distortions and miss-interpretation shown on irrigable land administration and management. Regarding, irrigation land re-allocation Proclamation No.133/2006 article-14 sub-article 1, 2, 3 and 4 states that: -

- Any land to be cultivated by modern irrigation may, causing the acquisition of proper share of the previous landholder, be distributed.

- Farmer or semi-pastoralist whose land is taken by distribution shall, priory be paid compensation through the person to whom his land is to be given for permanent assets he cultivated on decreased land.
- The traditional irrigation usage shall be carried out supported by community cultural rules and counseling of the pertinent professional offices.
- Without prejudice to the obligations to apply the requirements to be issued by professional offices, before any modern irrigation activity is carried out, it shall be necessary to ensure the undertaking of the detailed design works for the dam to be constructed, conducting of the catchment works, and the non-damaging of the soil and stone dug during the dam construction on public.

In reference to the existing proclamation and regarding on the determining of Minimum Rural Land Holding size and encouraging Land consolidation states that:- Without prejudice to the existing farmer holding or farm plot size of the family, the farm plot to be given in the future shall be, If it is irrigable land constructed by the expense of the government which is to be given to peasants, pastoralists or semi pastoralists, the Minimum size shall be 0.06 and 0.20 hectares , for irrigation and rain fed agriculture, respectively.

The assessment of this proclamation reveled that: -

- Irrigation land re-distribution shall be made when irrigation structure is constructed by the expense of the government and held by peasants, semi pastoralists or pastoralists in order to use irrigable land properly and equitably.
- Where peasant farmers, semi pastoralist or pastoralists are evicted from their holdings for the purpose of constructing irrigation structure, land re-distribution shall be undertaken to make them get equitable benefit from the irrigation development to be established.

3.2.4 Establishment of IWUA Proclamation

IWUA proclamation No. 239/2016 was issued under the auspices of the council of the Oromia National Regional State. The proclamation issued to provide for the establishemenet and administration of Irrigation Water Users' Associations in Oromia National Regional State. This proclamation shall be applicable to irrigation water users' associations on the constructed and to be constructed irrigation infrastructures and the traditional irrigation infrastructures that the society serves in the region by the regional governement budget as well as with the finance subsidy of the non-government organization.

Proclamation No. 239/2016 is also applicable all over the region, with respect to Water Users' Associations formed on irrigation infrastructures. The proclamation has many components of which, the management bodies of an association shall have: -

a) The General Assembly;
b) The Management Committee;
c) The Control Committee; and
d) The Dispute Settlement Committee.

Every association shall collect from its member an annual membership fee in proportion to the size of the plot of land of member in the service area to cover its Costs. The amount of the annual membership fee payable by each member shall be used to:

a) Cover the costs of operating and maintaining the irrigation and drainage, system and the costs of cleaning any drainage ditches;

b) Pay to the service providers for the operation of the irrigation and drainage system or the removal of obstructions from the irrigation canal;
c) Pay salaries of staff and other costs of the association; and
d) Maintain reserve fund for the association.

3.3 RELEVANT PREVIOUS STUDIES ON IRRIGATION DEVELOPMENT

The Oromia Irrigation Development Authority incollaboration with other development partner institutions has identified a number of dams and irrigation projects

Various socio-economic studies and analysis were made by reputed international and National firms, specialized experts have confirmed that all proposed projects around Weteba Bedessa valley will have significant social and economic contribution or impact on the surrounding communities and will not affect the Qoka dam and downstream water flow. The studies covered, among other subjects, population, population dynamics, population projections, religion, culture, language, social services, economic activities, housing type, land tenure, existing infrastructure, market potentials and gender issues. The study found the climatic unreliability, particularly insufficient rainfall and absence of irrigation as the important reasons for low production and poor productivity and suggested strategies for enhancement of production and productivity under the existing conditions and resource potentials.

3.4 AGP GUIDELINE, GUIDING PRINCIPLES AND STRATEGIC ISSUES

AGP has prepared a guideline entitled “Small-Scale Irrigation Planning and Implementation Guidelines'' and the guidline was reviewed and the study of the socio economy part is prepared largely as per this guideline. AGP focuses on smallholder farmers in high potential areas of the country and adjacent Weredas. This Irrigation Planning and Implementation Guideline is compatible with other standards guideline and shared with other financial resources.

Generally, the Guiding Principles and Strategic Issues of AGP is that the irrigation project should be demand driven, follow participatory approach, Integrated and Inter-disciplinary approach, watershed approach to ensure stakeholders participation. This requires that the project will be implemented in such a way that the schemes shall be a demand driven type in which the first initiation has to come from the beneficiaries themselves. As per the guideline, the community highly demands project implementation in order to alleviate their irrigation water supply shortages and this has been supported by their requesting letter. The undertaking of project studies and initiatives for construction and operation is thus compatible with the community demands and the participation of governmental institutions is also confirmed by this study. The major points which are significant in relation to this study are discussed below.

3.4.1 Project Financing and Cost Sharing

Investment Cost-sharing and full coverage of O&M costs by beneficiaries contributes to the sustainability of a project for establishing the responsibility of various beneficiaries in the management of the resource. Cost sharing and O&M fees collection from farmers has the following advantages:

a) It helps to cover the O&M cost by users so that the project is financially sustainable and reduce financial burden on the government;
b) Cost sharing will reduce investment burden of the government for the cost of capital required to construct the project;
c) Cost sharing improves sense of ownership of the users;

d) It involves pricing to encourage farmers to use less water per unit of output or produce greater net economic returns per unit of water, or both.

Various forms of contributions are possible based upon social networks and group formation mechanisms. Beneficiaries community agreed to contribute at least 10% of the cost for civil works in the form of labor or/and local construction material. In accordance to this, the communities are ready and willing to participate in project financing and financing of project operations.

3.4.2 Building on Existing Knowledge

Regarding existing knoweldege the community AGP Guidline states that, it is very important to recognize the local knowledge and experience that farmers have acquired over a long period of time—passed over from generation to generation, analyze and build on these knowledge and practices first before considering new innovations. The beneficiaries' perspective should always be the point of departure for analysis of problems and solutions.

Avoid an interventionist approach. Instead, listen to farmers and strive to understand specific local contexts. Respond to the problems identified by beneficiaries and facilitate solutions based on techniques/ technology they see as acceptable and useful. Participate in the fulfillment of their goals and understand their opportunities and constraints.

Strengthening institutions that already exist with the aim of increasing their effectiveness is important. Try to avoid the creation of new water management institutions over the traditional ones.

3.4.3 Establishment of Scheme Managing Institutions

Regarding scheme management institutions, the guideline states that once irrigation schemes have been constructed, they are commissioned to the beneficiaries for subsequent management, implementation and funding of O&M costs under the guidance and technical support of the appropriate Wereda and Regional offices. Hence, beneficiaries are advised and expected to form institutions at site level, which will be responsible for scheme operation, water allocation and maintenance. These institutions (water users' association, irrigation water user's cooperatives or traditional water committee) should be strengthened/ established during promotional works.

Leaders of the institutions require intensive assistance and training to cope up with the technical and financial requirements for O&M of the systems. Furthermore, a mechanism should be developed to motivate the leaders, which can be in terms of cash, crop and /or labor.

3.4.4 Land Reallocations and Compensations Issues

AGP will operate on the principle that no one in a community or watershed should be worse off because of the project's interventions. Before construction begins, the Project must ascertain that everyone in the community has agreed to plan for sharing the command area and/or arrange other mechanism of compensation. As per the guideline, the socio economy study has at least estimated compensation costs for those that could potentially or significantly be affected assets.

4. PROJECT ADMINISTRATIVE LOCATION

4.1 PROJECT LOCATION AND ACCESSIBILITY

The proposed Weteba Bedessa Irrigation Project is located in ONRS, Arsi, Shirka Wereda Elelewallena kebele about 26km from Shirka wereda capital, Gobessa town along the dry weather road shifting to the left side along the village of Tena wereda where by some 5 Km is also seasonal road. The total distance of the proposed site is 26km from the zonal capital AsselaTown. The site is not totally accessible for transport, marketing communication particularly during winter time. Based on the information from from beneficiary community, the community has been traditionally using irrigation from weteba bedessa river since last 33 years.

4.2 COMMAND AREA KEBELE

The intension of the study is to upgrade existing traditional irrogation where farmers have long time experience in the area. The project gross command area is estimated to be about 150 hectares falling totally in Shirka wereda of Weteba Bedessa Kebele. The command area is situated along the territory of the Weteba Bedessa river bounding the river course. As the information obtained during the deiscussion with the community, there are about 200 beneficiary farmers who currently use from the traditional irrigation but farmers are usually suffering by two major cases; lack of marketfor produce due to inaccessible road and frequent deomilshing of the traditional head work structure at time of rainy season.

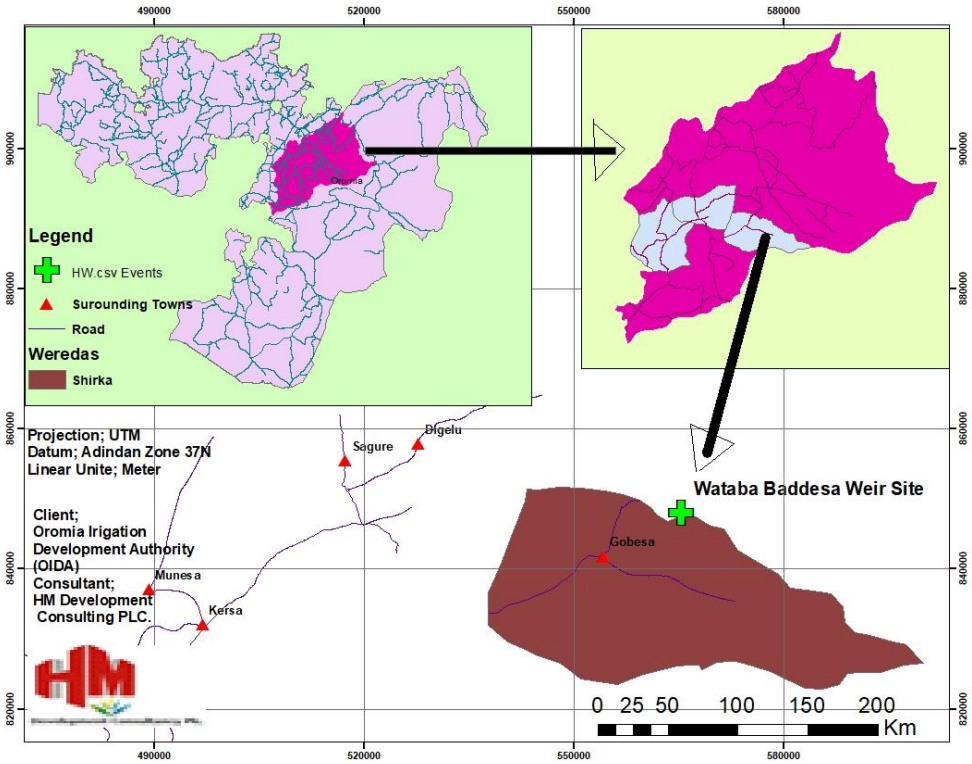

Figure 3.1.-1Wataba Bedessa **Diversion Irrigation Project Location Map**

5. POPULATION AND DEMOGRAPHIC CHARACTERISTICS

5.1 POPULATION SIZE

Population and demographic analysishas a significant importance for planning and implementation of any development activities. Accordingly, the project area populations are smallholder farmers engaged mainly in agricultural activities, whose major livelihood is predominantly depending on rainfed crops and livestock production. The project area population also includes family members (particularly women, children and youth) including the landless, farmers with bigger landholdings and women headed households. Based on the 1999 Population and Housing census report and the wereda projection the total population of the wereda both rural and urban in 2015/2016(E.C.) indicates that 213748 of which Male comprises 106,000 while female takes 107,749.
Total population size presented in Table 5-1, describes the Shirka wereda rural population and, Weteba Bedessa command area population data.

Table 5-1: Population of the wereda and the Project area

Description	Households			Population			Average
	Male	Female	Total	Male	Female	Total	
Weteba Bedessa Kebele	339	50	389	2394	2494	4888	12
Weteba Bedessa Command area	178	22	200	588	612	1200	6.0
Gobessa Town	**2396**	**750**	**3146**	**11213**	**10811**	**22023**	**7**
Wereda (Rural)	**24,054**	**7,900**	**31954**	**94,787**	**96,938**	**191,725**	**6**

Source: Wereda Socio Economy study report 2016

5.1.1 Estimated Project Beneficiary

Identifiction of the project beneficiaries were the critical and tiresome tasks in the study and design of an irrigation projects. However, based on the project boundary map, the potential project beneficiaries in the gross command area were identified and registered on the prepared registration format. Primarily, using the prepared format, the names of households who have irrigable land within the command area were identified with the intensive supports of administration officials, sub-village leaders and development agents. The existing administrative organizational set-up (kebele administration and development zone and also have made significant contribution in identification of the project beneficeries.

Accodingly, the list of the beneficiary farmers together with their area of land holdings were collected by the enumerator and DA of the kebele. Similarly, the list of the beneficiary communities, land size, family size, signature and others were attached as Appendix in this report. Table 5-2 shows numbers of beneficiaries in the identified command area sub-villages.

Table 5-2: Estimated Beneficiary Number

No	Name of Kebele	Name of Sub-village	No of Users HH			Location in the project
			Male	Female	Total	
1	Weteba Bedessa	Weteba Bedessa	178	22	200	Command Area
		Total	178	22	200	

Source: Command area HH Regestration List, 2018

5.1.2 Population Projection

Population statistics has been the basic resource used in planning and implementation of irrigation projects. It is very important mainly to estimate the population sizes that are expected to benefit from the intended irrigation project. Accordingly, the annual population projection for this project is done both for the command area and the Kebele. With respect to the command area, projection is made for existing population having land within the command area obtained from the beneficiaries' registration list.

Based on the CSA data, population growth rate varies from year to year, between rural and urban areas, and also between Weredas and kebeles. Urban population has a higher growth rate than rural population because of migration to the towns. However, because of lack of yearly rural population growth rate data, for this report population projection the average population growth rates (2.69%) of ONRS Region established by CSA are applied. Asumming 2016 as a base year, the projection is made for a total of 25 years which is equivalent to the economic life of the project.
The formula adopted for the projection of the population is as follows.

$$Pt = P0\,(1+r)^{n}$$

Where: Pt= projected population at year t r = rate of growth
Po= base year population n= number of years

Table 5-3: Projected Population Number of the Command Area and the Kebele

S.N.	Year	Projected HH in the Command Area			Projected Population in the Command Area			Projected HH in the kebele			Projected population in the Kebele		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2017	178	22	200	599	601	1200	339	50	389	2394	2494	4888
2	2018	183	23	206	616	618	1,234	349	51	400	2,463	2,566	5,030
3	2019	188	24	212	634	636	1270	359	52	411	2535	2,641	5,176
4	2020	193	25	218	651	635	1,286	434	54	488	2,609	2,717	5,326
5	2021	198	26	224	669	652	1321	447	55	502	2684	2,796	5,480
6	2022	203	27	230	686	671	1,357	476	56	532	2,762	2,877	5,639
7	2023	208	28	236	704	669	1373	506	58	564	2842	2,961	5,803
8	2024	213	29	242	721	686	1407	536	59	595	2,924	3,047	5,971
9	2025	218	30	248	729	706	1,435	566	60	626	3009	3,135	6,144
10	2026	223	31	254	756	703	1,459	596	62	658	3,096	3,226	6,322
11	2027	228	32	260	774	720	1494	626	63	689	3186	3,319	6,505
12	2028	233	33	266	791	741	1,532	657	64	721	3,278	3,416	6,694
13	2029	238	34	272	809	737	1546	687	65	752	3373	3,515	6,888
14	2030	243	35	278	826	754	1,580	717	67	784	3,471	3,617	7,087
15	2031	248	36	284	844	776	1620	747	68	815	3571	3,721	7,293
16	2032	253	37	290	862	771	1,633	777	69	846	3,675	3,829	7,504
17	2033	258	38	296	879	788	1667	807	77	884	3781	3,940	7,722
18	2034	263	39	302	896	811	1,707	837	72	909	3,891	4,055	7,946
19	2035	268	40	308	914	805	1719	867	73	940	4003	4,172	8,176
20	2036	273	41	314	931	822	1,753	897	75	972	4,119	4,293	8,414
21	2037	278	42	320	949	846	1795	927	76	1,003	4,239	4,418	8,658
22	2038	283	43	326	966	839	1,805	958	77	1,035	4,361	4,546	8,909
23	2039	288	44	332	984	856	1840	988	78	1,066	4488	4,678	9,167
24	2040	293	45	338	1001	881	1,882	1018	80	1,098	4,813	4,813	9,433
25	2041	298	46	344	1019	873	1892	1048	81	1,129	4954	4,953	9,706

Source: projection of the socioeconomist based oin the Wereda Population base data

Rural population projections for the project area has been estimated and are presented in the above Table 5-3. The rapidly increasing population number in the area will create increasing pressure on the existing agricultural resources (land, water), social and institutional services.

5.1.3 Population Density

Population density analysis is one of the important factors in understanding and description of the population characteristics. The population density of an area falling in the command area is expressed in two ways: Crude Population Density (CPD) and Net Population Density (NPD), i.e. rural population divided by cultivated land area. Accordingly, the net population density for Shirka wereda is 3person/hectare and 6person/ hectare for Weteba Bedessa, respectively.

5.1.4 Demographic Characteristics

Average Family Size and age structure of the households: The data obtained from kebele and DAs indicates that the family size varies within kebele households and it is between the ranges of 2-9 and the average family size at the kebele level is 5persons/family. The household survey result on the otherhand indicates that the total family members of the interviewed 15 households of the command area are amounts to 90 consisting of 48 males and 42 females. On the basis of the indicated figures, the average family size of the command area is 6persons/family. Regarding the age structure 47% of the sample households are between 10 and 65 ages which are considered as economically active social groups. The maximum and the minimum age of the sampled households are 27 and 66 years, respectively and the average age of the respondent is 46 years.

Table 5-4: Age Catagories of Sample Households

No.	Sex Composition	Age Structure	Number	%
1	Male	<10 Yrs	17	35
		10 - 15 Yrs	12	25
		15-65 Yrs	25	45
		>65 Yrs	1	2
		Total	55	100
2	Female	<10 Yrs	16	38
		10 - 15 Yrs	10	24
		15-65 Yrs	24	48
		>65 Yrs	0	0
		Total	50	100
	Total	Male	55	53
		Female	50	47
		Total	**105**	**100**

Source: - Command area Household Survey Result, 2018

Sex Composition: -As it is mentioned in Table-5-4 above about 53% and 47% of the population of the sample households are male and female, respectively. Similarly, the male population of the kebele is slightly higher than the female population. At Wereda level the male and female population are almost in equal proportion. The population and household distribution by sex composition of the project area, the kebele and the Wereda are given in Table 5-5.

Table 5-5: Sex Composition of the Project Areas

Sex	Sex Composition in Percentage		
	Male	Female	Total
Kebele	50%	50%	100%
Command area	51%	49%	100%
Wereda (Rural)	49.5%	50.5%	100%

Source:-Household Survey & Wereda secondary data, 2018

Composition of Religion: The result of the household survey, site observation, kebele and DAs data shows that 98% of the population is muslim region follower followed by 2% of the households and population of the project area are followers of Ethiopian Ortodox Christian. In terms of religion of the project area one can observe homogenous religion composition, which have a significant contribution interms of smooth communication and understanding between users. Similarly, this has positive implication on conflict managemenet, operation and resource managemenet of the proposed irrigation projects.

Ethnic Composition: - The data obtained from the kebele, focus group discussion, DA office, kebele office and the household survey shows that 100% of the people within and outside the command area are Oromo people and they have similar ethnic composition.

Language Composition*:* -Oromigna language is spoken by all users and on the basis of data obtained from the household survey, DA office of the kebele; the language of the entire population speaks Oromigna. There is homogeneity among the population of the project area interms of language composition.

Housing Status: - According to the household survey result, the types of the majority of residential houses are corrugated Iron sheets, which is also confirmed through site observation and households house visits. Similarly, houses of grass roofed also avialable, which is used for supplementary uses such as for kitchen, shelter for livestock, storing of different crop products and by-products. Accoding to the household survey 65% of the respondents have two rooms and 32% have three rooms of houses. The average sizes of the houses are about 55M^2 including some livestocks shelter/barn. All respondent houses have no any water and electric power supply and 53% of the respondents have Toilet in their compounds while the remaining use open air deficication system.

Household Housing Equipments: - household asset or housing equipment assessment is one of the indicators that describes the household status in the area. Accordingly, data were collected from sample households on their household apparatus, in this assessment all respondents have bed (woody or metallic) type, 15 respondents (42%) have radio, 2% have tape recorder and 7 respondents (16%) have table and chairs in their houses. The availability of radio and television has a significant advantage for disseminating irrigated agricultural technologies in the area.

Farm Equipment Owned: - Similarly, data also collected from the sampled respondents on the basic farm equipments owned and currently used by the households in their farming practices. Accordingly, 60% respondents have farm oxen and plow with its accessories, 0.5% have small irrigation pumps, 66% have hand tools (Hoe, Spade) and 80% of the respondent also have Granary (grain store). The data collected from the household respondent is summarized in the following Table.

Table 5-6: Major farm equipment owned by households

No	Farm equipment	Ownership of Farm equipment such as			
		Yes	%	No	%
1	Farm Oxen	10	67	5	33
2	Plow with its Accessories	12	80	3	20
3	Knapsack Sprayer	6	40	9	45
5	Borehole/well	0	0	0	0
6	Hand tools (Hoe, Spade)	15	100	0	0
7	Granary (grain store)	14	93	1	7

Source:- Command area household survey result, 2018

Farm Transport: - Farm transport is one of the key tools for irrigated agriculture inputs and outputs transportation. As a result, farm transport status assessment questions were prepared for sampled households and based on the responses from respondents, 18% of the respondents have donkey, 25% have mule and 57% have no other transport means other than carrying on human shoulder. Basically, donkey is the basic farm transport that used by the majority of households.

Educational Status of the Household: - Based on the household survey conducted in the command area,35% of the respondents are unable to read and write, 42% attained grade 2 to 10, 10% attained basic education and 13% of the respondents attend adult education. The educational status of the households of the command area could be referred in Table 5-6.

Table 5-6: Educational Status of Sample Households

Education Status	Quantity of HH	%
Unable to read and write	5	35%
Grade 2 to 10	7	42%
Adult Education	2	13%
Basic Education	1	10%
Total	**15**	**100**

Source: - Household survey result, 2018

Marital Status: - According to household survey results, marital status of the households consists of 97% married, 2% widowed and 1% single househlds. Polygamy marriage usually accustomed by some numbers of households in and around the project area while the dominant part of respondents has single wife.

Occupational Category: Agriculture is the most important economic base and it is almost the basic means of living for the people of the study area. The people of the command area are engaged mainly in primary occupation of crop production followed by livestock production. The primary occupation of all households is farming. No one of the sampled households engaged in supplementary income generating activities of beef fattening and pety trade services. This shows that currently the engagement in secondary income generating activities is not practiced yet and alternative occupations or activities are limited in the project area.

Household Income: - Based on the prepared household questionnaire, the sampled households were asked to state their annual income from crop production, livestock and secondary or supplementary sources and the households were responded on the amount of income from the crop, livestock enterprises and other supplimentry sources.

On the basis of the survey results, their average annual income is calculated at Birr 29,750 all of which is obtained from primary occupation of agriculture. The income ranges from a minimum of nearly Birr 20000 to a maximum of Birr 50,000.

Table 5-7: Income group of the Households

No.	Annual Income (Birr/HH)	Quantity	%
1	From 1000 to 5,000	0	0
2	Greater than 5,001 to 15,000	0	
3	Greater than 15,001 to 20,000	3	20
4	Greater than 20,001 to 30,000	4	27
5	Greater than 30,001 to 40,000	4	27
6	Greater than 40,001	4	27
	Total	15	100

Source:-Household survey result, 2018

The distribution of income shows that the range of income varies greatly and the income is relatively lower among farmers. The income group which is obtained from the detailed data of sample household survey is given in the above Table 5-7.

Similarly, the sources of income for the sampled households is different and the main sources (86%) of income is primary income from crop production followed by7% from livestock,4%heep and Goat and 3% Poultry prodction income sources. Table 5-8 indicates income sources of sample households.

Table 5-8: Household Income by its Sources

No	Sources of income	Amount	%
1	Primary Income	>40,000	86
4	Cow and Oxen sales and Services	22,670	7
6	Goat and Sheep	13,550	4
8	Poultry	11,470	3
	Total		100

Source:-Household survey result, 2018

5.1.5 Population Daynamics

A change in the overall size of a population is the result of collective effects of changes in fertility, mortality and migration. These three factors are collectively indicating population-change or dynamics or determinants or componenets of population change. Fertility and mortality are biological factors, while migration is purely non-biological. Therefore, population dynamics refer to those demographic indicators that affect the change in the numbers and structure of the population over time. These include the Total Fertility Rates (TFR), Mortality Rates (MR) and migration balance. TFR (the average number of children a woman bears during her lifetime). The factors for fertility depend on age at marrige (the age at which a person marries), status of women (access to education, employment, family decision making), socio-cultural factor (relegion, ethnicity and family structure) and the desire to have children of one sex over the other. The TFR in Shirka Wereda is approximately 6 (indicating a decline compared with 6.3 in 2000 and 6.5 in the 2005 period CSA figures for Oromia region). There is significant fertility variation between urban and rural areas.

Similarly, infant Mortality Rate (IMR: the ratio of live birth infants that die during their first year per thousand) is 52/1000 live births for the wereda. 52 infants die during the first year out of every thousand births. The IMR of an area depends on the standared of living, nutrition, medical services, personal hygiene and environmental sanitation. Data that describes both TFR and IMR are not avialable for the project kebele and command area.

Accordingly, migration patterns indicate high rural urban movements due to the push and pull factors existing in the two settlement pattern types in the area (rural & urban), respectively. The push factors include recurrent climatic change, lack of getting job opportunities in rural areas, low productivity of crops and lack of other social services in the rural areas, whereas expectations of better paying jobs and access to social services in urban areas are the major attracting factors. Currently, the zonall capital Assela, and wereda capital are the major destinations for the majority of the migrating inhabitants. Some neighboring small towns such as Bekoji and Sagure towns are targets for rural inhabitants seeking job opportunities. The main access asphalt road via to Assela is the major undertakings in the area that also attract migrating workers. Some of the Push and Pull factors descrribed on the FGD have summerized in the following Table.

Table 5-9: Causes of Migration (push and pull factors)

Push Factors	Pull Factors
Climate and natural Disaster	Employment Opportunity
Low crop & Livestock productivity	Improved Housing
Poor employment	Better Social Services and other facilities
Low wage	Better Stability
Instability or Lack of peace with the family	Better Living Standard
Housing Shortage	Favorable Environment
Poor Social Services	

Sources: FGD, Weteba Bedessa SSIP Socio-economy study, 2018

5.1.6 Family Planning Activities

The country in general has national population policy enacted on 12 July 1993. One of the strategies stipulated by the national population policy is reducing fertility rate by promoting family planning services and by women empowerment. On the basis of this, strong efforts have been made by all regions, zone and weredas, though much still remains to be done to realize the objective.

In this regard, one of the activities carried out in the project area, is teaching the community about the advntages of family planning and provision of family planning services (mainly contraceptive distribution) has been the major activity carried out and according to the Shirka wereda report of 2015/2016 E.C. the family planning coverage of the Wereda is 82%. However, thecoverage rate decreases when we go down to the kebele of the command area.

Similarly, the health extension workers in the project area reported that, the majority of women in the fertility age group have opted to use family planning service. Until recently the majority of the population used to favor having many children for some socio-cultural reasons.

According to information obtained from Wereda health office, the number of women using family planning services is growing from time to time in the area and this shows that attitude of the society is in the process of change in determining the number of their children.

This attitudinal change is attributed to decrease in the growing poverty as well as shortage of farmland, which has not allowed continuing with the earlier understanding. In addition, the outreach services rendered by the health extension workers have increased the number of women using family planning services. But much still remains to be done in the future to change the attitude of the people who consider it a blasphemy to use family planning. In general, the existing data indicates that fertility has been decreasing by an increasing rate in the area and in future the natural population growth will not continue at the current pace, and this leads to achieving the objectives of the national population policy.

5.1.7 The Existing and Future Labor Availability

Availability of human labor (unskilled and semi-semiskilled) is important during construction and operation of an irrigation project. The project is located near the wereda capital, Gobessa. Currently, there are a number of young age groups (male and female) who are land less as disguised unemployment/ dependent with their families; they can be feasible sources of labour

for the project implementation and according to the Command area Beneficiary Households Registration Result and household survey result, that 38% of the beneficiary populations are economically active age groups.

Similarly, the project is expected to contribute additional temporary work and intensive use of family labor during operation and create opportunity for land less due to extensive use of labor for irrigated agriculture. Currently the daily laborer wage ranges from 50 - 70 ETB per-day for unskilled and 100-120 ETB per-day for semiskilled labour.

At peak agricultural periods, labor is in great scarce for sowing, weeding and crop harvesting agricultural activities. The demand of labor is much higher than the available effective labor supply during those periods. In such periods, the farmers try to alleviate their labor shortage problem by means of hiring farmers that migrate from Neighbouring weredas of Oromia region both during the time of weeding and harvesting as well as by using their tradtional labour cooperation and exchange of labour arrangements.

5.1.8 Settlement pattern

On the basis of site observation, focus group discussion and household survey, the people are natives in the area and the settlement pattern of the community in the project area is scattered type. Group types of settlement also observed around social services such as schools, health posts, FTC, kebele administration and water points. Moreover, the cluster forms of settlement are formed into village along the main roads and 4-5 houses forming the clusters and the clusters were formed through different parental or marriage relationships. The social linkage, relation and traditional systems of communications are strong among Oromia people. Such type of settlement is important for mobilization of the farmers and will not be constrained since the distance between them is short which helps for the success of the project. The settlement helps the project for getting agriculture labor force, better for awareness creation and extension works and it also creates a good opportunity and make easy to mobilize the beneficiaries.

Food security is the availability and access to food at all times at individual, household and national level. Availability means that there is sufficient food either from domestic production or from import. Access to food relates to the ability and purchasing power of individuals or households to access food from markets at prevailing prices. Time refers to the availability of food continuously. In terms of time temporary shortage of food is referred to as seasonal food insecurity while its absence for long time refered as chronic food insecurity.

In order to determine the supply of food only production of cereals and grains are considered. The existing production level and projections for the project life time is made to estimate the food supply conditions of the project area. On food demand side the minimum subsistence consumption requirement and population projection is considered to estimate the overall demand for food in the project area. The Ethiopian government has designated 2100 kacl (225 kg or 2.25 qt of cereals per person per annum) as the minimum acceptable weighted average nutritional requirement. This threshold level is used to determine the annual food requirement/demand of the population in the command area.

Food supply situation of the project area is computed based on the cropping pattern and yield level indicated below by taking the major crops produced in the area and proposed for the project.

Food demand for project beneficiary population is projected by multiplying projected population by minimum subsistence consumption requirement (2.25 quintal per person per annum). Marketable surplus or food balance is the difference between cereal and grain production and food demand. Thus, deducting food demand from grain and cereal production only, the introduction of the project would bring surplus food production over and above the minimum

consumption requirement at subsistence level. Surplus grain and cereal production added with marketable vegetable outputs would substantially enhance both nutritional availability and income of households.

Table 5-10: Projected Populations, Food Demand and Marketable Surplus

Year	Male	Female	Total	Minimum consumption (qt)	Food Demand (Qt)	Grain and Cereal production (Qt)	Grain and cereals Food Balance/Marketable surplus (Qt)	Marketable Vegetable & Perennials (Qt)	Marketable Pulses (Qt)
2017	599	601	1200	2.25	2,700	1800	(900)	2630	690
2018	616	618	1,234	2.25	2,777	2100	(677)	3194	860
2019	634	636	1270	2.25	2,858	2400	(458)	3758	1,006
2020	651	635	1,286	2.25	2,894	3000	106	4330	1,150
2021	669	652	1321	2.25	2,972	3250	197	4370	1,200
2022	686	671	1,357	2.25	3,053	3250	278	4370	1,200
2023	704	669	1373	2.25	3,089	3250	197	4370	1,200
2024	721	686	1407	2.25	3,166	3250	84	4370	1,200
2025	729	706	1,435	2.25	3,229	3250	21	4370	1,200
2026	756	703	1,459	2.25	3,283	3250	(33)	4370	1,200
2027	774	720	1494	2.25	3,362	3250	(112)	4370	1,200
2028	791	741	1,532	2.25	3,447	3250	(197)	4370	1,200
2029	809	737	1546	2.25	3,479	3250	(229)	4370	1,200
2030	826	754	1,580	2.25	3,555	3250	(305)	4370	1,200
2031	844	776	1620	2.25	3,645	3250	(395)	4370	1,200
2032	862	771	1,633	2.25	3,674	3250	(424)	4370	1,200
2033	879	788	1667	2.25	3,751	3250	(590)	4370	1,200
2034	896	811	1,707	2.25	3,840	3250	(590)	4370	1,200
2035	914	805	1719	2.25	3,868	3250	(618)	4370	1,200
2036	931	822	1,753	2.25	3,944	3250	(694)	4370	1,200
2037	949	846	1795	2.25	4,039	3250	(789)	4370	1,200
2038	966	839	1,805	2.25	4,061	3250	(411)	4370	1,200
2039	984	856	1840	2.25	4,140	3250	(890)	4370	1,200
2040	1001	881	1,882	2.25	4,234	3250	(984)	4370	1,200
2041	1019	873	1892	2.25	4,257	3250	(1007)	4370	1,200
Total	20210	18595.98	38806.36		**87,314**	**77,550**	**848**	**105,682**	**28,906**

Source: - Existing Data Computation

In general, the introduction of the envisaged project would enable beneficiary households to attain self-sufficiency in terms of agricultural food production and earn better income from sales of surplus outputs of **Grain, cereals, Pulses, and** vegetables.

6. ECONOMIC BASE OF THE PROJECT AREA

One of the important assessments in the feasibility study and design of an irrigation project is the systematical investigation of the economic and livelihood base of the community in the project area. Accordingly, existing economic base of the project area refers to resource ownership (possession of factors of productions), the major economic activities in the area and the level of incomes which are the basis of livelihood of the people found within the command area. The proposed beneficiary community is under government food security program. The economic activities consist of primary (farming for agriculture economy) and secondary income generating activities. In order to analyze the economic conditions of the project areas from primary income generating activities, identification of existing land use patterns, the types of economic activities taking over those places, the level of outputs, the types and quantity of inputs usage and other income sources are required to be identified and analyzed as shown below.

6.1 LAND HOLDING AND LAND USE PATTERN

6.1.1 Land Holding and Land Tenure

According to the Revised Rural Land Administration and Use proclamationNo 130/2014/2015 of ONRS, the right to ownership of land is vested in the state and the public. Land is the common property of the people and individuals have the right to use and develop the land for production and inheritance. Furthermore, individuals have inheritance rights and the right to rent land and women have also equal rights of: inheritance, reallocation and land holdings.

Focus group discussion with irrigation users and elders confirmed that, the existing land holdings in the project area are the result of the land redistributions carried out in the past. Land redistribution at that time was required, as a result of prevailing land holding disparities and the prevalence of large numbers of land less farmers. Basically, family size and the size of the family holding were the two main criteria guided the redistribution process. The redistributed land was obtained from households who have over 3 hectares. Farmers reported that, till today there are a demand for land redistribution from land less and youth farmers in the kebele.

Therefore, there is no formal land distribution in the project area since 1997. As a result land could be acquired through inheritance, contractual rent and sharecropping. Parents are socially and culturally obliged to provide land plots for the matured or young married boys. Poor and weak households and women headed households usually give their holdings to their young boys or to individuals on contract basis or by share cropping arrangement

Currently, only one type of land tenure classification has been identified in the project area i.e. private owned. There is no communal land used for grazing and forest land.

The area is characterized by moderate climate, flat landscape and relatively populated. It is common that farm size and quality varies across households in the area. Table 6-1 indicates the number of respondent households and their holdining ranges in and out side the command area.

Table 6-1: Respondent Households and Size of Land Holding

Hectare per Households	Number of Respondent HH			
	Within the Command	%age of HH	Outside the Command	%age of HH
0 to 1.5	5	33	6	40
1.6 to to 2.50	4	27	6	40
2.51 to 4.0	4	27	3	20
>4ha	2	13	0	0
Total	15	100	15	100

Source: - Household Survey Result, 2018

Household survey result reveals that the majority of farmers (60%) farm holding size in the command area ranges between 1.00 to 2.5 hectares. It is described in the Table that farmers have farm plots inside and outside of the command area. However, the focus group discussion result reavels that the land holding of the household is more than enough to satisfy the basic requiremeent of the family. Most of the familiy members work together with parents and also parents share plot of land for youths Focussed group discussion and household survey result confirms that land certification books were provided to the majority housholds in the command area and few household remaining with their social personal issues.

6.1.2 Existing Land Use Patterns of the project area

Identification of existing land use pattern is an initial step that assists in analyzing the existing economic conditions of the people of the project area. The data and information that was used for classifying the land use patterns of these project places are focus group discussions, kebele level administration office, development workers of the kebele and wereda experts. Similarly, physical observation of the project area also helps to find out the land use aspects.

Accordingly, the total land area of Weteba Bedessa is 150 hectares. The land use pattern in the kebele and command area consists of cultivated land, grazing land, forest land, residential places, river, gullies, bush and shrubs. In the proposed project area cultivated land occupies the largest share of land utilization followed by grazing, forest and other land use patterns.

Table 6-2: Land Use Pattern of the Wereda, Kebele and Command area

No	Land Use type	Unit	Wereda Area (ha)	%	Weteba Bedessa Area (ha)	%	Command Area HH Survey Result	
							Area (ha)	%
1	Cultivated + Cultivable	ha	68990.48	58	197	62	63	100
3	Forest	,,	17852.76	15	60	19		
4	Grazing Land	,,	1472.28	1.2	10	3		
5	Residence	,,	27244.48	22.7	30	9		
6	Wast Land +village	,,	4080.4	3.1	20	6		
	Total		**119640.4**	100	**317**	100	**63**	**100**

Source: -DAs, Kebele, Wereda Planning report and Socio-economic Survey Result, 2018

6.2 FARMING AND CROP PRODUCTION

The major livelihood and economic base of the people of the command area was assessed through a household survey and supplemented by data from focus group discussion, public consultation and secondary data collected from the project area. It was also supported with site observations of the places under considerations. Accordingly; the main sources of livelihood and primary occupation of the communities of the area are agriculture, which mainly includes crop and livestock enterprises. Thus, agriculture is the main economic activities on which farmers passess his/her principal time and it is the major means of livelihood for the existing population and potential income generating activities. The community of the area practice agriculture since a long period of time using rain fed production system and crop production is practiced during Meher (main) season. The farming system ingeneral is mixed farming system that comprises crop production and livestock production. The area is practiced cereals-livestock based mixed farming system and smallholder commercial farming system is at infant stage. The mainstay of livelihood base of the community at the moment is Teff, Wheat, pea, Horsebean and Maize followed by livestock product & by-products.

Crops production has been the most important enterprise that supports household livelihoods and the fundamental economic base of the community. Crops such as Teff, Wheat, pea, Horsebean, Maize and Chickpea are the major rain fed crops. There is no Perennial crop such as hops at the homestead and eucalyptus tree also comprise some area of the farm land of the household. Crops like Teff, Wheat and Mize are the major cereals crops considered as subsistence food crops.

Crop cltivation activities are carried out using human labour in all stages of the production cycle from ploughing to harvesting. Land preparation, planting, weeding, harvesting, threshing and transporting is mostly done by human labour. Small hand tools like hoe, shovel and axe etc. have a major part in the tillage practices. Harvesting is undertaken by hand picking and sickle. They use improved farm inputs like fertilizer, improved seeds and agro-chemicals to enhance the crop yield in a very limited quantity. Mule and donkey cart are used for crops and crop residuals transportation from the filed to the homestead area and to storage places. The major constraints of crop production are erratic rain fall pattern, high prices of agricultural inputs, lack of improved seeds and irrigation water to the large command area.
Next to crops, livestock production and their by-products support the household livelihood. Cattle, sheep, goat, mule and poultry are the major livestock type in the area. Oxen, cows and mule play a significant role in the day to day economic activity of the community. Livestock are the major sources of milk, egg, meat, hides & skins. Moreover, livestock product and by-products serve as the most important staple food component of the households. Crop production complements livestock husbandry by delivering crop residues as a source of feed to livestock and livestock provides manure fertilizer and cow dung as a source of energy. Livestock feeding is conducted in traditional way using open grazing land. The communities highly focused on the quantity of their animals rather than the productivity (quality). Due to traditional livestock rearing practice the yield from animal production are found at a lower level and in return leads to low household income in relation to the potential. Lack of improved livestock breed, livestock diseases and improved livestock feeds are some of the major problems in livestock production systems.

The potential income generating activities of the people is the intensification of agricultural activities mainly cultivation of cash crops through the introduction of the proposed irrigation schemes. In addition to this, off-farm secondary activities are also the potential economic activities of the people.

6.2.1 The Farming System

Based on site observation across the command area, currently cereals-livestock based mixed farming system and limited smallholder commercial farming system at the bank of the Weteba Bedessa river is observed. Cereals-livestock based mixed farming system is the major in the area. Around the homestead some farmers are planting at the backyard ecualepteus tree.

In the periphery of the command area there is a small portion of land being developed by some farmers of the community while there is start up of construction of ponds by AGPin the proposed command area using pump irrigation from Weteba Bedessa river. Teff, wheat and maize are mainly grown for household food consumption.

In the farming system livestock sector has significant contribution to livelihood of the people by supplying organic fertilizer for field crops and for other backyard crops. Milk and other livestock by-products are main food sources for the family and generating small portion of household income. As observed during the study team field visit, the households have relatively large communal and private grazing land size where the cattle are kept in compound for grazing. Stall feeding with crop straw and grass is common in this system for fattening animals. In addition, open grazing is practiced inprivate/ communal grazing area.

6.2.2 Crop Production

The Wereda, kebele and the projct command area grow similar types of crops. Commonly, rainfed farming is undertaken in Meher cropping seasons. The main rainy season starts and extends from June to September and December, January and February are considered as dry months of the year, where full irrigation activities could be conducted. Mixed cropping is the most common production system that predominantly practicing around the field areas. Land preparation for field crops is carrying out by oxen and human labour.

The major crops grown during meher season include Teff, maize, wheat, Chick pea, Guaya and horse bean crops. According to the information obtained from wereda, kebele and DAs, currently, non-organic fertilizers are applied for some field crops and vegetables to obtain the optimum yield. Commercial fertilizer is the main source of fertilizer. Rainfed Crop area, yield and estimated production of the Shirka wereda is summerized in Table 6-3.

Table 6-3: Rainfed Crop area, yield and estimated production of the Wereda

Rainfed	2015/16			2016/17		
	Area, ha	Yield, qt/ha	Production, qt	Area, ha	Yield, qt/ha	Production, qt
Cereals Crops						
Teff	27050	10	270500	28310	22	424820
Wheat	24567	15	3977639	25654	18	461772
Maize	7618	21	156360	8162	30	244860
Barley	995	12	11940	996	23	22908
Sub-total	**60230**		**4416439**	**63122**		**1154360**
PULSE						
Chick pea	2453	22	54900	2468	22	54296
Haricot bean	2187	9	19683	2191	9	19719
Lentils	822	21	17496	809	21	16989
Sub-total	**5462**		**92079**	**4348**		**91004**
Total	**65692**		**4508518**	**67470**		**1245364**

Source: Wereda Agricultural and Natural Resource Office, 2018

The same types of crops are being grown at the selected project Kebele and the command area. According to the information from DAs currently rainfed production takes the lion share. The types of crops, crop area and crop production of Weteba Bedessa during the main rainfed season are described in the Table below

Table 6-4: Types of Crops Area and Crop Production of the wereda

S.No	Crop Type	2014/2015						2015/2016					
		Meher season			Belg season			Meher season			Belg season		
		Area Cult (Hect	Prod (Qunt)	Prod. per hect	Area Cult (Hec	Prod (Qunt)	Prod. per hect	Area Cult (Hect	Prod (Qunt)	Prod. per hect	Area (Hect)	Prod (Qunt)	Prod. per hect
1	**cereals**	**19174**	**610602**	32	**2067**	**21348.65**	**10**	**18574**	**629326**	**34**	**1776**	**36992**	**21**
	Teff	3481	66,169	19	0	0	0	1164	14879	13	27	270	10
	barley	2,171	59,263	27	1073	6223.4	6	1957	74770	32	839	15102	18
	wheat	9,484	321,010	34	193	762.35	4	11031	438088	40	113	1695	15
	maize	2,698	131,268	49	796	14328	18	2250	43172	19	797	19925	25
	sorghum	1234	29606	34	0	0	0	2143	57645	27	0	0	0

	oats	106	3286	31	5	35	7	29	772	27	0	0	0
2	**Pulses**	**2234**	**28863**	13	**3277**	**25920.8**	**8**	**1549**	**18245**	**12**	**2144.5**	**20396**	**10**
	Horse beans	571	6917	12	103	309	**3**	314	6536	**21**	126	1764	**14**
	Chick peas	6	48	8	0	0	**0**	125	1500	**12**	0	0	**0**
	Field peas	0	0		0	0	0	0	0	0	0	0	0
	Lentils	274	2970	11	1363	10904	8	19.5	200	10	515.5	4124	8
	Haricot beans	866	6520	8	468	2620.8	6	339.5	632	2	621	7452	12
	Vetch	85	4200	49	0	0	0	520	4160	8	0	0	0
	Peas	432	8208	19	1343	12087	9	231	5217	26	882	7056	8
3	**Oilseeds**	249	2709	11	14.45			100	1445				
	Linseed	239	2637	11	15	0	0	92	1365		0	0	0
	Sun flower	2	8	4	0	0	0	0	0	0	0	0	0
	Niger seed	8	64	8	0	0	0	8	80	10	0	0	0
4	**Other**	355	8725	25				852	57764	68			
	Fruit	11	165	15	0	0	0	30	750	25	0	0	0
	Vegetable	125	5000	40	0	0	0	249	26940	108	0	0	0
	Spices	184	2300	12.5	0	0	0	156	2184	14	0	0	0
	Beverage	5	60	6	0	0	0	168	950	6	0	0	0
	Root crops	30	1200	40	0	0	0	249	26940	108	0	0	0
	Grand Total	22012	650899	30	5344	47269.45	9	21075	706780	34	3920.5	57388	15

Source: wereda Socuoeconomic Report,2016

Table 6-5: Area and Crop Production of the Command area, based on the Household Survey

No	Crops	Area, ha	Crops Share in (%)	Production (qt)	Productivity (qt/ha)	# of sample HH Growing crops
1	Maize	14	22.2	140	10	13
2	Haricot bean	9	14.3	180	20	6
3	Mung bean	12	19	240	20	5
4	Onion	3	5	480	160	7
5	Potato	2	3	300	150	7
6	Millet	3	5	36	12	5
7	Teff	8	12.6	64	8	12
8	Check pea	3	5	30	10	10
9	Barley	5	8	75	15	10
10	SugarCane	4	9	1300	100	8
	Total	**63**	**100**	1945		**15**

Source:-Socio-economic Household Survey Result, 2018

6.2.3 *Existing Crop Land Utilization in the command area*

As shown on table 6.5, the net command area of the proposed project is about 150 hectare and this land is used for the production of crops using Meher rain fed season. The proposed

command area serves for the production of various types of crops both during rainy season and through existing small portion of traditional irrigation systems.

The area covered by various rainfed and traditional irrigation crops is computed from the household survey. Accordingly, the area covered by meher rainfall season and dry season by irrigation crops such as Maize 22%, H/bean11%, Mung bean18%,Onion 5%,Potato 5% Teff covers 9%, 12.7%, Barely 9% ,Sugarcane 9% and beans 18%. Table 6-6 shows the major types of crops grown in the area, with rainfall and traditional irrigation in the command area and the size of land utilization at the current time.

6.2.4 Irrigated Agriculture Experience of the wereda

According to the information from wereda socioeconomic report, there are a total of 95 irrigation schemes in the wereda of which 8 are modern while the remaining 87 are tradtional which covers a total of 3254.3 ha in the year 2015/2016, the total production obtained from this hectare of land was 1858018 quintals. The number of farmers benefited from traditional and modern irrigation was increased to 12586 (11833M, 753F). Out of the land cultivated by irrigation 2000 hectar) was covered by annual crops while1254.3 hectares of land covered by permanent crops from which 1,633,028 quintals and 224,990 quintals of production were obtained from annual and perinial crops respectively. Undermodern irrigation scheme farmers have a total of 149 motor pumps. Even though the amount of production that the farmers obtained from irrigation was increased, market problem, lack of infrastructure like road in some part of the district and crop pest and diseases are the major problems of the area.

Table 6.6 Irrigated area and production of the wereda

Irrigated Crops	2015/16			2016/17		
	Area, ha	Yield, qt/ha	Production, qt	Area, ha	Yield, qt/ha	Production qt,
Cereals/pulse/oil						
Maize	473	45	111,285	1473	45	111,285
Sub-total	473	45	111,285	1473	**45**	111,285
Vegetables						
Tomatoes	496	150	524,400	2,552	98	249,665
Onion	1261	150	339,150	188	160	30,080
Cabbage	1261	103	26,880	188	160	30,080
Sub-total	**2000**					1127610
Perennial crops	120	85	10,200	63	85	5,355
Banana	162	136	22,032	73	136	9,928
Papaya	13	55	720	20	74	1,470
Citrus	80	115	9,200	394	115	45,310
Mango	59	125	7,375	190	125	23,750
Avocado	420	9	3,780			
Chat	265	4	1,060	768	4	3,072
Coffee	207		224990	1254.3		60206.4
Sub-total	4,473	45	411,989	8,117	45	**953,312**
Round 1 Total	606	42	25,458	988	44	43,472
Maize						
Vegetables	14	249	3,492	112	248	27,676
Tomatoes	35	85	2,986	311	107	33,145
Onion	601	158	94,756	281	162	45,522
Potato	650	492	101,234	704	517	106,343
Sub-Total	**1,256**		**126,692**	**1,692**		**149,815**
Second-Total	2207	45	111,285	2473	2000	111,285

Source: - Shirka Wereda ANRD Office

On the contrary, irrigated agriculture at Weteba Bedessa river (Weteba Bedessa) hasnot been served as a good source of income generating activities for the farmers in the area because of lack of access to transportation andlinked with market and lack of sustainability of the traditional Irrigation structure.

Figure-6-1:- The proposed traditional Weteba Bedessa command area

6.2.5 Gross Income

Based on the household survey results, the Wereda, kebele and the command area grow similar types of crops. The annual volume of crops production of main and crop by-products of the command area are estimated on the basis of household survey results and field level estimation.

The major crops are grown with rainfed and traditional irrigation agriculture are annual and perinial types. The estimate includes production obtained from the rain fed and irrigation systems though irrigation started one year before. The computed average yield levels and crop areas are the basic inputs used for the estimation. The yield levels are computed from the household survey and they represent the average of all sample households. Accordingly, estimated volume and gross income of main crop by products are computed for the command area and given in the Table 6-7 below.
Similarly, household sample survey gross income is estimated by multiplying the volume of each type of crops and by products by their respective farm gate unit prices and the income from main crops and crop by-products are summed, which resulted total gross income.

Table 6-6: Crop Production and Gross Income of the Command Area

No	Crops	Area, ha	productivity	Production (qt)	Unit Price	Gross Income
1	Maize	14	25	750	700	525000
2	Haricot bean	9	20	150	2000	300000
3	Mung bean	12	20	100	700	70000
4	Onion	3	160	490	500	245000
5	Potato	2	150	840	450	378000
6	Millet	3	12	72	700	50400
7	Teff	8	8	96	1950	187200
8	Check pea	3	10	100	1800	180000

9	Barley	5	15	180	1200	216000
10	SugarCane	4	100	3250	1000	3250000
	Total	**63**		5018		**5,401,600**

6.3 LIVESTOCK PRODUCTION

Livestock production is also the major resources and economic activities of the household in the project area. Livestocks are historic as major source of traction power followed by milk, egg, meat, hides and skins, some times source of income have cultural values for the existing project beneficiaries. Livestock plays a significant role in the household economy.

In the area, there is moderate number of livestock owned by the community. The types of livestock available within the project area are cattle (dairy cows, oxen, bull, calves and heifers) goat, sheep, mule and donkey. Farmers occasionally use to benefit from livestock product and by-products such as sell live animals, butter, meat, milk, egg, hides and skins. The people also get annual benefits from the consumption of various products of livestock resources.

Animal feeding is mostly open grazing, which is common system on the existing extensive grazing area and swampy area. Teff, barely straw and other crop residue also serve as prominent animal feeds in the area. All animals are local breed having poor productivity and quality. Cows are providing on the average 1 to 1.5 litre of milk/day. Based on the wereda livestock development office secondery data, livestock production supports 20% of annual income or livelihood of the community in the wereda. Detail description on the management and similar aspects of the livestock production system are summerized below.

6.3.1 Importance of Livestock

The importance of livestock ranges as a source of traction power, source of income, food and they have also cultural values. According to the focus group discussion, kebele office and farmers, the reasons for keeping different types of livestock species include:

Table 6-8: Importance of Rearing Livestock, by Order of Importance

Species	As a source of: -						
	Milk	Meat	Cash Income	Draft Power/ Transport	Egg	Honey	Manure
Cattle	1	1	1	4			4
Sheep		1	2				
Goat			4				
Donkey			2	1			
Mule			1	1			
Poultry/Chicken		2	1		2		
Honey bee			1			2	

Cattle: -The main purposes of rearing cattle in the project area is for draft power, milk, manure, source of cash income, prestige and meat, in the order of importance. As indicated above, farmers own a larger number of cattle than others in the village are considered rich; they are respected by the community. In addition, as farmers prepare compost from different sources, those keeping large numbers of cattle are preparing compost. Oxen have versitle pourpous sources of traction power, meat and farmers give the fisrt priority in the area. The second importance of livestock is for milk production and the milk is for home consumption, for market and to process it into butter, yoghurt and white cheese (ayib).

Sheep and goats: - these animals are kept primarily as source of income. Due to their fast growth and quick recovery, small ruminants are much preferred. They are important for their meat and skins.

Equines: - among the equines mule and donkeys have an important place in the project area, especially for the transport of goods and people. Currently, Mule uses for cart and plays a significant role in the project area as a result; they now transport large numbers of goods and povide services. Donkeys and Human labour is the basic means of transport for harvested crops, outputs and people and other high volumes of goods to the market and carrying back to home.

Poultry: - Poultry serve primarily as source of income. It is used to cover household expenses, especially for women. The eggs are also consumed by the household, especially children and adults (when they are getting sick).

The livestock number of the command area, the kebele and the Wereda are given in the Table below.

Table 6-9: Livestock Number of the Wereda and Command Area

No	Type of Livestock	Wereda	Livestock of the command area
1	**Live Stock (total)**	**373,971**	
	Cattle	218,605	1783
	Sheep	60572	695
	Goat	48924	4250
	Donkey	20,725	750
	Horses	15,755	-
	Mules	8,897	565
2	**Poultry**	96,863	1565
3	**Beehives**		
	Modern		3
	Traditional		1535

Source: HH Survey, DA Office and Wereda ANRD Office

6.3.2 Livestock Management Practices

The communities in the project area have their own management practices with respect to herding, housing, feeding and breeding. These are summerized in the following ways: -

Herding: - livestock in the project area stay out in the field during most of the day. Cows are milked in the mornings and evenings, where they are supplemented with crop residues and any forage available around the homestead. Livestock in the kebele stay in the open private and communal grazing land. Some households keep livestock specially oxen, calves, milked cows, lambs and kids around the homestead and providing supplementary feeds.

Housing: - the livestock holdings per household are few and the animals share the same roof with the owners. Some individuals, who can afford, construct small sheds/barn attaché to one side of the house. In all cases, calves, lambs and kids are kept separate adjusent or in one class of the main house until they become strong enough.

Feeding: - natural pastures, teff, barely straws and crop residues are the main feed source for livestock during dry season. As part of the management, oxen and cows are given additional forge in the mornings and evenings. The rest of the livestock are not at all supplemented and depend only on what they get from the field.

Breeding: - natural mating using local sires are the breeding practice. There are no improved bulls or artificial insemination service in thse area. But the wereda livestock and fishery development office is currently providing artificial insemination services, which is very limited in its supply.

6.3.3 Feed Resources

The main sources of livestock feed are natural pastures, crop residues and thinning/weeds and tree foliage. According to kebele agricultural and natural resource development staffs and farmers, about the majority of feeds were derived from natural pastures and crop residues. Crop residues and hay are conserved and well preserved in the dry season and provided to the livestocks when the supply of pasture diminishes. They are given as a supplement to dairy and oxen animals at any time of the year especially in the mornings and evenings. Improved forage and industrial by-products are available from town.

6.3.4 Livestock and Water

In the project area, the Weteba Bedessa river, is the main sources of water for livestock, which use them when they are out on the communal and private grazing land. During the rainy season, livestock depend more on rain water accumulated in depressions and other sources including shallow wells.

Figure-6-3: Weteba Bedessa area as Grazing Land

6.3.5 Livestock Products (Outputs) and Utilization

Basically, the main outputs expected from livestock include draught power, milk, meat, eggs, hides and skins and manure.

Draught Power*:* -The use of oxen and bull in the project area is very common for cultivation and crop harvest thrashing. Cultivation and thrashing frequently are conducted by trained oxen, bull and human labour. Similarly, the bull is also used for mating or reproduction purpose and sources of income. Agriculture is imposible without livestocks traction power supply.

Milk*:* -The sources of milk are only cattle in the area. The milk from cow is used for a variety of purposes; it is consumed, processed and sold. As the quantity is small, most of what is produced is consumed in the households. If there is any surplus it is converted into products of longer shelf-life. This is mainly butter, but other products include yogurt and white cheese (ayib) be consumed in a short time.

Meat*:* -Cattle, sheep, goats and poultry are the potential sources of meat production of the project area. Farmers mostly used sheep, goat, poultry and cattle as source of meet at home and when they mostly travel urban centers. Animals are slaughtered on special occasions and on the most common annual religious and public holidays.

Hides and skins*:* - Hides and skins are important outputs in the farming community. They are used for making household items (bed mat, stools, winnowing fan, leather strip for binding, grain bag (goat skin), etc. Farmers and urban dwellers air dry hides and skins and deliver to traders coming to the market. These are further processed and sent to the central market. Currently according to the focus group discussion conducted in the project area the prices of hides and skins were not encouraging and they mostly used in the house rather than delivering to the market.

Eggs*:* - Eggs are obtained from poultry. As the management of feeding, health and other needs is low, the expected egg production is also very low. The eggs and chickens are for market. Some are for home consumption, especially for children. Some are also hatched into chickens as replacement stock and for future sales. These outputs are a significnat source of income for women and it covers frequent expendtures in the household.

Manure*:* -Dung is waste from livestock but has value in agricultural activities. It is used as fertilizer, fuel and plastering of the house. Communities in the project area try to conserve the dung to be used for different purposes. Women and children are the responsible body to keep and collect livestock manure for fuel and house plastering.

6.3.6 Animal Health

There are variations in occurrences, incidence and seasonality of the different livestock diseases in the project area. Animal health is taken care of by the veterinary clinic which serves for the community of the 2 neighbouring kebeles, there is no animal health post located at the project kebele level. Since the Wereda clinic is far away, the communities depend on the animal health posts for animal health services that serve on cluster basis. The types of animal health service provided by the wereda clinics and kebele animal vetrinery service include vaccinations and treatments. The major animal diseases are pastuerolosis, trypanosomisis, anthrax, lumpy skin diseases, pest diseases of ruminants, fasiolosis, external parasites, black leg and others.

6.3.7 Livestock Marketing

The markets that the communities in the project area frequently use are primary and secondery markets. The livestock markets that the community serve for livestock trading is Gobessa and Sole town where by two times a week (Saturday and Wensday at Gobessa and 1 times perweek at godo Market on Thursday. Accordingly, the number of animals coming to market is a lot and transported on their hoof. The market is frequently used by the kebele and not managed well. Traders from Gobessa and Assela and neighbouring Weredas also come to buy and sell

livestock. Traders from the surrounding area and the community converge on the market on the weekly fixed market day. The major constraints of livestock production are lack of improved feeds, improved livestock breeds and breeding systems in the project area.

6.3.8 Fisheries

Fishing activity is as simple as that of poultry production and other livestock rearing even in their garden by harvesting water. However, there is no fishing activity in the district since there is no large water body like lakes, pond and river and due to the farmer's inability to practice fishing activities using water harvesting.

6.4 OFF-FARM/ NON-FARM INCOME

The information obtained from household survey reveals that there is no significant off-farm income in the area. except some farmers selling honey and butter as source of income.

7. MARKETING, POST-HARVEST SERVICES AND AGRO-INDUSTRIES

7.1 THE IMPORTANCE OF MARKETING, POST-HARVEST SERVICES AND AGRO-INDUSTRIES

Assessing the situation of inputs and outputs marketing, post-harvest services and the agro-industries are significant in the implementation and development of an irrigation project. The main purpose of this irrigation project is to improve the well-being of the surrounding population in general and the would-be beneficiaries in particular. The direct aim is to increase household's income and improve their nutritional status. But the whole array of other benefits, such as increased economic activity, technological upgrading, attracting young male and women workforce to the rural area and others would emerge from this project.

In this context, supplying irrigation water to the farmers' field is not an end result. An integrated approach is mandatory, with a strong base towards value creation, competitiveness and human resources development.

The basic point is not only how well farmers produce but also how they can maximize their net benefit. Everyone is now aware that high yields and good production systems are not enough if one fail to convert the products into good money and turn a profit.

It is very common that for subsistence farmers an increase in production will improve their nutritional standard. However, the targets of this Irrigation Projects should go beyond the individual food-security level; it should aim at creating surpluses and thus increase food supply for the general population and make products that can be traded in the market, i.e. produce surplus products for commercialization.

In this connection food security can be assured not only by producing food for self-consumption, but also by producing other products, selling them and generating funds to buy the necessary food. This path to food security translates into commercially-oriented activities and development of a dynamic market.

In irrigated agriculture, value creation is an important and significant incentive that triggers the willingness and motivation of farmers to participate in the project. The market place is where the efforts of the farmers are converted into money, and both the post-harvest and agro-industry are functionally situated between the market and the farmer. In this way the inputs and outputs marketing, post-harvest and agro-processing possibility and opportunity assessments are important in establishing the best way to generate value and to justify the investment in the project.

The main aim of the post-harvest and agro-industry assessment is to increase the essential value of the raw products obtained in the farmers' field, adapting them to the demands of the consumers. Postharvest operations increase value by preserving and upgrading the value of the products while maintaining the typical characteristics of the raw material. Agro-industry increases the value by transforming the raw materials into products with changed characteristics.

Therefore, this Marketing, Post -harvest Services and Agro-Industries assessment will focus on the assessment of inputs and outputs marketing, assessing the options and opportunities of Post -harvest Services and Agro-Industries for the existing and recommended crops at the proposed project level.

7.2 INPUT SUPPLY AND PRODUCT MARKETING

Based on the information collected from the kebele and command area, farmers have access to market information, through mainly on informal communication with their friends, neighbors and relatives as well as using their mobile phones and radio.

Accordingly, better-functioning agricultural markets for both inputs and outputs are a crucial area that could affect the agricultural production positively. It is not only important to link producers and consumers of irrigated agricultural products, but it is also producers and input suppliers, who for all practical purposes represent a life line towards better irrigated agriculture production and productivity.

7.3 INPUTS SUPPLY AND MARKETING

7.3.1 Agricultural Inputs Supply and Utilization

Agricultural input supply and distribution is one of the key challenging activities in the current production system. Farmers in the area use limited inputs due to their higher prices and other supply chain constraints. Based on the available data at kebele level and household survey results, farmers use agricultural inputs for crop production. Some of the agricultural inputs marketing are described as: -

Fertilizers: - Fertilizers are the basic crop production inputs currently used in the area, which includes NPS, NPS+Boron, NPS-Zink + Boron and UREA. These fertilizers are available from Lemon multipurpose service cooperatives. In the project area, fertilizer demands are collected and summerized at kebele levele by the development agents and provided to wereda and at wereda level the wereda ANRD Office agricultural inputs supply team compile the demand and provede to zone and the zone also compile the demand at zone level and the total fertilizer demand of the region summerized at regional level. In frocasting the demand of fertilizer, mostly trend analysis of previous years consumptions was applied and the overall demand of fertilizer hand over to Union with reference to the particular project area. The Unions are responsible to import and distribute to farmers through primary multipurpose coopeartives based on their perviously summerized demands. Based on the key informant discussion with DAs, kebele managers and primary cooperative excutive committee memebers the deamand of fertilizer were compiled for Meher, Beleg seasons. Since traditional Irrigation started recently there is no a trend of inclusion of fertilizer demand from the farmers. The distribution of fertilizer is both on cash and credit basis. Farmers who have financial limitation can get fertilizer through credit arrangement from Oromia credit and saving institution (OCSI) and primary cooperatives. Moreover, farmers mostly utilize manure for some crops. The utilization of fertlizer and other inputs are summerized in the following figures

Accordingly, between the years 2014/2015 to 2015/2016 production year the amount of chemical fertilizers (Urea, NPS and DAP) distributed to the farmers was increased from 20,519 quintal to 25,913.5 quintals while the amount of improved seed was decreased from 2489.5 quintal to 546.5 quintals between the years 2014/2015 to 2015/2016. On the other hand, the number of herbicides was also decreased from 7504 liters to 5897 liters showing a decrement by 1606.9 liters during the year under consideration.The above data was the data collected from farmers' Service Cooperatives only.

Table 7-1: Fertilizer and agro-chemicals distributed by Primary cooperatve

Type of input	20014/2015 Amount(qt.)	2015/2016 Amount(qt.)
Fertilizers		
NPS(qt)	19745.5	23673
DAP (qt.)	49.5	0
Urea (qt.)	724	2240.5
Improved Seeds (qt)		
Wheat	1939	447
Barley	120	0
Maize	248.5	99.5
Teff	182	0
Peas	0	0
Herbicides		
Topic	0	0
Herbicides (lit.)	7504	5897.1
Pesticides (lt)	0	8336.1

Source: Socio Economy report 2017

Improved Seeds: - Similarly, improved seeds are obtained from Wereda Agriculture and Natural Resources Development Office, Agricultural Input Supply and Marketing Process, private suppliers and market sources at Wereda market. Currently, maize improved seeds such as BH-540, Teff improved seed such as Cross-37 and Kuncho (DZ) and Check pea improved variety "Mariye" area avialable from primary cooperative at Gobessa town multipurpose cooperative based at Gobessa Town

Agro-chemicals: - Agro-chemicals are also an important input for crop production in the proposed project area. Ago-chemeicals such as 2-4D, teff, Mega-Ban and Pea and tricel were used and avialable in the primary multipurpose cooperative center and private suppliers' shop at Gobessa and Assela.

7.3.2 Agricultural Inputs Supply and Distribution Challanges

Basically, increased crop production and productivity are a function of agricultural inputs utilization. The current utilization of improved agricultural inputs at the project area such as improved seeds, fertilizers, agrochemicals, appropriate farm tools and implements, as well as improved management practices, are very much limited, thus contributing to the present low level of crop productivity and production. Therefore, an intensive effort should be made in future to ensure increased use of improved crop production technologies. However, some of the clallanges mentioned by farmers are summerized below: -

- High costs of agricultural inputs (fertilizer and improved seeds), they mentioned that input costs are high as compared to output prices are low
- Agricultural Input supply and distribution chain is very long and complex at the current situtaion
- Vegetable seeds and fertilizers are not timely supplied for irrigated agriculture
- Lack of irrigated agriculture demonstration sites and activities

- Input distribution centres are far from farmers locality
- Capacity limitation of pirmary cooperative on inputs purchase, stocking, timely distribution and managing farmers demand
- Pirmary cooperatives lack sufficent storage for agricultural inputs

Table 7-2 Labour and Oxen reqirements

Maize	Haricot bean	Mung bean	Garlic	Pepper	Onion	Sugarcane
16	12	12	12	12	20	12
16	12	12	12	12	20	12

Source: Irrigation Agronomy report

Table7-3 Input Requirements per Hectare for Selected Crops Jawiwachu kebele

Crop type	Variety	Seed (kg/ha)	NPS	Urea	Pesticides
Maize	BH-661/shone/Jibat	25	150	100	Dimethoale 4% O.25 kg/ha and Ampligo 250ml/ha
Haricot bean	Red wolaita/Nasir	80-100	100	50	Perimyphos methyl 50 % w.P 1 kg/ ha by mixing with water.
Onion	Bombie red /Melkam (Pusa Red)/	3	100	250	3.5 kg/ha rate of mancozeb and zineb or 3 kg of ridomil for 3 to 4 times by mixing up with 600 liters of water
Garlic	Tsedey 92	1200	100		*Tilet 0.5 kg/ha*
Mungbean	Rasa/MH-97-6	20	100	60	CREST 25% EC and Dimethoale 4% O.25 kg/ha and 1 lt/ha respectively
Pepper	Marko fana	750 gm -1kg	100	200	*Mancozeb 3.5kg/ha, Cypermetrin 10% 0.5kg/ha*
Sugarcane	Local	17,000 seedlings	100	100	Endosulfan35% EC 2lit/ha

7.4 OUTPUTS MARKETING

7.4.1 Local Markets for Crop and Livestocks Production

The major agricultural products in the Weteba Bedessa Irrigation Project area are cereal grains and pulses, which are marketed at local, wereda and zonal market places. On the average, farmers travel 10–35 bigger km to the market place. How ever, there are also some local market places with in the vicinity of the project.

. Major market places and Number of Market Days are summerized in the Table below.

Table 7-2: Major Local Market Places and Number of Market Days

No	Market Name	Distance (in km)	Number of Market Day Per Week		Means of Transport		Types of Market
			Major	Minor	Outputs	Human	
1	Gobessa	35	2 (Wensday and Saturday)	Thurs day	Vehicle, Donkey /Mule Cart		Main
2	Sole	40	Saturday)	-	Vehicle Donkey /Mule Cart		Local, Primary
3	Medero	15	Thursday		Motor Bikes&Donkeys	On foot/Shoulder	Local, Primary
4	Kela	10	Thursday	-	Donkeys&Motorbikes	On foot/Shoulder	Local, Primary

Source: - Focus Group Discussion, 2018

7.4.2 Project Area Rainfed Crop Production and Market Supply

The Weteba Bedessa Irrigation Project lies in Shirka wereda and the project command area falling within two Kebeles administration. Crop production uses mainly rainfed and one-season crop production during the "meher" season. However, some of the households in the study area at the bank of Weteba Bedessa river started to develop vegetable crops through motorized pumps to l supplement their livelihood through production of irrigated crops. Major crops adopted and produced in the project area include the following: -

- Grains –Teff, maize, Wheat and barely, Sorghum,
- Pulses – chickpea, bean and Lentils& Horse bean

A variety of crops are grown in Shirka wereda and Weteba Bedessa project area**,** including grains, pulses. Summer season (rainfed) production data (2013/2014 to 2015/16) for project wereda and project kebele indicated in the following two Tables. For the wereda a total of 1,427,399quintals, of which grain production accounts for the greatest share (91%), followed by pulses5% vegetables (4%), and (0.2%) oil crops (1.10%), as shown in Table below.

Table 7-3: Area and Crop Production in Shirka wereda

No.	Rainfed	2015/16		2016/17		Total Production for 2 years	%
		Area, ha	Production, qt	Area, ha	Production, qt		
1	Cereals Crops	21241	631950.7	20350	666318	1,298,269	91
2	Pulse	5511	54783.8	3693.5	3693.5	58,477	5
3	Oil Seed	249	2709	100	1455	4,164	.0.2
4	Vegetable	**355**	**8725**	**852**	**57764**	66,489	4
	Total	**27,356**	**698,169**	**24,996**	**729,231**	**1,427,399**	100

Source: Wereda Socioeconomic report 2017

In Weteba Bedessa a total of 29,912 quintals were produced in the last two years, of which grain production accounts for the greatest share (59%), followed by vegetables (36.5%), pulses (4.5%) as shown in Table below.

Table 7-4: Area and Crop Production of the Weteba Bedessa (2015/16)

Crop Type	2015/16		2016/17		Total Production for 2 years	% for two years
	Area, ha	Prod, qt	Area, ha	Prod, qt		
Cereals Crops	60	648	65	**702**	1,350	14
Pulse	50	900	50	950	1,850	19
Vegetable	27	3470	22	2827	6,297	67
Total	**137**	**5,018**	**137**	**4,479**	**9,497**	**100**

The crop production of Weteba Bedessa as shown in the above table is **0.7%** of the wereda crop production in which cereal crops comprises the major proportions.

7.4.3 Irrigated Crop Production and Market Supply

Site observation, focus group discussions and farmers in the Wereda indicated that there is practice of traditional irrigation using Weteba Bedessa water sources Moreover, there is a vast amount of land and water resources, with an environment conducive to the expansion of irrigated agriculture.

Based on the 2016/2017 wereda socioeconomic report, crop data obtained from the Shirka wereda Agriculture and Rural Development Office, the total traditional irrigated land area was 8117 ha, with a total production of 1,690,585 quintals of which vegetable takes line share which is 1252670, perinial crops 190,000qt, cereals 190,540 qt and pulses qt. The major crops grown under this system of production include vegetables (mainly onion, potato, tomatoes, green pepper and cabbage) 72.4%, fruits (mainly mangoes, bananas, Sugarcane and papayas) 12.2% and grains (mainly maize) 12% and pulses 3.4%. However, existing irrigation management practice is very traditional, with little modern know-how, and has resulted in low productivity. Farmers also indicate low extension services and input use. (Table 7.5)

Table 7-5: Area and Crop Production and supply of Irrigated Crops at wereda level

Irrigated Crops	20151/6		2016/17		Total Production for 2 years	% for 2 years
	Area, ha	Production, qt	Area, ha	Production, qt		
Cereals	2348	160440	2722	**190,540**	350,980	12
Vegetables	5000	900000	6593	1252670	2,152,670	72.4
Perennial crops	909	172710	1000	190000	362,710	12.2
Pulses	1126	45040	1275	57375	102,415	3.4
Total	**4,473**	**411,989**	**8,117**	**1,690,585**	**2,026,744**	**100.00**

Source: - Wereda Socio Economic report,2017

7.4.4 Consumption and Marketing Share of Crop Products

Focus group discussion and household survey was conducted in the project area to identify how much volume of the crop production of the household consumed at household level, how much of volume the crops production is marketed, used for seed and saved at household home? The conclusion derived from the discussion and household survey shows that the percentage of the shares differs from crop to crop and at the very beginning farmers grows with his plan of food crops and cash crops. For instance, the majority of wheat, Maize crops are grown for household consumption and some home stead vegetables are grown as a source of cash. However, mostly farmers grow much of their produces for marketing purposes to cover various input costs and other social and economic requirements and consume small percentages at household level. As a result, the general estimate obtained through household survey, the majority of the crop products are delivered to the market. Following the assessment and household survey, the share of local and marketable crop products is estimated and given in the following Table.

Table 7-6: Consumption and Marketing Share of Crop Products, of 2015/2016

No	Crops	Crop Production, qt	Disposal in (%) for			
			Consumption (%)	Sales (%)	Seed (%)	Saving (%)
1	Teff	96	62.00	34.00	2.00	2
2	H/bean	150	77.25	20.90	1.88	1.85
3	Maize	750	50.45	49.55	0	0
4	Barely	180	10.53	68.42	21.05	0
5	Chick pea	100	37.5	62.5	0	0
6	Mung bean	100	10	90		
7	Onion	490	10	90		
8	Potato	840	5	95		
9	Millet	72	6	94		

Source: - Socio-economy Household Survey

7.4.5 Market Infrastructure and Market System

Regarding the marketing infrastructures and marketing system, in the project area there are primary, secondary and tertiary (terminal) markets at the local, wereda and regional level. At the local market local grain traders, assemblers or merchants collect crops from individual farmers and transport to wereda market and at wereda (secondary market) there are wholesaler and retailers. Traders (wholesaler and retailers) at the wereda (Gobessa town) market purchase grains, pulses, vegetables, oil crops and transport to zonal markets at Assala

Open market which is taking place directly between private producers, traders and consumers; local grain traders, assemblers, whole sale merchants and retail traders; the number of transactions in the flow of goods from farmers to final consumers also high at Gobessa town the twon is close to Sagure and Assala. Assela is the major collection points; transportation and storage facilities are also available and the open markets have better share.

7.4.5.1 Market Actors

Weteba Bedessa and adadi Mariam towns are the primary markets for grains, cereals, vegetable cropsand livestoks. Sellers are individual farmers and local traders. Buyers are local collectors, wholesalers, traders, retailers, flour mills, and urban consumers. The market actors also include several assemblers and traders who retail grains and cereals in small quantities.

7.4.5.2 Marketing Channels

The marketing channel in the project area is a simple conventional marketing channel where transactions are mainly performed among different marketing agents. During harvest time, farmers supply cereals and grains and sell in the markets to collectors, wholesalers, retailers or directly to consumers. Some potential farmers also sell outputs directly to flour mill factories situated in Bekoji and Assela. The most important pattern is that bulk of cereals, pulses and vegetables are bought by wholesalers and traders who have warehouses in Assela and transport same to regional markets.

7.4.5.3 Storage

Farmers store their crop products mainly Teff, wheat, Barely and maize in traditionally prepared storage facilities called ''Gotera ''. They also store cereals and pulses by sacks in their house, which is currently most prefered mostly for security and sefty reasons. There is no well-prepared preservation or cooled storage or refrigerated facilities in the project area for easily pereshiable fruits and vegetabales crops, which need attension in the implementation of the project.

7.4.5.4 Communication and Transport

Communication is the basic tools that smoothly facilitate marketing of farm products. The availability of road network and transport facilities are important marketing functions enabling speedy movement of agricultural produces between the supply source and demand center. Farmers in the project area get market information through radio, television, mobile phone, cooperatives, local traders, their friends and adjacent working farmers. The market infrastructures and facilities information such as storage and standard weighing/balance scale are only available at terminal market. The branch office of Ethiopian commodity Exchange (ECX) provides up –to-date market information on prices of major commodities traded both nationally and at global market in Assela.

Similarly, farmers used to travel on foot, mule cart, bicycle and some times motor bicycle backs to the marketing places. The major means of transportation of outputs and inputs are mule or donkey cart. Vehicles such as ISUZU, heavy trucks, bus, Minibus, Bajaj in towns and others are also available and used to transport outputs, inputs and people to Weteba Bedessa and Adadi mariam town market during market day. Farmers use mule cart to transport potato, tomato and other vegetables to the market. Tomato and other vegetables mostly they will not keept for long time around the homestead and they transport to the market immediately after harvest.

7.4.6 Competitive Marketing Forces

It is impossible to think marketing of products without due consideration of near-by and international forces that influence competition and effective marketing of products. These forces include: entry of new and technologically efficient producers, power of buyers and sellers, and possibility of new substitutes, completion and collaboration.

Especially small farmers are among those very much susceptible to unfair competition. Therefore, it is necessary to identify: the key forces at work in the competitive environment; the underlying forces and their influences; the nature of competitors in relation to these competitive forces; their strengths and weaknesses in relation to the key forces at work; and how can they be managed. The agricultural commodity supply chain which is dominated by small holders is highly competitive and need to consider these competitive factors in order to follow-market oriented production. Such competitive forces situated both in the domestic and international market can be taken as opportunities for improvement.

Table 7-7: Analysis of the Competitive Forces

Forces	Forces and Direction of Influences	Proposed Strategies
Entry of new and efficient producers	• The entries of new irrigation users in the region particularly in the Addia Ababa Catchment Development Corridor and nearby Oromia zones are expected. • Entrance of producers of high quality fruits and vegetables • Uncoordinated selection and production of commodities may cause market problem or saturation of local demand • Imported products especially processed fruits and vegetables at cheaper prices	• Should coordinate the selection and production of high quality products with export potential • Promotion and creating or facilitating linkages with institutional consumers, processors and exporters • Establish grades and standards, quality control and grading centres • Improve appropriate warehousing infrastructural facilities • Introduce proper grades and standards • Relieve information and institutional bottlenecks • Industrial processing of some portion of the products • Plan/Devise marketing strategies while planning production
Power of buyers	The power of buyers may be magnified when there is:- • Excessive supply (like maize, tomato, potato and others frequently happened in marketing of some SSIP projects) due to uninformed production decision • Lack of sufficient market information, • Less transparent trading system	• Establish a well transparent primary collection marketing centre around Kunzla with all required facilities • Enhancing transparency of transactions, provision of sufficient and timely market information • Shortening the marketing channel via directly selling to the consumer or processing into value added products • Plan/Devise marketing strategies while planning production • Industrial processing of some portion of the products
Power of Input Sellers	• Delayed supply of fertilizer and other inputs • Increase in input prices	• Existing near by Cooperative Union should supply the inputs • Supplement with natural fertilizer
The threat of substitutes	• There are no domestic substitutes but imported substitutes especially processed products are expected	• Enhancing quality and freshness of produce • Training and awareness of products and competitors
Competitive revelry	• This may apply here but it can be thought in terms of entry in the export market where sanitary and phi to-sanitary standards influence exports • May also come from the import sector	• Trade negotiation and policy measures • Improve quality and ranges of products produced • Plan/Devise marketing strategies while planning production

7.4.7 Prices of inputs and Crops Outputs

Based on our observation and discussion with Development Agent at project area, well recorded price data is not available in the area. The consultant study team applied the current year farm gate prices prevailed in the months where crops are largely delivered to the market by the producers. The farmers used to deliver their grain products and other vegetables mainly immediately after harvest during the months of January, February and March. The farm gate prices of crops and inputs are shown in the Table below.

7.4.7.1 Farm Gate Prices

Farm gate prices are prices of crops actually received by farmers and are attributable to their crop production activities and not to any other services. In other words, these prices should therefore, relate to farm gate ones which are actually received by the farmers at the project site.

Similarly input price information collected at project sites mainly cost of fertilizer, improved seeds, packing materials, wage for unskilled and skilled labour cost was assessed and taken at the project area for consideration in the analysis.

Table 7-8: Input Farm gate prices

No	Inputs Price	Unit	Price
1	Labour	Birr/MD	70
2	Oxen	Birr/OD	80
3	Fertilizer		
	NPS-Boron, NPS-Zinc + Boron	Birr/qt	1478
	Urea	Birr/qt	1211
4	**Seed/Seedlings**		
	Maize (BH-540)	Birr/kg	31.2
	Maize (Limu)	Birr/kg	58.1
	Maize -Pioner-3253	Birr/kg	42.8
	Teff (Cr-37)	Birr/kg	26.7
	Barely	Birr/kg	25
	Haricot Bean	Birr/kg	15
	Wheat	Birr/kg	28
	Niger Seed	Birr/kg	12
	Millet	Birr/kg	6.8
	Vegetables		
	Tomato	Birr/kg	2015/2016
	Cabbage	Birr/kg	600
	Garlic	Birr/kg	35
	Potato	Birr/qt	500
	Onion Seed	Birr/kg	500
	Pepper	Birr/kg	60
5	**Others**		
	Sacks (packing materials)	Birr/Sacks	10
	Land Tax	Birr/ha	55
	Agro-chemicals	Birr/lit	255
	Farm Implements	Birr/ha	1,755
	Miscellaneous costs	%	3%

Table 7-10: Farm Gate Unit Prices of Main Crops outputs and by products

Status	Crop	Crop and Crop by-product Price per Unit		
		Unit	Main Crop	byproduct Crop
Proposed Crops	Wheat seed	Birr/qt	1250	50
	Haricot bean	Birr/qt	2000	15
	Onion seed	Birr/kg	500	
	Head Cabbage	Birr/kg	7	
	Tomato	Birr/kg	30	
	Maize	Birr/qt	700	15
	Onion	Birr/qt	1600	
	Potato	Birr/kg	9	10
	Pepper	Birr/kg	60	
	Carrot	Birr/kg	9	
	Red beet	Birr/kg	9	
	Garlic	Birr/kg	20	
	Teff	Birr/qt	1950	70
Existing Crops	Maize	Birr/qt	700	15
	Barley	Birr/qt	1200	50
	Sorghum	Birr/qt	450	
	Horse bean	Birr/qt	1600	15

Status	Crop	Crop and Crop by-product Price per Unit		
		Unit	Main Crop	byproduct Crop
	Grass Pea	Birr/qt	1800	10
	Pepper	Birr/kg	60	
	Sugarcane	Birr/qt	700	

Source:-Household survey, Focus Group Discussion and DA office

7.4.8 Existing Situation of Agro-Processing Industries

Agro-processing adds value to the raw products, supports agricultural transformation, and expands the time and space span, along with the marketable value of, agricultural products.

Agro-processing–i.e., manufacturing activities that process agricultural raw materials into intermediate products or final consumption – is none existence especially in the project area and farmers Agro-processing or value adding activities are traditional in the project area.

According to the ONRS Bureau of Finance and Economic Development (BoFED), as well as the investment promotion agency of the region, the region has a modest industrial base. The available data base– BoFED (2006) –data source indicates that these industries are engaged in food processing, textile, woodwork, metalwork and other industrial activities, but lacks detailed information on percentage share of each industrial category. BoFED also indicates manufacturing industries are limited in number and majorities operate at low capacity, mainly due to shortage raw material supply.

7.4.9 Market Potentials for Project Production

The number of agricultural products to be sold is determined from proposed cropping pattern along with yield projection in the project life. The following table shows the yield projection of the project.

Table 7.9 Area development and production

Crop types	Area	Prodn (Qt)	Area	Prodn (Qt)	Area	Prodn (Qt)	Area	Prodn (Qt)	Area	Prodn (Qt)	Area	Prodn (Qt)
Maize	60	1800	60	2100	60	2400	60	3000	60	3300	60	3600
Haricot bean	30	390	30	1020	30	1260	30	1500	30	1500	30	1500
Mung bean	50	300	50	700	50	750	50	800	50	900	50	900
Onion	14	2240	14	2758	14	3276	14	3794	14	3794	14	3794
Garlic	8	360	8	400	8	440	8	480	8	320	8	600
Pepper	6	30	6	36	6	42	6	56	6	56	6	70
Tomato	8	1360	8	1600	8	1840	8	2400	8	2800	8	2800
Sugarcane	13	0	13	9750	13	10400	13	13000	13	15600	13	15600

Source: Irrigation Agronomy report

Table 7-10: Crop Production in qt at Full Project Operation Stage

Year	Main Crops in qt							
	Onion	Pepper	Maize	Haricot Bean Seed	Mung bean	Garlic	Sugar Cane	Total
1st year (yr2nd)	1120	15	900	195	150	180	9750	12310
2nd (yr3rd)	1379	18	1050	255	175	200	10400	13477
3rd year (yr4th)	1638	21	1200	315	188	220	13000	16582
4th year(yr5th)	1897	28	1500	375	200	240	15600	19840
5th year (yr6th)	1897	28	1650	375	225	260	15600	20035
6th year - 25th year(yr7th)	37940	560	33000	7500	4500	5200	312000	400700
Total	**45871**	**670**	**39300**	**9015**	**5438**	**6300**	**376350**	12310

Source: Irrigation Agronomy report,2018

Deducting minimum household consumption from total Maize production, will give us marketable surplus. The other crops such as Haricot bean, wheat seed, onion, pepper, cabbage, tomato and potato produced and assumed for marketable as a source of cash. The following table illustrates the total projected marketable agricultural output of the project for the next 10 years.

Table 7-9: Projected Marketable Agricultural Output

Year	Main Crops in qt											
	Maize Crops			Mung bean		Marketable Haricot Bean Outputs		Marketable Vegetables Outputs				
	Total Production	Household consumption (qt)	Marketable Maize output (qt)	Seed	Grain	Seed	H. Bean	Onion	Pepper	Garlic	SugarCane	
1	900	454	446	15	135	5,034	195	1120	15	180	9750	
2	1050	530	520	18	157	6,712	255	1379	18	200	10400	
3	1200	605	595	19	169	8,726	315	1638	21	220	13000	
4	1500	757	743	24	216	8,726	375	1897	28	240	15600	
5	1650	832	818	20	180	8,726	375	1897	28	260	15600	
6	1650	832	818	23	202	8,726	375	1897	28	260	15600	
7	1650	832	818	23	202	8,726	375	1897	28	260	15600	
8	1650	832	818	23	202	8,726	375	1897	28	260	15600	
9	1650	832	818	23	202	8,726	375	1897	28	260	15600	
10	1650	832	818	23	202	8,726	375	1897	28	260	15600	
Total	**14,550**	**7,340**	**7,210**	**208**	**1,867**	**81,554**	**3,390**	**17,416**	**250**	**2,400**	**142,350**	

Source: Existing Data Computation

7.4.10 Marketing Constriants

Marketing is basically considered as the engine of development of an area. However, markeing in the project area has been challenged by different constraint s. The major constraints includes"

- Lack of efficient market information on prices,
- Lack of storage and involvement of brokers
- Lack of efficient transportation
- Poor road network,
- High Marketing costs
- Low credit facilities for marketing

8. GENDER ANALYSIS

Currently, gender analysis, climate and nutrition are the basic cross cutting issues that should be mainstreamed in all development and community-related activities. Gender refers to the relation ship and interaction between male and female and the focus here is on female perspectives and on an assessment of the part they play in the division of labor as well as in decision making at different levels, including community and households.

Morover, gender assessment and analysis was undertaken with respect to domestic, agricultural and livestock labour divison, asset ownership, decision making, control over asset and financial resources, the degree of access to resources, decision making and benefits, and other basic rights of men and women. In Shirka wereda in general and project area in particular, many cultural, social, economic, legal and environmental constraints affect both men and women. However, the magnitude of the problems is found to be critical when it comes to women and children.

Women in the area are the backbone of the family in terms of performing domestic duties such as cooking, house keeping, carrying for children, carrying elderly and sick members of the family, fetching water and fire wood, milking cows and purchasing items for home consumption like salt, coffee and other provisions. In addition to the above tasks, which society has decreed is solely their duty; they also actively participate in outdoor field work such as planting/sowing, cultivation, weeding, harvesting and threshing, as well as herding of all family livestock. Thus, their role is triple i.e. productive works, reproductive work and community services or management role. Backyard poultry production is commonly practiced in the project area and is, traditionally, the responsibility of women. Women are also dominantly involved in pottery, weaving and petty trade.

The right of women is recognized at national and regional levels of ONRS and on the basis of the regional land use proclamation; women have equal rights and empowerment with men to possess, use and administer the rural land. Husband and wife have common land holding, shall be given a joint certificate on their holdings.

In the consultation session with women, they discussed that the irrigation project would bring significant benefits to females by giving them an opportunity to grow and produce in their own backyard gardens for income generation. This will also reduce dependency on their male counter partners. In the project area, there are women headed households who have their own agricultural land and this constitutes significant number of the total number of beneficiary farmers. During the consultation, women expressed that much of the lands are managed by male households.

Their land holding does not have difference as compared to male headed households. Regarding to their educational status, the result of the household survey shows that many of female households are unable to read and write. However, there is no restriction for women not to attend education. The health conditions of them are also supported with health extension workers and health facilities around them. As per the consultation made with them, they expressed that they will participate in the construction and operation of the project. Recognizing active role that could be played by them, women are proposed to be included in the study and design comittee and IWUA as per the AGP guideline. Moreover, the project could bring many improvements for female population by widening their participation under different project implementation stages.

Divison of Labour:- Focus group discussion pointed out that women are active and major participants in almost all types of agricultural production activities and their labour, idea generation and decision making contribution is significant in the society, without their active involvement, the survival of family and the community as a whole would be at risk. Women in the project area are forced to lead hard and tedious lives that require them to work very long hours, it usually takes long hours per day to complete their domestic tasks.

Women's tasks also involve purchase of household consumables like salt and coffee and frequently, selling of small quantity of farm produce. Marketing of larger quantities and selling of livestock is commenly the role of men. This indicates that, even if women are active participants in the family's livelihood creation, they still do not share the family's wealth proportionately. Analysis of the household socio economic survey shows that the average workload of women in the project command area is significantly higher than the load of their male counterparts. The number of daily work hours per woman in those areas averaged over 16 hours compared with 11 hours for men.

Women are involved in crop, livestock and public works. Women's involvement in agricultural activities such as weeding, cultivation, harvesting, livestock husbandry, poultry production and petty trade activities are considerable. Almost all housing activities such as child care, food preparation, milking of cows, take caring of animals, fetching water from long distances, marketing and firewood collection are carried out by women. Conversely, men are mostly responsible for activities relating to agriculture and community management.

Accordingly, children's share of the work load is also significant, particularly for girls who spend much of their time assisting their mothers. Since agricultural production depends on intensive labour, this has a direct impact on children as they are forced to work when they should be attending school. Therefore, the division of labour is unequally divided among the male and female members of a family with the latter bearing the heaviest burden.

Women are also exposed to physically stressful activities which have a direct impact on their health and hinder them from the participation in development activities. They are further disadvantaged by poor living conditions aggravated by lack of grain mills, lack of potable water at a reasonable distance, weak health services and lack of credit access that could alleviate their work burden and improve their livelihoods. Moreover, the condition of women headed households becomes extremely poor and over burdened by too many tasks.

Access to and Control Over Resources:-There is a legal framework that assets are jointly owned by husband and wife. However, regarding the degree of access to and control over resources such as livestock, farm land, crop produce and family wealth, men have the domination and women have limited rights to such resources. Husband has control over all assets and income from sale of major livestock and agricultural produce. In the project area women's mostly has control over the income from the sale of livestock products and livestock by-products such as butter, egg, poultery, small-ruminanats and local-alchole drinks, small-vegetables and firewood. Currently the existance of mule and donkey pulled cart has provided a significant advantage for women, the cart transport drinkg water, transport crops and crops-by products from the field, take grain to the grain mill and transport heavy load goods and services.

Decision Making:- Regarding decision making, wife takes the decision to the sale of animal products, poultry and crop-by products. However, any decision related to borrowing of cash or in kind, marriage and health care of the family are taken by the husband. However, during our focus group discussion the discussant indicated that this day things are changed women's are participating in decision of land allocation for crops, allocation of household income for the family

basic expenditure and the husband also assisting wife in fetching water, fire wood supply and child care and house management.

Membership and Participation in local institutions: - Female household members are members of local institutions. They are members of saving and credit associations, religious institutions, kebele council and kebele cabinet memebers. Participation of women in community development activities is generally limited, due, according to Wereda and kebele officials, to cultural influences and lack of awareness and empowerment. However, women can be active participants in irrigation development and managemenet. They can be members of IWUA committee member and water users' group committee. The disparity between women and men is also observed in the illiteracy rates where more women than men are illiterate. Their illiteracy status has a negative impact on household management and participation in development activities. Women and children, particularly girls, are also victims of traditional malpractices and are exposed to many abuses.

All of these difficulties increase the vulnerability of women and children during seasonal food shortages, health epidemics, water shortage and other disasters. At the moment, some efforts are being made to address gender issues, through the establishment of micro-finance institutions (MFI), providing credit and through the establishment of women's affairs and women leagu at Wereda and kebele level. However, the effort made has fallen short of bringing about any meaningful and widespread results. The situation makes it necessary to focus future development plans on addressing the various challenges and difficults of women. Generally, prior and during project implementation the following suggestions should be carefully considered: -

- The involvement of women in all irrigation project cycle should be mandatory
- The nationally issued policy on women should be put into practice at the Woreda and kebele levels of the project area.
- Cultural limitations and factors that hinder women participation in all spheres of life should get attention.
- Continuous education, training and experience sharing tasks should be the core methods of bringing improvement and change in the status of women.

9. SOCIAL SERVICES AND PUBLIC INFRASTRUCTURES

Availability of social services, agricultural support facilities and public infrastructures are the basic inputs for the successful planning, implementation and sustainable operation of an irrigation project. Some of the social, agricultural support services and public infrastructures available in the project area described in the following ways: -

9.1 EDUCATION

Basically, education is the first and fundamental parameter for socioeconomic transformation of any societey. The level of education, know-how, skills, awareness and motivation of society determines, to a large degree, the technologies and systems utilized as well as the speed with which the proposed processes are adopted and put into practice.

Thus, an assessment of the educational structure, coverage and problems within the study community will have direct implications on the proposed irrigation development project and its chances of success. The educational system in the country is generally divided into the formal and non formal sub sectors. The formal includes the primary, secondary and higher education categories. The non-formal generally includes alternative methods and adult education.

According to the farmers group discussion in the project area there are one primary (1-8) and one secondery (9-10) schools in Gobessa town. The primary and secondery school in the project area provides eduction services to the people in the project area including family members (particularly children and youth) and adjacent kebeles population. Similarly, the gross school enrollment rate for grade 1-8 in the Wereda is 97% and net school enrollment rate is 93%.

Table 9-1: Schools in the Wereda and Project Kebele

No	School Level	Quantity		Number of Students		Number of Drop Outs	
		In the Wereda	In the Project Kebele	In the Wereda	In the Project Kebele	In the Wereda	In the Project Kebele
1	1-8	58	2	40410	353	1.1%	3.5%
2	9-10	3	-	4630	-	5.18%	-
3	11-12	1	-	1026	-	1.2%	-
	Total	**62**	**2**	**46,066**	**353**	**7.48%**	**-**

Source: -Wereda Education Office and Schools at the project site

Similarly, the numbers of schools' teachers at the Wereda and kebele level were also assessed with their sex composition. The education level or qualifications of teachers are increasing as school grade increases. The numbers of teachers at each school level and sex composition were presented in the following Table.

Table 9-2: Number of Teachers in the Wereda and project kebele

No	School Level	Quantity at Wereda Level			Quantity at Project kebele Level		
		Male	Female	Total	Male	Female	Total
1	1-8	507	528	1035	4	3	7
2	9-10	130	36	166	-	-	-
3	11-12	34	4	38	-	-	-
	Total	**671**	**568**	**1239**	**4**	**3**	**7**

Source: -Wereda Education Office and Schools at the project site

Based on the socio-economic assessment, student dropout was one of the problems in the schools around the project area and it was found that the dropout rate is3.5% for the project area and 2% on the average for the Wereda. Similarly, the main bottlenecks that were identified and that explained the low enrolment rate included: Keeping children at home due to labour requirements, long distance to school and marriage arrangements. However, bsed on our discussion it was found that the schools management and parent committee also conduct follow up of drop out of students. Regarding farm household education status that, 54% of the respondents were unable to read and write, 2% followed adult education, 30% attained grade 2 to 6 and 14% of the respondents followed basic education. With different analysis, the education level of farm households were at lower level and formal and non-formal education during farmers' slack period should be the basic requirement in the project area.

Kindergarten: - According to the data obtained from Statistical Abstract of the district, the Woreda's had two kindergarten (one private and one other) while the number of children enrolled was increased from 418 to 441 between the year 2014/15 and 2015/16.However, the number of student enrolled to this level is very low as compared to the school age children in the district. However, the number of teachers with which these schools provides education was increased from 6 in the year 2014/2015 to 14 in the year 2015/2016.The major problems of kindergarten school is lack of well organized management system and little attention by government concerned bodies.

Primary Schools: So as to achieve universal primary school education coverage, the number of primary schools was increased from 59 to 60 between the year 2014/2015 and 2015/2016.Likewise, during the same years the number of students enrolled to school was increased from 40,546(47.80% female) to 45932 (47.79% female) with slight increment by female students in number. During the same year, the numbers of class-rooms were increased from 753 to 877 however the number of teachers was increased from 827(31.08% female to 867(34.14% female).

Student to teacher's ratio and student to classroom ratio are one of the major indicator used to measure quality of education as compared with the standard set by Oromia education bureau. Accordingly, the student to classroom ratio was decreased from 53:1 to 52:1 while student to teacher's ratio was increased 49:1 to 52:1 between the years 2014/2015 and 2015/2016.

Secondary education (9-10) - In the district there were three Secondary (9-10) school located in GobesaTereta and Gado towns in the year 2014/2015 and four secondary (9-10) in the year 2015/2016. During the indicated years, the number of students enrolled to these school was

increased from 2495(42.89% females) to 3418 (43.77% females) with slight increment in female students. Likewise, in the 2015/2016, the number of classroom were 54 while the number of teachers were also 137(9.49% female).

Since Student to classroom ratio and student to teacher ratio is crucial for measuring education quality. Accordingly, the student to classroom ratio and student to teacher ratio were 63:1 and 25:1 respectively in the year 2015/2016.

Regarding preparatory school, there was one preparatory school since 2001 that provide education for 376(36.97%female) & 445 (37.08% female) students by 21 & 20 teachers during the year 2014/2015&2015/2016 respectively.

TVET: since 2010/2011, there was one TVET school in the district that provides technical and vocational training for 172 & 157 students in different field of study in the year 2014/2015&2015/2016 respectively.

Table: 4.1.Number of school and number of student enrolled by level of school

Type of owner	2014/2015				2015/2016			
	No of school	Male	Female	Total	No of school	Male	Female	Total
	Government							
First cycle (1-4)	20	15,656	14000	29656	1	17827	15939	33766
Second cycle (5-8)	56	5450	5304	10,754	58	6100	5944	12044
Senior Secondary school (9-10)	3	1425	1070	2495	4	1922	1496	3418
Preparatory school (11-12)	1	237	139	376	1	280	165	445
	Private or Kindergarten							
Nongovernment Kindergarten School	**2**	186	232	418	2	222	213	441

Source: District Education Office

Education Quality: The quality of education can be judged from educational qualification of teachers, students- teacher ratio, student-class ratio and student-text book ratio. Accordingly, from total primary school teachers who teach at this level, the number of teacher who holds BA/BSC was increased from 63 (7.62%) to 139(16%) between the year 2014/2015 and 2015/2016. This indicates there was slight increment in the BA/BSC teachers. So as we see from

the given information, Education office of the district would be expected to do more to improve the quality of education. To this end, only depending on the above parameters are not enough to measure educational quality of a district. Hence, we have to look into other factors mainly continuous professional development program, teachers' commitment to teach and students' commitment to receive what teachers say

As far as the number of teachers by level of school was concerned, according to the professional standard set by Oromia education office, the number of TTI, diploma & degree teachers was increased from 742 to 684 in primary school (1-8) between the year 2014/2015 to 2015/2016. Moreover, the number of MA/MSC (second degree) (teachers was also increased to 3 teachers in secondary schools (9-12) during the year under consideration. Such an improvement of the professional level of teachers in all level of schools plays a significant role in improving the quality of education.

On the other hand, the number of students promoted to different grade level and higher institution are one of the indicators for ensuring the quality of education. Accordingly, of the total grade 10th students who sat for national examination only 64.2% could get a chance of joining preparatory school. This indicates the quality of education is deteriorating that needs special attention in the district. For details see the table below

Table: 4.2. Number of teachers by levels of schools' sex, level of Education and types of schools

level of education	2014/2015			2015/2016		
	Male	Female	Total	Male	Female	Total
First cycle (1-4)						
TTI	47	21	68	32	21	**53**
Diploma	230	143	373	143	121	**264**
Degree	8	4	12	30	10	**40**
Total	**285**	**168**	**453**	**205**	**152**	**357**
Second cycle(5-8)						
TTI	4	0	4	7	0	**7**
Diploma	184	50	234	166	55	**221**
Degree	47	4	51	84	15	**99**
Total	**235**	**54**	**289**	**257**	**70**	**327**
Secondary school(9-10)						
TTI	0	0	0	0	0	**0**
Diploma	5	0	5	5	2	**7**
Degree	95	12	107	119	11	**130**
MA/MSC	0	0	0	0	0	**0**
Total	**100**	**12**	**112**	**124**	**13**	**137**
Preparatory school(11-12)						
TTI	0	0	0	0	0	**0**
Diploma	1	0	1	1	0	**1**
Degree	15	2	17	15	1	**16**
MA/MSC	3	0	3	3	0	**3**
Total	**19**	**2**	**21**	**19**	**1**	**20**

Source: Shirka District Education Office

Table: 4.3. Number of students sat for National Examination and promoted to the next level by sex

Year	**sat for National Examination**			**promoted for grade 9th**		
	Male	Female	Total	male	Female	Total
Grade 8						
2014/2015	1050	946	1996	1038	938	**1976**
2015/2016	782	794	1576	737	756	**1493**
Year	sat for National Examination			**promoted for preparatory**		
Grade 10						
2014/2015	540	435	975	375	251	**626**
2015/2016	608	480	1088	520	362	**882**
Year	sat for National Examination			**promoted for University**		
Grade 12						
2014/2015	88	38	126	48	15	**63**
2015/2016	116	73	189	106	64	170

Source: Shirka District Education Office

Adult Education: - is one of the primary focus areas of education Bureau to eradicate illiteracy in the region. To meet this objective the district education office establish adult education center and provide education. Based on the data obtained from district education office, the number of adult education center was increased from 6 to 49 between the year 2014/2015 and 2015/2016. Likewise, the number of adult who attend education was increased from 228 to 3845 during the year under consideration.

Table: 4.4.Number of adult education centers and participants by sex,

Year	Number of adult education centers	participants by sex		
		Male	Female	Total
2014/2015	6	128	100	228
2015/2016	49	2678	1167	3845

Source: Shirka District Education Office

Health Services

According to the wereda Socioeconomic report, to improve the primary health service coverage, the number of health center was increased to five in the year 2015. During the same year, the number of health post was also increased to 33 while the number of clinics was decreased to zero. On the other hand, the number of private clinics was decreased to fifteen in the year under consideration. This gives 41,963:1 and 6,358:1 ratio of population to Health Center and health post respectively in the year 2015 which is far below the recommended standard by WHO (25,000 and 5,000).

Health Personnel: In the government health facilities the number of health personnel was increased to 167 while the number of health personnel in private health facilities was increased to 26 in the year 2015. By types of profession, The number of nurses, Pharmacy and lab.

Technicians, Health office was increased to 62 ,6 ,9&6 respectively in the year under consideration. Like wise, the number of health extension workers was increased to 83 in the indicated years .For more information see the table below.

Table: 9.3. Number of health Institution and Personnel by ownership

Institution/Health personnel	2014/15		2015/16	
	Gov	Private	Gov	Private
Health Institution	**38**	**22**	**38**	**21**
Health Center	5	0	5	0
Clinic	0	17	0	15
Health Post	33	0	33	0
Drug Shop	0	0	0	0
Rural Drug Vender	0	5	0	5
Health Profession	**118**	**25**	**167**	**26**
Nurse	54	19	62	19
Health Assistance	0	0	0	0
Health Office	8	0	9	1
Laboratory Technician	7	1	6	1
Pharmacists	7	5	6	5
Sanitarian	1	0	1	0
Health Extension Workers	72	0	83	0

Source: Shirka District Health Office

Maternal and Child Care

The district with the help of health extension workers provides different type of health extension services house to house services like family planning, awareness creation on environmental health protection, personal hygiene and sanitation, toilet construction, refuse disposal built etc.

They use model family graduation to scaling up best practices and the services for all farmers household and farmers family members. This helps them to increase the health extension services in the district. To this end, two health extensions workers were assigned for each peasant associations. Totally there were 83 health workers in the district in the year 2015/2016

In addition, the district health office provides different type of treatment and children and mothers vaccination to improve the health coverage of the district. Accordingly, the number of children access to different types of vaccination (BCG.DPT1. Measles, DPT3). For details see the table below.

Table: 9.4. Number of children vaccinated by year and type of vaccination

Type of Vaccination	2015/16	2016/2017
BCG	7039	6509

Measles	6339	6675
DPT1	6831	7200
DPT3	6663	6892

Source: Shirka district health office

However, inadequate potable water supply, malnutrition and low awareness for improved environmental sanitation account for low health status in the district. In addition, poor eating habit and under utilization of health services also play a great role for the existence of different diseases.

Ten top diseases: According to the data obtained from Shirka district health Office, the highest prevalent disease in the district was AFT (17.96%) is followed by Pneumonia (17.69%) and Diarrhea (Non-blood) (13.26%) during the year 2014/2015. However, in the year 2015/2016 the highest prevalence disease was AFP (19.22%) followed by pneumonia (14.82%) and Dyspepsia (13.67%). For details see the table below.

Table: 4.7. The ten top diseases in the district

2014/2015				**2015/2016**			
Type of Diseases	**Number**	**%**	**Rank**	**Type of Diseases**	**Number**	**%**	**Rank**
AFT	3446	17.96	1	AFP	4640	19.22	1
Pneumonia	3394	17.69	2	pneumonia	3579	14.82	2
Diarrhea (Non blood)	2544	13.26	3	Dyspepsia	3301	13.67	3
Dyspepsia	1806	9.41	4	Diarrhea (Non blood)	2657	11	4
Trauma	1592	8.29	5	Acute per	2104	8.7	5
Acute per	1575	8.21	6	Helminthes	2074	8.59	6
Helminthes	1338	6.97	7	Urinary tract	1773	7.34	7
Urinary tract	1286	6.70	8	Trauma	1671	6.92	8
Violence other	1177	6	9	Anemia	1234	5.11	9
infection of Skin	1030	5.37	10	Unspecified disease	1109	4.59	10
	42703	**100**	**Total**		**9548**	**100**	

SOURCE: SHIRKA DISTRICT HEALTH OFFICE

Harmful Traditional Practices: Like the Zone as a whole, there are many harmful traditional practices that are being widely practiced in the district. Among these, raping, Butta, Dhala**,** , Gebera, etc can be mentioned as an example. But now a day's these harmful traditional practices are decreasing from time to time because of the awareness creation by the health extension workers.

However, it should not be forgotten that there are many useful traditional practices that should be appreciated and are being used by the people of the district. Idir, Debo, Ikub and others are mentioned as an example.

Table 9-3: Health Services Institution in the Wereda and project kebele

No	Health Institutions	Wereda				Project kebeles			
		Private	GoV.	NGO	Total	Private	GoV.	NGO	Total
1	Hospital	-	1	-	1	-	-	-	-
2	Health Center	-	5	-	5	-	-	-	-
3	Health Post	-	30	-	30	-	1	-	1
4	Health Satellites	-	-	-	-	-	-	-	-
5	Clinic	-	-	-			-	-	
6	Laboratory Center	-		-		-	-	-	-
7	Rural Drug Shop	7	-	-	-	-	-	-	-
8	Pharmacy	-	-	-	-	-	-	-	-

Source:-Wereda Health Office

According to the data obtained from the wereda health office and the discussion conducted with the wereda health staffs there are 24 Nurse (of all categories), 13 health officers, 47 health extension workers and 5 Laboratory Technicians. As mentioned above currently there is no health extension worker at the project kebele poviding health services.

Table 9-4: Health Personnel working in the Health Services Institution

No	Health Institutions	Wereda			Project kebeles		
		Male	Female	Total	Male	Female	Total
1	Medical Doctor	-	-	-	-	-	-
2	Nurse (of all categories)	15	9	24	-	-	-
3	Health Officer	10	3	13	-	-	-
4	Midwives	-	-	-	-	-	-
5	Health Extension workers	-	47	47	-	-	-
6	Health Assistant	-	-	-	-	-	-
7	Pharmacy Technicians	5	-	5	-	-	-
8	Laboratory Technicians	-	-	-	-	-	-

Source:-Wereda Health Office and Lagdiya Health Center

As per the information obtained from the wereda health office and Gobessa Health Center, the wereda is located in the weynadega climate area and there are human diseases. Some of the ten top human diseases of the wereda and project area in their order of importance are summarized and presented in the Table below.

Table 9-5: Top ten leading Diseases of the Wereda and Project Area(2016/17)

No	Top ten leading Diseases	Wereda	
		Number	%
1	AURTI	4833	20.73
2	Diarrhea	3579	15.35
3	Pneumonia	3336	14.31
4	AFTI	2807	12.04
5	Trauma	2635	11.3
6	Dyspapsie	11527	6.55

7	UTI	1191	5.11
8	Helmenthione	1147	4.92
9	Disease of vasinskeletal	1133	4.86
10	Others	1126	4.83
	Total treated people	**2331**	**100**

Source:Wereda Health Office

Table 9-6: Top ten leading Diseases under five, 2016/2017 in the wereda

No	Top ten leading Diseases	Wereda	
		Number	%
1	Acute Feber Ilness	2496	15.75
2	Pneumonia	2223	14.03
3	Dyspepsia	1997	12.6
4	AURTI	1806	11.04
5	Dihorea	1564	9.87
6	Helmenthiasis	1503	9.48
7	Trauma	1276	8.05
8	Thyphoid Fever	1261	7.96
9	**Urinary Tract Infection**	**871**	**5.50**
10	**Disease of Muscule Skeletel**	**852**	**5.38**
		15849	**100**

Source: - Wereda Health Office

There are health extension workers in the rural and urban kebeles, who are responsible for malaria care, haygine and sanitation, family planning and other diseases protection mechanisms. Moreover, supply of birth control medicine, delivery of community health extension education, vaccination, child and mother care also the responsibility of the health extension workers.

The number of health institutions seem sufficient in distribution with in the wereda though far between, necessitating long travel distances and time for most inhabitants of the project area. When ever health service is considered, the numbers and locations of the health units is only one dimension of the health delivery system along with their capacity to provide reliable, relevant and highquality service. The study team's analysis has indicated that lack of drugs and medicine and insufficient professional personnel severely limit the quality and coverage of service provided in the area.

9.2 WATER SUPPLY

According to the wereda Socio economic report, the potable water coverage of the district is at its low good stage as compared with other part of the zone. Based on the data obtained from the district's Water, Mineral and Energy Resources development Office, of the total rural population of the district, the number of populations supplied with potable water supply was decreased from 149,334 (73.14%) to 138,835 (66.17%) between the year 2014 and 2015. By area of residence, of the total population the of the district, the number of rural population access to potable water supply was decreased from 70.64% to 59.96% while the number of urban population access to potable water supply was decreased from 100% to 63.66% during the years under consideration. This is mainly due to the frequent occurrence of nonfunctionality of the supply schmes

Table: 4.10. Total population supplied with potable water

Year	Rural	% of the total	Urban	% of the total	Total	%
2014/2015	131,926	70.64	17,408	100	149,334	73.14
2015/2016	114,930	59.96	13393	63.66	138,835	66.17

Source: Shirka District Water, Mineral & Energy Office

Regarding the number of water distribution scheme, the number of spring development and distribution schemes was increased to 54 in the year 2015.

The avialble water supply souces or schems of the wereda includes deep wells with pipe systems, hand dug wells, protected spring, deep well, shallow wells and rivers, in which agregate or overall potable water supply coverage of the wereda is 55.14%, the non-functionality rate of the schems are 15% and also water sepage in towns are 48%. Water supply sources for the people and livestock population in the project area is mainly Weteba Bedessa river followed by 1 deep well serving for about 2300 people. In the ellele walana kebele there is only one water point which serves only limited number of the community in the project area. The majority still us the river water as the main source of driningking.

9.3 Access Road and Other Social Infrastructures

Since recent years the road density of the country and road network raveled fast improvement. So as to improve the density and standard of roads, the regional government is reported to be involved in numerous road building and upgrading programmes in different parts of the country and in the region.

How ever, there is no access road to the project site which equals nearly 3km.It is only either on foot or draft animals to travel to the site.This situation greately hampers the economic and social situation of the community.During the discussion held with the community road was considered as the most serious problem along with the need to upgrade existing tradition irrigation structure.This dry weather road joining the project site with Wereda town (Gobessa) and also inter-kebele dry weather road constructed on labour bases by the community, which joins kebele or sub-village with the main all-weather road. 4km Access road moderately exists in the project area i.e from Main gravel roard to the project kebele. Currently communication and transport of inputs and outputs is possible during dry season while it is difficult to transport during rainy season.

Similarly, there is no access road within the sub-village and it is found that the land feature of the project area is rugged.

With regard to the project, access road and other social infrastructures, such as road crossing bridge, washing basin, cattle trough, water points and others are very crucial for smooth communication and operation of an irrigation project. Accordingly, in the project area, there are shortages of such services, road crossing and canal crossing bridge, washing basin and cattle trough were considered during study and design of the project and in this connection the study and design committee elected form the user's community were participated in the selection and locating of these structures in their appropriate places. Therfore, the budget for such social services were included in the Enginerring cost estimation Table or BOQ and also included in the financial and economic analysis report of this project.

9.4 Finance Sources and Credit Services

Finance is the basic and significant element in establishing, operating and managing irrigation project. The sources of finance will be either from internal operation or external credit sources.

Credit facilities are usually essential to transform subsistence farming in to market orientated commercial agriculture, in order to pre-fund improved inputs.

FGD conducted in the project area showed that, currently there is formal and informal credit sources available in the area. However, the informal credit sources were very limited from friends in the form of cash or in kind (grain). The major and feasible formal credit sources in the area are primary service co-operatives, cooperative unions, Agricultural and Natural Resource Development Office (ANRDO) and Oromia Credit and saving institution (OCSI), which provides credits for agricultural inputs. The conventional banking sector has not however been found appropriate to serve the needs of the majority of the rural population, since they have long term procedure and their collateral requirement is high.

Therfore, credit services are the critical inputs for boosting agricultural production and productivity. The main finance source and credit supplier at the existing situation in the project area is Oromia credit and saving institution (OCSI), the current organization for rehabilitation and development in Oromiawhich was licensed by the National Bank of Ethiopia as a micro finance intermediary share company.

The purpose of OCSI is to extend credit, in cash to farmers, agri-business, small entrepreneurs through private individuals, groups, primary cooperatives and cooperative unions. The micro-finance business aimed at lending money to credit groups for micro and small business development, including farm enterprises, with the group being responsible for each member in case of defaults. Asset collateral is also required. The experience of MFI activities during recent years has been positive and m small some credit groups exist in the villages where MFI are operating.

OCSI has a capacity in providing credit for agri-business, agro-processing, manufacturing, trade, fattening and dairy development. This micro-finance has many branches, credit officers, many credit client user farmers and saving clients.

Accordingly, there is OCSI Branch at Gobessa town. The credit institution is basically focused on the demand of farming communities that they deliver credit for the purchase of oxen, sheep, irrigation pumps and agricultural inputs. The credit facility is not only for farmers but also for traders and government employees. Since agricultural inputs credit collection has faced a problem now the regional government transferred credit supply for inputs purchase such as fertilizer, seeds and agro-chemicals through OCSI. Credit is delivered and collected from January to May and group collateral (3-7person) is mandatory.

It should be mandatory that, the services of financial institutions help the farmers so that they need to provide more credits to the beneficiary farmers through their association. Specifically, the farmers may require short term loans to fulfill their input requirements under the project case. Therefore, the Wereda ANRDO should follow and alleviate any financial problem in order to attain the planned level of production.

9.5 FARMER TRAINING CENTERS (FTC)

Farmer training centres (FTCs) are established at the kebele level. These FTCs are intended to be centres of rural development and the medium to transfer agricultural technologies to the rural small holder. In the FTCs, integrated rural development training is provided by DAs and Wereda subject mater specialists. It provides training to farmers on crop production system, livestock husbandry, natural resources management and demonstratio based training to farmers. According to the key informant, the training center provides module based theoretical as well as practical trainings complemented with demonstrations on fields. Currently, there is one FTC in

Weteba Bedessa, which provides and introduce a training programme aimed at improving the skills of farmers. In the time of our feasibility study staghowever,there is no operational activity observed in the area. During discussion with the farmers at site level and our observation the FTCs are not fullfilled with the required training materials and appears to be under-resourced.

9.6 ARCHAEOLOGICAL AND RELIGIOUS SITES

According to the group discussion with farmers and kebele level consultation there is no important archaeological sites and religious instituitons in and around the project area.

9.7 ENERGY SUPPLY

The major energy sources for farmers are wood lots, animal by-products and crop residues. Few farmers purchased solar energy system and use for home light, mobile and hand battery charges. Currently, there is no any bio-gas supply. Women uses cow dug, tree leaves and crop residues for making injera and other food preparation, which has many difficulties on the health of the family. Gas oil is also used for light in the night time and students in the family also uses such light for their reading and perfoming their home assignments.

In this respect, the implementation of the project substantially would change the mode of life of the society since they would receive more income from intensified irrigation crop production. The generation of more revenue enables the beneficiaries to adopt new technology on area of energy consumption such as replacing the existing energy source to use of bio-gas plants and solar energy for their home consumption. However, the water, irrigation and energy sector has to make strategic plan in adressing this problem and also need to strongly work in the provision and supply of alternative household energy supply technology through alternative options.

9.8 RESEARCH AND EXTENSIONS

The linkage between extension and research is the basic element in increasing production and productivity of farmers. Currently, the research and extension activity with respect to irrigation technology is at infant stage and even very limited in the project area. On the other hand, research and extension is so strong on rain fed agriculture especially on crop production technology.

In this regard, thenear by Oromia research center (Kulumsa) which is locatednear by the zonal capital, AsselaTown is operating under the Oromia Research center. The existence of research center in the surrounding area creates a significant contribution to the proposed irrigation project beneficiaries in the demonstration, trials and dissemination of improved inputs technologies and agricultural practices.

Similarly, extension is the mechanism by which information and technologies are delivered to farmers. It is a process that helps farmers to become aware of improved technologies and adopt them in order to improve their efficiency, income and welfare. Extension service is rendered to the community of the project area through Development Agents (DAs) recruited and mobilized by district agricultural office.

Currently, there are three Development Agents in the project kebele each who have natural resource, animal science and plant science educational backgrounds. DAs are very closer to the community of the project area and act as a bridge in transferring pertinent information including farming practice and marketing information from the government and other development agents to the farmers. They are responsible to provide agricultural extension service and these

Development Agents are the sole source of information and advice for promotion of modern farming systems for the farmers in the kebele. Similarly, irrigation as a new technology in the area, the implementation, operation and management of the project could also be largely benefited from the availability of these facilities. In this regard, all Research Institute, Universities, Colleges and Development Agents should focus and take demonstration of irrigation technology as one of the planning area, which includes: -

- Introducing Improved Irrigated Agriculture Advisory/Extension Services
- Conducting demonstration on-farm irrigation water management and agronomic practices
- Demonstrate selected small holder irrigation systems with storage, processing and marketing facilities
- Demonstration of non-conventional efficient irrigation water application technologies

9.9 Suppliers and Service Providers

Agricultural Inputs Supply Enterprise (AISE) is a government-owned enterprise. The enterprise provides a wide range of services such as fertilizers import and distribution to unions. About 95% of the total sales, supply of agro-chemicals such as pesticides, herbicides and insecticides, improved vegetable seed, veterinary drugs and medicines, sprayers and small agricultural tools were conducted through AISE.

Similarly, input retail and wholesale businesses, as well as inputs and output suppliers and services providers are avialble in ONRS. Reports were received that the input businesses are slowly becoming more competitive and Input supply corporation aggressively working on inputs supply such as fertilizer, agro-chemicals, farms implement and vegetable seeds in the area.

Retail agricultural input supply stores found in GobessaTown. In Gobessa town vegetable seeds retail shop, hide and skin collectors and veterinary supply stores are found.

9.10 Electricity, Telephone and Postal Services

Electrification and telecommunication considered as the base for any developments and these can play an important role in providing the opportunity of education and allow the use of better technology for farmers, health centres, technical schools and Farmer Training Centres (FTC). Electrification can create job opportunities and reduce the burden of women in food processing.

Currently, electric power supply is avialable for 24 hours in Gobessa town but in the command area, there is no power supply in the commnad area villages these farmers use gas oil for light and few farmers uses solar energy.

Similarly, mobile telephone is available and working in the command area kebele's. The mobile telephone service has transformed communications in the project area, improving both administration and marketing. According to the kebele data, currently significant number of farmers have mobile telephone in the command area kebele. This shows most project beneficiaries are using mobile telephone for communication, making business transaction and price information. However, farmers described that after the start of mobile telephone and transport the use of post office found to be minimum.

9.11 BANKING AND INSURANCES

There are different Government and Private Banks situated at Gobessa town and the Commercial Bank is situated at Gobessa Town. Theser banks include: Commercial Bank, Cooperatiove bank of Oromia. The banks provide short, medium and longterm loans. These anks provide short, medium- and long-term agricultural loans. Agricultural Loan is also provided to individsuals, enterprises and associations on a short, medium-term and long-term basis.

Short-term Loan: This is a loan to be paid back within a year. The purpose of Loan includes Working capital loan, seasonal agricultural operations and marketing of crops like Teff, wheat and Maize, marketing and distribution of inputs like fertilizer, pesticides, etc.

Medium-term Loan: This is a loan to be paid back within one to five years. Purpose of the Loan will be for building construction, machinery, equipment, furniture and vehicles.

Long-term Loan: This is a loan to be paid back within five to fifteen years. Purpose of the Loan include for building construction, machinery, equipment, furniture, vehicles and various project related infrastructure. The Bank provides loans for financing the establishment and expansion of agricultural development project, agro-industries, transport, and communication, mining and energy, education, health, hotel, tourism and other sectors of the economy.

Similarly, there are insurance companies around the project area, particularly at zonal Capital Assela. Some of the insurance companies include: Africa, Global, NIB and Nyala Insurance Companies. In this respect it is encouraging that all fixed assets of the project as well as farmers' crops and livestock are required to be covered by appropriate insurance policy and company.

9.12 NON-GOVERNEMENT ORGANIZATIONS

International and Indigenous Non-governmental organizations (NGOs) are expected to play progressively more important role in rural development, service delivery and community organizations. There are no NGOs and religious self-help organizations operating within Shirka wereda. As the informaion obtained from the wereda, there was an NGO knowen as WVE but is alrady ceased at the moment.

10. COMMUNITY LEVEL ORGANIZATIONS

10.1 KEBELE ADMINISTRATION

The Kebele system is the lowest level in the formal administrative structure of the government. It is the point of entry into the government administration and most regularly approached by the inhabitants for most social and economic development and political affairs. The project area is organized under governmental intuition of kebele administration, kebele is composed of villages and a village in turn encompasses a number of households that usually contain close family relatives. These are married brothers and other kin including older parents. Similarly, for the purpose of political, economic and social promotion and development tasks, each Kebele in the Wereda is divided into development zone, development zone into a number of “got”. A “got” consists of 26-30 households and is further divided into teams and a team is also consists of about 8-10 households.

Moreover, under the kebele there are different committees organized for different functions. These includes kebele cabinet members, kebele court committee or traditional judiciary, security and peace affairs, women and youth associations, land administration affairs, water supply and sanitation affairs, education, forest conservation and control committee, health affairs, watershed managemenet committee and also others. The kebele has council members with five year terms of office. Mostly members of the various management committees of the kebele are elected from members of the kebele council.

The kebele councils are responsible for performing different duties such as: ensure peace and security in the kebele, participatory planning of development activities and budget appraisal, evaluation of ongoing or conducted activities, administer and conserve any public property within the area especially land, water, forests and communal grazing areas, enforce government laws and regulations within the kebele, establish different types of cooperatives and other associations, establish schools, health posts and similar committees necessary for the area with the cooperation of government and non-government organizations. Kebele cabinet members or leaders also report activitites performed to concerened bodies, carry out conflict resoultions, take peoples’ opinion to the government and processing pepole’s applications

The basic challenges of the kebeles include shortage of budget and office equipment such as chairs, tables, typewriters, computers and stationary. The kebele leaders and committee members are working free of any payment for years except the kebele manager. The kebele lacks significan method of generating income other than appealing directly to the kebele population for contributions to specific development activities. More over, the main limitation of the kebeles also include: lack of provision of services in a coordinated and timely manner and lack of equal responsibilities among elected memebers.

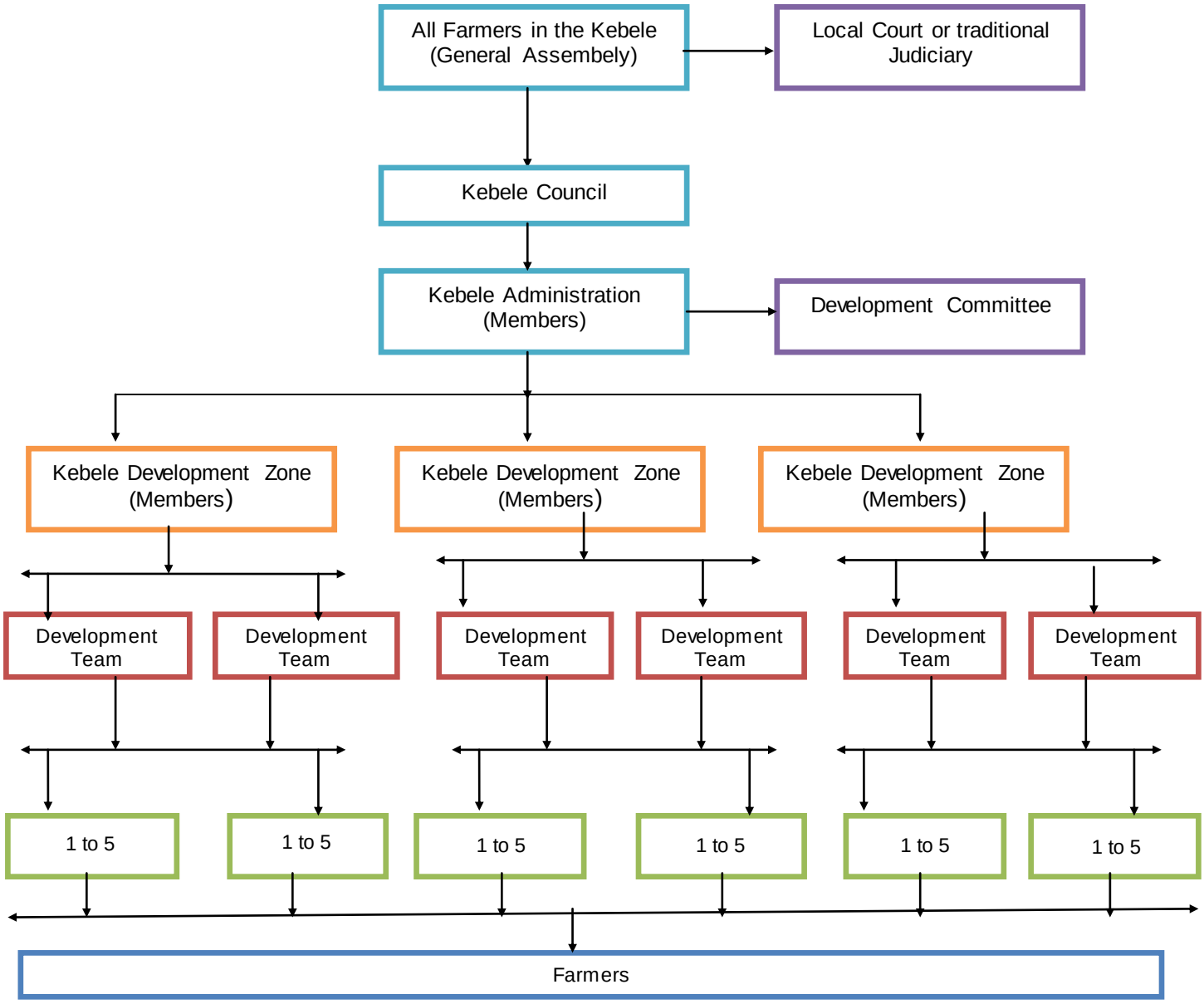

Figure 10-1: Organizational setup of Kebele Administration

10.2 PRIMARY COOPERATIVE SOCIETIES AND UNIONS

Planning and implementation of development activities requires the participation of beneficiaries and community organizations. Cooperatives have gained importance as potential instruments or tools of agricultural development. Government believes that cooperatives can play a key role in agricultural marketing and the provision of farm inputs and credit. According to the regional cooperative proclamation a cooperative is an autonomous association of persons united to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Cooperatives are based on the values of self help, self responsibility, democracy, equity and solidarity. They are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, political or religious discrimination.

Multi-purpose, irrigation, saving and credit, fishery, seed multiplication, consumer, housing, milk processing, solar energy users and apiculture cooperatives are some of the different types of co-operatives in the region. Saving and credit assocaiation exist Shirka wereda.

These cooperates and unions are involved in inputs and out puts marekting, agro-processing (flour mill, forage processing), improved seed multiplication, agricultural mechanization, import and export of strategic inputs and commodities, saving and credit activities that totally linked with small-holders agricultural production. Some of the cooperative unions are memebers of ECX marketing systems through purchasing shares and participating in commision and margin marketing.

Agricultural Service Cooperatives: there are 33 Peasant Associations (PAs) in the district with 26,971 members households in 2015. There were 32 Agricultural Service cooperatives during the year under consideration. However, their member farmers were increased from 9520 (9.11% are female) to 11233(out of which 9.82% female). Regarding their capital, they have Ethiopian birr 1,117,500 of which 33% are operational and the remaining 67% is capital and have 5 grain stores which created an employment opportunity for about 60 people in the year 2015. In the year 2015/2016, their capital was increased to2,501,709.37 birr (10% are operational) and the number of grain stores were also increased to 17 which all together create job opportunity for 100 people. These cooperatives were engaged on purchase of crops from the farmers and sent to the central market. In addition, the cooperatives are also engaged in delivering different services such as agricultural input and sugar and soup for the members.

On the other hand, so as to improve the livelihood of their members, there were also 15 rural saving and credit association with 1320 members that provide credit and saving services for their member farmers in the year 2016

Table: 3. Rural saving and Credits associations available in the district by types and member 5. size by sex

No	Name of rural Saving andcredits associations	Member size by sex					
		2014/15			2015/16		
		male	Femal	Total	Male	Female	Total
1	Tokuma Gudina	20	15	35	25	15	40
2	Bikiltu Gele Baha	18	10	28	18	10	28
3	Goda Holko	245	30	275	250	35	285
4	Kenenitu Chisa	0	122	122	0	124	124
5	Biftu Genema	0	124	124	0	125	125
6	Bedina Jawi	0	120	120	0	140	140
7	Negegna Fi Gudina	38	1	39	41	1	42

8	Megerisa Gena	144	6	150	144	6	150
9	Tokuma Goro	2	64	66	4	65	69
10	Gudina Walini	44	2	46	47	2	49
11	Chimis Mana Gut	52	22	74	53	22	75
12	Muleta Birbo Fi Chole	64	0	64	64	0	64
13	Kenenitu Hanu Fi Jawe	0	0	0	34	2	36
14	Birka Dera	0	0	0	36	0	36
15	Waltai Atota	0	0	0	48	9	57

Source: Agricultural service cooperative office

Agricultural input utilization: Fertilizers, improved seeds, herbicides and insecticides are very essential agricultural inputs to improve crop production and productivity, to meet rapid increase of demand for food and industrial raw materials. Accordingly, between the years 2014/2015 to 2015/2016production year the amount of chemical fertilizers (Urea, NPS and DAP) distributed to the farmers was increased from 20,519 quintal to 25,913.5 quintals while the amount of improved seed was decreased from 2489.5 quintal to 546.5 quintals between the years 20014/2015 to 2015/2016. On the other hand, the number of herbicides was also decrease from 7504 liters to 5897 liters showing a decrement by 1606.9 liters during the year under consideration. The above data was the data collected from Farmers' Service Cooperatives only

The main aims of cooperatives is to increase members' welfare and income. According to the wereda co-operative promotion office there are 295 primary co-operatives,26 saving and credit associations and 1 Union in the wereda. Of these primary cooperatives n, 43.83% are saving and credit cooperative (SACO), 56.17% are multi-purpose, cooperatives. The number and distribution of cooperatives in the wereda are shown in the Table below.

Table 10-1: Types and Number of Cooperatives in Shirka Woreda

No	Types of Primary Cooperatives	Number	Number of Memebers		
			Male	Female	Total
1	Saving and Credit	26	1432	114	1546
2	Pimay cooperatives	29	19750	6954	26704
3	Union	1			
	Total	56	1195	6868	28250

Sources: Wereda Cooperative Agency

Generally, these cooperatives have gaining momentum on its agri-business activities. However, lack of well committed and experienced personnel, absence of well constructed and sufficient warehouses for the marketing of inputs and outputs, shortage of financial resources to cover agri-business tasks and running costs, lack of office equipments, lack of well-established market information and data base management systems are the major challenges that hinders their forward movements. If these challenges get strategic solution the cooperative can strongly support the proposed irrigation development.

10.3 TRADITIONAL INSTITUTIONS AND COOPERATION

Cooperation and mutual assistance or traditional social institutions such as ‘’ኩዳድ--Debo or jigi’’, ''ወንበራ-Wonfel'', Iddir, Iqub, Mahiber, Sembete and other church based associations, are common in the project area. Such indigenous institutions are very common among men and women’s household groups in the project area.

‘’Debo’’ and ''Wonfel'', activities organise labour cooperation for agricultural activities among households in the community. Men households work with “Debo” during land preparation and maize crops cultivation, weeding, maize harvesting and house construction. Women's also cooperate in maize weeding, cultivation and weading cermony preparation.

‘Debo’’ is an arrangement for free labour, in case a Debo receiver faces shortage of time to cope with major tasks in the agricultural calendar such as weeding, cultivation and harvesting. During Debo the household granted labour, prepares food and drink for those assisting them. Wonfel is exchange of labour.

Cultivation, planting, weeding, hoeing and harvesting are the major activities requiring storng and active form of cooperation in the project area. Debo involves friends and/or relatives who come together to fence, split wood, help in transportation, construct soil bunds, harvest grass and crops, hoe, plant tree and the like. Under debo cooperation there is no exchange of labour. Generally, **‘’Debo’’** is an informal community cooperative system and it enable farmers to cooperate and exchange and share labour, thus overcoming shortages at peak agricultural seasons.

''Iddir'' is an indgenious scheme and its major functions is to assist families in the event of human death and illness. It is also healpful in the project area to assist families in the event of death of cattle and to help in the case of loss due to fire. Iddir is open for every body and each Iddir has formal by-laws, memereship lists, some finanacial accounts and bsic fixed assests such as cups, tents and other. The memebers of the Iddir elects its leaders. Women’s and men Iddir has strong mutual network and assit the affected person in cash and contribute money, Injera, ''shiro'' and salt.

“Equib” is a form of saving associations in which weekly or monthly payments of a fixed sum are exchanged for the privilege of receiving a lump sum at some important events in the life of the group. It also offers a basis for socializing when the members come together for their payment and are provided with food and drink. It is one way of having a saving account.

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“Senbete/Mahiber” is a form of association, especially known among the population of Christian Orthodox religion. Friends form groups to meet and celebrate a saint’s day every month at a member’s home, where food and drinks are provided. Each member is required to take over such a responsibility once every year or so, depending on the number of members in the association. The number of members is mostly not more than 20. It is very common that, when association members face troubles i.e prison or jail, sikness, fire, death of oxen or faces any challenges they assist each other. Similarly, ''Sembete'' and ''Christina'' are religious ceremonies practicing among the population of Christian Orthodox religion.

10.4 VILLAGE LEADERS/ ELDERS

In the Oromia peoples culture village leaders or village elders have strong power, role and respections in their locality or village. Village leaders are elected or nominated by the community in their villages. These village leaders have many roles and responsibilities and they give different decision under the respected cultural place and under the big tree or meeting area. The

main tasks of village leaders include: conflict resolution, mobilization of villagers for collective work, opening and closing of meeting, creating smooth media for marriage formation of youngster's and local resource managements.

Due to local and cultural constraints women are not entitled to be elected as village leaders. The main criteria for becoming a village leader is being living in the kebele, honest, respected, commitment and consistency in providing decision or conflict resolutions. Especially in Sidama village leaders have special value in conflict resolution which arises on grazing land, watering and kebele border issues.

10.5 OTHER ORGANIZATIONS

During the focus group discussion, the study team identified and consulted women's and youth associations as the existing community organizations. Youth and Women's associations have recently been set up in the kebele but these associations are not functioning to their full potential and they are nominal.

10.6 LESSONS FROM TRADITIONAL ORGANIZATION

It is very practical in the study area that traditional social and community-based organizations are very important in the fields of development actions and for resolving conflicts. The commitment of most of the inhabitants to such organizations is strong and genuine. Focus group discussion and key informant interview confirmed that all households are organized in a traditional local organization of one kind or another. This should be further explored as a venue for future organization and mobilization for the advancement of the project and its activities. Some of the roles of these traditional organizations focus on:-

- Promoting group work intervention in tasks which cannot be performed by one person or one household alone within a certain defined time frame
- Carrying out traditional judiciary activities for settling disputes and avoiding conflicts between different clans and ethnic groups
- Adopting cooperation among members in times of bad fortune and some unforeseen social problems
- Managing very scarce communal resources such as grazing land and water
- Carrying out traditional and ritual ceremonies

11. STAKEHOLDERS IDENTIFICATION AND CONSULTATION

11.1 *STAKEHOLDERS IDENTIFICATION, ROLE AND RESPONSIBILITIES*

Consultation is one of the basic data collection methods and the consultation process begins with identification of main stakeholders and these stakeholders for anticpated project are: - 1) Regional Level bureaus; 2) wereda administration councils; 3) kebele administration councils & development workers of the command area; 4) project beneficiaries 5) households found within quarry sites, camp site, access roads, water intake point & main canals who would be affected negatively by a project; 6) other water users; 7) focus groups and key informants; and 8) stakeholders that could further be identified. The purpose of consultation is to get their views towards different kinds of project issues, to get their cooperation and support in different types of project activities, and to facilitate the collection of data and information.
In Oromia National Regional State, institutions involving on irrigation development and project implementation have four tiers of organizational set-up. These are the Regional level Bureaus, Zonal level Departments/offices, Wereda level offices and the grass-root level institutions-kebele administration, Water Users' Association or Water Users' Groups/committees. The tiers of organizational set-up largely relay on the prevailing administrative structure of the region.

Currently, the overall responsibility for irrigation project implementation is vested on Regional Bureau of Water, Irrigation and Energy and Bureau of Agriculture and Natural Resource (BoANR). Besides, all institutions responsible for irrigated agriculture, organization and marketing have the mandate, responsibility and authority to carry out project activities. Moreover, the stakeholders of the project include project beneficiaries, Wereda administration office, and agriculture and natural resource development department/office, Rural Land Use and Administration and cooperative promotion agency, Wereda level offices and the grass-root level institutions-kebele administration and water users' committee. In addition to the line offices, i.e., institutions that are directly responsible for project implementation, administrative structures are also involved in irrigation development and project implementations.
The provision of technical supports to irrigation organizations are a statutory obligation of the regional Bureaus mentioned below and their representative offices functioning at Zonal and Wereda levels. The role and responsibilities of each institution are summarized in the Table below.

Table 11-1: Existing Stakeholders, Roles and Responsibilities

No	Stakeholders	Roles and Responsibilities in the Irrigation Development
1	Administration offices at different level (Region, Zone, Wereda, Kebele)	Coordination and supervision of line offices
		Farmers mobilization & law enforcement
		Securing the necessary budget/fund for the O & M support.
		Create smooth environment for works implementation
2	Bureau of Water, Irrigation and Energy	Setting the legal framework and creating the enabling environment for planning, budgeting and system management of irrigation development
		Supervision and follow up the implementation of the Project
		Coordination of stakeholders during irrigation project implementation, operation & management stage
		Training of irrigation water user farmers on water management, operation & maintenance
		Enforcement of water related laws and regulations
		Organization of users into IWUA
3	Bureau Agriculture & Natural Resources	Provision of irrigation extension and onfarm water mangement
		Collection and coordinationof input supplies on cash and credit in collaboration with Cooperative Promotion Agency (CPA)
		Market support
		Training on irrigation practices improvement and on-farm

No	Stakeholders	Roles and Responsibilities in the Irrigation Development
		development or land preparation
		Watershed development and management
4	Bureau of Land Use Administration	Land distribution and registration in collaboration with Peasant Association
		Providing land use certification
		Resolving land use conflict and implement regional land use proclamation
5	Environmental Protection, Forest and Climate Change Authority.	Environment protection and management
		Forestation
		Conduct and facilitate climate smart-agriculture
6	Cooperative Promotion Agency	Provision of input supplies on cash and credit basis in collaboration with ANRDO
		Provide experinace on organizational managemenet, on licenses of IWUA, Auditing of IWUA, Training on resource management
7	Finance and Economic Development office	Securing the necessary budget/fund for the O&M support
		Create smooth environment for project implementation
8	Health Office and Health Extension Workers	Provision of quality health services, maintain and insure the productivity of the household and his family in the project area
9	Education Office	Provision of quality education services, improve the household and his family knowledge and skill
10	Industry and Trade Development Office	Securing and Provision of output markets, creating value chain for the irrigation outputs and provision of crop price information
11	Livestock Production and Fishery Development Office	Technical support for livestock production & management , its linkage with irrigation development
12	Women Association	Youth and women associations are believed to actively be involved in the project with the matters related to land usage aspects, labor, land ownership and related issues.
13	Youth Association	Youth and women associations are believed to actively involve in the project with the matters related to land usage aspects, labor, land ownership and related issues.
14	Oromia Credit and Saving MFI	Provision of credit for irrigation operation and managemenet
15	Banks	Provision of credit for irrigation operation and managemenet
16	Kebele Administration	Participatory planning of development activities and budget appraisal, evaluation of ongoing or conducted activities, ensure peace and security in the kebele, administer and conserve any public property within the area especially land, water, forests and communal grazing areas, enforce government laws and regulations within the kebele, establish different types of cooperatives and other associations, establish schools, health posts and similar institutions committee necessary for the area with the cooperation of government and non-government organizations. Kebele cabinet members or leaders also report activitites performed to concerened bodies, carry out conflict resoultions, take peoples' opinion to the government and processing pepole's applications
17	Farmers (beneficiaries)	Control of project resources, involved in covering part of investment costs, involved in farming activities, involved in project operation and maintenance activities, involved in delivering surplus products for the market
18	1 to five	One for five is organized by the government for handling of various community based issues. It is taken that this arrangement would assist to strengthen the operation of irrigation project during the times of construction and operational stages. This media creates discussion and experience sharing forum with respect to input usage, water share, dispute and agreements, and related positive contribution to the project success.
19	Traditional farmers Institutions	Provision of close support, follow-up and assist in management and conflict resolution

No	Stakeholders	Roles and Responsibilities in the Irrigation Development
20	Farmers Training Center	The farmers training center is concerned mainly with training and capacitating the farmers. Following the introduction of the project, new training lessons and experiences would be introduced the farmers through the use of the training center.

11.2 CONSULTATION AND PERCEPTION

In conducting Gumaloa Irrigation Project feasibility study, consultative meetings with various groups were conducted as one of the methodology of getting issues and ideas about the project. In terms of this project, consultation is aimed at creation of awareness to the part of the stakeholders, to identify the merits and demerits of the preferred options, considered as one sources of data and information and to identify attitudes and to obtain the participations of the stakeholders during the remaining study and subsequent implementation phases of the project.

With particular emphasis, consultation were conducted with the project community, with the aim of identifying the persons, groups and organizations connected with or influenced by the project; Identify their level of influence on the project, involve them in all decision-making processes and characterize their influence on the project; give surety them and make them feel that they have the power to influence in the course of development.

Moreover, community consultation were also aimed at identifying or getting view on the location of main water point or intake, main canal routs, secondery, tertiary and field canals layout, location of crossing structures such as foot bridges, across canals and cattle crossings at points; and social infrastructures such as washing basin points, cattle troughs, steps into the canal for water collection points; location of camping site; identify and select lands to be irrigated, information on past experience with floods, crops to be grown in the project (including high value crops), project positive and negative impacts.

At the initial stage of the consultation, all the people and appropriate institutions that should be consulted were identified on the bases of their relevance and suggestions on the client TOR. Accordingly, those that may either be affected by the project or those that can influence the operation of the project or those that positively support the project were identified, their role and responsibilities also pre-assessed. These stakeholders include various governmental offices and the community. With regard to this, consultations were conducted with Wereda administration council, selected representatives of the beneficiary farmers and farmers found within the main irrigation structures (water intake points, main canal and command area).

The main consultation points of discussion were concentrating on their project-related interests, their views regarding the risk and viability of the preferred source of water and the ways they will be participated in the implementation of the project.

The meeting held at the Wereda administration council level was organized through the Wereda head, whereas the command area, kebele level and main irrigation structure place meetings were conducted by the help of the kebele administration, kebele manager, DA, as well as kebele sub-village leaders. The community level meetings were conducted in Amharic language which is the official language of the Region where the project is located and a language which is spoken by the participants of the consultation. Minutes of meetings together with signed lists of the participants were taken. As part of the consultation processes of the project, the relevant governmental organizations were requested to supply various types of data and information relevant to the study using the formats prepared by the socio economy study team.

The consultative meetings and the participatory socio-economy study of the project was facilitated and assisted by the agriculture and natural resource office of the kebele (DAs) throughout the study. The consultation which are held at various level of the consultative meetings and written responses to questions forwarded by the client helped to identify the extent of the project benefit and problem and who are largely interested in the outcome of the project.

11.2.1 Regional Level Consultation

Consultation was conducted at Regional level with ONRS Water, OIDA, AGP-Staffs and Irrigation Study and Design process on the tasks of feasibility study of the selected or proposed projects. The purpose of the consultation was to get primary and secondary data. The secondary data includes GTP-II Five-year regional development plan of Irrigation Projects, experience and criteria of the region on irrigation study and design. Similarly, discussion also conducted with the regional OIDA, about the lists of irrigation project situated in the upstream and downstream of the proposed irrigation projects. AGP coordination team has prepared an arrangeemnt to the respective AGP selected Weredas for their cooperation and support at feasibility study stage of this project.

11.2.2 Consultation with Shirka wereda Administration Council

Consultative meeting was conducted at Shirka wereda Administration Council. In this meeting various sector office heads and office representatives such as Wereda Administration Office, Agriculture and Natural Resource Development Office, Water, Irrigation and Energy Office, Education Office, Health Office, Livestock and Fishery Development Office, Culture and Turism Office, Youth and Sport, Women and Children Afairs Office and Cooperative Promotion Office were participated as indicated in the Table.

Table 11-2: Shirka Wereda Administration Council Consultative Meeting Participant Lists

No	Name	Position/Office	Telephone No.
1	AbuBakar Beyan	Administration Office Administrator	
2	Mengesha Bule	Wereda Adminstration Office Head	
3	Mendaye Hunde	ANRD &LivestockOffice Office Head	
4	Ketema Daniel	Irrigation Development Office Expert	
5	Qawatte Abbe	Irrigation development Office Head	
6	Alemayehu Abebe	Water and Energy Office Head	
8	Bertuikan Deribe	Women and Children Affairs Office Head	
10	Harasua Kabato	Youth and Sport	

The major point which is presented for discussion was regarding the needs and advantages of the project implementation, the current use of the water and land resource, the existence of other investment land use plan in the proposed project area other than the proposed once, willingness of the Wereda administration council, the existence of other water users in the up and down stream, the commitment so far provided and expected from Wereda administration, compensation and land redistribution issues, suggestion on the location of social-infrastructures, appropriateness of the Water Intake Point (head work site), availability of camp site and other supplementary suggestion if any.

Accordingly, various issues related with the above points were discussed with Wereda Administration Council and they mentioned that Gilgel Abbay River is a big water source for the area, but until now not well exploited, currently some groups of youth and farmers started to use irrigation by using small scale pumps, but they have low technical and financial capacity to take water into large command area.


Figure 11-1: Wereda Administration Council Consultative Meeting at Gobessa

Similarly, the Wereda administration council discussion pointed out some major issues related to irrigation project development at their Wereda level, which includes:

- Farmers have low technical and financial capacity and know how
- Crop failure is the basic problem as a result of shortage of rainfall
- Irrigation is a new technology and it is on an infant stage in the wereda
- High youth unemployment and underemployment
- Small size of household farm lands
- Lack of improved technology and livestock breads
- Low productivity of crops and livestocks

On the other hand, the wereda administration council participants discussed that the project is advantageous in that it can minimize rainfall dependency, increase crops and livestock production and productivity, increase household income, improve equitable water distribution, create employment for youth and women and enable the community to use land and water resource for its maximum benefit.

Water Resources: - the water source for the proposed irrigation project is Weteba Bedessa river and this resource is used by the local community for traditional irrigation, human and livestock consumption, wildlife consumptions, recreation, transport, fishery developmnet, seedling production, sanitation, house construction and so on.

Land Resources*:* - Land resources are privatly or inividually owned resources in the project area and land resources are not provided to local or any investor. Similarly, the wereda adminstration already confirmed that no any investment or other longterm plan on the existing land resources and it is owned by idividual farming communities in the area. But metioned that there are 2 small ponds being under construction though AGP support to start development of irrigation at the periphery of Weteba Bedessa river.

Irrigation infrastructures*:* - discussion also conducted on the importnace and location of different irrigation infrastructures, regarding the location of the intake points or (head work), first different water intake point location options are investigated and then selected through study and design committee and local community participation. With respect to camp site, the participant

raised that communal land is avialable in the project area, but some space or land is also available inside the kebele compound and they mentioned that the camp site will be fixed during construction through discussion with the contractor, since the camp will be the office of the IWUA, for the purpose of care and protection, it is better to locate inside the kabale compound or close to the FTC. Regarding the location and importance of social infrastructure the participant appreciated the existence of such infrastructure together with the main irrigation infrastructures and agreed that the existing kebele administration, sub-village leaders, elders and users should participate in the identification and location of access road, washing basin, road crossing bridge, canal crossing bridges, cattle trough and water points.

Compensation and land distribution: - The Wereda administration council discussed that irrigation is an infant technology for the Wereda and for the selected community. However, farmers have good experience on community access road, schools, health posts, FTCs, Churches construction and water shed management activities, which are the social infrastructures constructed, used and managed by the community having different effects during construction. In a similar manner the expected effect with irrigation infrastructure construction, on perennial crops will be minimum and will be shared among project users'.

Regarding land distribution in the project area land is the critical and scarce resources and the average land holding of the households are small and all household heads provided second round land use certificate, so that land distribution become a challenging issue in the project area and households who have irrigation land can develop their land efficiently by fully utilizing family labour. However, household who have more irrigation can share their land holding to their family members, boys and his relatives existing within the command area, which is the existing experience in other regions of the country.

Willingness and Commitment of the Wereda Administration council: - As it was discussed in the consultative meeting that, the Wereda Administration council has strong willingness and commitment for the implementation of the project and they will have strong interest and commitment for the project implementation, some of the tasks mentioned during discussion and expected from the Wereda Administration council include: -

- Create public awareness on advantage and disadvantage of irrigation development and involvements in the quality control, construction and supervision tasks
- Coordinate the users' community
- Mobilize the users' community in their labour, finance, material and managerial skill at the time of project construction and implementation phase
- Participate in project monitoring and evaluation tasks
- Administrating and handle land ownership issues under the project
- Assist the water user association in operating, administrating and maintaining the irrigation scheme
- Manage and resolve any conflict arises in the project area in relation to land provision for camp site, construction materials site, construction machinery and equipment care, mobilizing existing youth and women labour and so on.

Moreover, facilitation of the process is important and critical for success of the project. In this regard, the Wereda council is furthermore committed to mobilize the community and will facilitate the project in all directions. The Wereda administration office wrote a letter which requests the implementation of the project and their promise. The minutes of the discussion and letters are attached in the appendix part of this report.

11.2.3 Consultation with the Kebele Administration

Kebele administration is the most significant institution at grass root level. Consultation and discussion was held with the Weteba Bedessa administration council found within the project area. The consulted people and participants are the kebele administration council. The minutes of the discussion are attached in Appendix. The views and suggestion raised during kebele consultation is summarized below.

In the discussion, various issues were raised by the members of Weteba Bedessa administration and they mentioned that Weteba Bedessa river is important water sources for the project area and farmers currently uses pump irrigation system for growing vegetables and creals on the bank of the river. However, farmers and water users' groups have low technical and financial capacity to take the water from Weteba Bedessa river to their large command area.

It was also discussed that, currently, the water form Weteba Bedessa river is used for multipurpose benefits which includes, human and livestock population consumption, seedling production, small vegetables production, washing and for house constructions, recration, fishery and other similar purposes. The participant described that the project is advantageous since it would lead to increased production, productivity and create employment opportunity for youth and women. It also enables the availability of surplus marketable production and lead to creation of possibilities of other stakeholders' involvement. The kebele administration council in general has positive attitudes and is willing for the construction of the project to take place. With regard to other water users, there are other water users working on Weteba Bedessa river for different purposes in the up and down stream, including irrigation. However, the up and down users' do have positive to share and use the water on fairness basis and the kebele administration council expect direct and an indirect benefit from the project.

Figure 11-2:- Weteba Bedessa Kebele Administration Council and community Consultation

The kebele administration council has good willingness and commitment for the implementation of the project and they will have strong interest and commitment for the project implementation, some of the tasks expected from the kebele administration council include: -

- Coordinate the users' community,

- Create public awareness on advantage and disadvantage of irrigation development and involvements in construction and supervision quality control tasks
- Mobilize the users' community in their labour, finance, material and managerial skill at the time of project construction
- Participate in project monitoring and evaluation tasks
- Administrating and handle land ownership issues under the project
- Assist the water user association in operating, administrating and maintaining the irrigation scheme
- Providing land for the construction of camps within the keble or at any other appropriate communal lands free of uses by the people,
- Making the people understand and fulfilling cost sharing arrangements
- Organizing unskilled labour required for the construction,
- Involve in establishing water users' associations
- Safeguarding the construction process in all time
- Participating or mobilizing youth and women population in the project implementation
- Assist the water user association in operating, administrating and maintaining the irrigation scheme

The facilitation of the process is important and critical for success of the project. In this regard, the kebele is additionally committed to mobilize the community and will facilitate the project in all directions. The Kebele administration office wrote a letter with their signature which requests the implementation of the project, minutes of discussion and the letter are attached in appendix.

11.2.4 Public Consultation

Consultation and discussion was conducted with the farmers and community found within Weteba Bedessa administration on 17 June 2018. The consulted people are the direct beneficiary of the project those have land in the command area. The consultation was conducted with the participation of existing stakeholders are the beneficiary community, IWUA expert and Gender Specialist, Kebele administration Council, Shirka wereda administration Council representative, Development Agents, Kebele health extension workers, religious leaders, school teachers and elder farmers. Similarly, consultation was also conducted at upstream, middle and tail end users of the kebele independently and their views summarized under this report. The list of consulted community members could be referred in the Appendix.

The major point which is presented for discussion during community consultative meeting was regarding needs and advantages of the irrigation project, stages of community participations, the current use of the water and land resource in the proposed area, the needs and advantages of the project implementation, the existence of land use plan other than the proposed project, willingness of the community towards the proposed project, the existence of other water users in the up and down stream other than the intended beneficiaries of the command area, their commitment and expected contribution in cash, kind, labor or in the managemenet of the project, suggestion on the location of water intake points (head work site), the needs and locations of social-infrastructures, appropriateness of the main canal route, their readiness and willingness to strengthen or to transform the existing water users' committee to IWUA, types of crops preferred to be grown using irrigation, preferred irrigation methods and their suggestion on the probable damages caused as a result of the project on the existing farm or grazing lands, on their settelement, on the existing social infrastructures, perennial and annual crops.

Accordingly, various issues related with the above points were raised by the community and discussed with the users', kebele administration; DAs and Wereda subject matter specialists joining the consultant study team.

Therefore, the participants discussed that the project is advantageous in that it can enable the community to increase water and land resource utilization for its best efficiency, create employment for youth and women, decrease rainfall dependency of farmers, increase household income, improve equitable water distribution and avoid water use conflict among up and downstream users of Weteba Bedessa river.

Detail discussions were conducted with the community on the current use of Land, water resources, the benefit and the location of irrigation infrastructres at different places. The water resources of Weteba Bedessa river is currently used for vegetables and seedling production with pump irrigation, consumption of human and livestock population, transport, recration, cloth washing, wild life consumption, house construction and so on. Farmers were explan that the water should be used to the best possible way that it should benefit the local community and they are also cooperative in managing the water resources and its surrounding. Regarding the location of the water intake points (head work), they are aware that, different water intake point options are investigated and then selected through the participation of study and design committee and members of the community. The main prassure line, collection chumber, main canal route, secondery and tertiary canal routes were investigated and examined by the study and design committee representing the community togther with the study crew of the consultant. With respect to camp site, the participant raised that land is available inside the kebele compound. However, they suggested that it will be high-quality if the camp site is fixed during construction through discussion with the contractor, since the camp will be the office of the IWUA, it is also better to locate inside the kebele compound or close to the FTC, for the purpose of care and protection. Regarding the location and importance of social infrastructures the participant appreciated that the existence of such infrastructure together with the irrigation infrastructure and agreed that the elected study and design committee and the existing kebele administration, sub-village leaders, elders and users were participated in the identification and approving the appropriate location of access road, washing basin, road crossing bridge, canal crossing bridges, cattle trough and water points.

Compensation and Land Issues: -As a result of the implementation of the project perennial crop will be affected due to the irrigation construction.and there will not be significant request of compensation from the affected persons. These issues were seen as one major discussion ajend with the user's communities and it was discussed that irrigation is an infant technology for the selected community. However, farmers in the project area have good experience on community development works such as access road, schools, health posts, FTCs, churches construction and water shed management activities, which are the social infrastructures constructed, used and managed by the community having different effects during construction. In similar manner the expected negetive impacts as a result of the irrigation project on perennial crops will be minimum, the preasure pipe line will be constructed under the ground and farmers can cultivate the land with out any significant effects and other negetive effect will be shared among project users'. Therefore, any compensation issue, if arise, on Weteba Bedessa irrigation project will be handled and shared by the users of the project. Regarding land issues in the project area land is the critical, so land distribution becomes a challenging issue in the project area and households who have less than or equal to 0.50hectare can develop his land efficiently by his/her family labour. However, household who has greater than 0.50 hectare he/she can share land holding to their family members, boys and relatives existing within the command area, and some times rent out land to outsiders which is the existing experience of people in most irrigation projects of the country.

Willingness and commitment of the community to participate on the project implementation: - Assessing community willingness, partiiicpation and their commitment on the project cycle was one of the discussions ajenda with the user communities. During public

consultation all community members require the implementation of the project due to the benefit expected from the project. They are ready to participate specifically on labour bases, in cash, materials supply, provide their indigenous managerial and local conflict resolution skills and they are also ready to establish their IWUA as a new one that could be the main organs of the project administration. The preferred types of crops by the community in the project command area are: - onion, pepper, Garlic, Maize, Haricotbean, Mung bean and sugar cane crops.

The beneficiary farmers are expected to share the investment cost on a labour bases during construction as well as to cover the future operation and miantenace costs. This will be advantageous in many respects and through cost sharing, the famers would develop sense of ownership as well reduce the financial burden of project financers. In addition, timely operation and maintenance would be provided for the schemes. As per the AGP guideline, the beneficiaries are expected to contribute at least 10% of the initial investment cost. On the other hand, the supply of labor wouldn't face any constraints provided that the construction activity takes place out of the production peak seasons. The consultative meetings minutes and participant lists with the community could be referred in the Appendix of this report.

Figure: consultation with the beneficiary community

11.2.1 Consultation with Community Study and Design Committee

During public consultation Participatory Irrigation Development and Mangement (PIDM) approaches were described for the user communities that they have to participate in all project implementation stages or project cycle. It was explained that beneficiaries have to participate on study and design stage, construction stage, construction supervision, operation and managemenet stages of the project cycle. As a result, seven (#7) Weteba Bedessa Irrigation Project Study and Design Committee members were established and assigned to work with study crew of the consultant. The committee worked with the consultant study crew and particularly with in identifying the water intake points (head works), preasure line, collection chamber, main canal route, secondary canal, tertiary canal routes and the location of social infrastructures

The study and design crew of the consultant was conducted discussion with the study and design committee, the discussion was focused on the roles and responsibilites of the committee, on the identification and location of the permenant and temperory irrigation infrastractures, identification, quantification and valuation of project impactes caused as a results of the project to the existing user comminities or individual farmers.

11.2.2 Consultation with Women and Youth

Consultative meeting was also held with women and youth groups of the command area. The meeting was held at their irrigation farm place located on the bank of Weteba Bedessa river of Weteba Bedessa kebele administration. In the discussion kebele sub-village team leaders, youth and women groups were available and participated as well.

The major point which is presented for consultative meeting was regarding the current access to land and asset holding, the way that irrigation project benefit women and youth, the role of women and youth in agricultural practices, the practices that harm women and youth, their willingness towards the proposed project, the involvement of women and youth in different decisionmaking process.

With regard to their current access to land and asset holdings, mainly the land are managed by adult men and women headed households and they couldn't be the primary beneficiaries of the project. Most youths (men & women) in the kebele have access land and irrigation farm through land rent and share crops arrangement. Some youth assist and works with their family on irrigation farms and they are active participants on vegetables production and marketing of their family products. Similarly, some youths as organized groups take irrigation land rent around the Weteba Bedessa river and work on irrigation activities using pumping irrigation. Based on the responses of the participants, the development of irrigation in the area would lead them to better job opportunity, better crop production and productivity. Women and youth could benefit from the project and they would be participating in every aspect of irrigation development. Therefore, they suggested that the implementation of the project is helpful to the area and to every memebers of the community at large.

Consultation with Irrigation Water Users' Groups

Consultative meeting was conducted with traditional irrigation water user groups and individual farmers in the project area practicing irrigation using water from Weteba Bedessa river, springs and shallow wells. Farmers and youth groups organize themselves into groups and individually and produces vegetable crops and cerals.

Accordingly, the traditional irrigation water users' group members stated that the water source from Weteba Bedessa is a significant or potential source of water for irrigation in the area. Small number of Farmers use the water for irrigation at different places in the proposed command area of the keble in their farm plots and farmers in the other side of the river at Shirka wereda also started to use the river water for intensive irrigation since 2009(E.C). Currently farmers responded that they did not face any water use conflicts, any water shortage and have no any negative attitudes towards the proposed project implementation and the idea will be shared to all group members. The groups have traditional cooperation, develops rules and regulations that bind them and they support each other during pumping water from Weteba Bedessa river, when taking water by plastic can, shallow well excavation and springs diversion to their farm lands, share crop technologies and also agricultural practices. The irrigation user group members around Weteba Bedessa river at Weteba Bedessa mentioned issues and problems as summerized below: -

- Lack of efficient pump suppliers with its accessories and spare parts

- Shortage of skills and knowledge on small-scale pump operation and maintenanace
- Absence of online pump operation and maintenanace technicians, even at the wereda level
- Shallow well and spring water sources were dried up during long dry seasons and high competition with human and livestock population over water use
- Lack of market shade at Shirka for perishable vegetables
- Shortage of improved seeds, fertilizers and pesticides at the required time
- Lack of farm tools that used for irrigation activities
- Lack of well-prepared irrigation demonstration activities at farmers field
- Absence of well-established outputs marketing and market information systems

However, the Wereda Agriculture and Natural Resource Development Office, small-scale irrigation development team with the support of AGP are currently encouraging farmers to use irrigation technology through distributing improved small-scale water lifting technologies, and by construction of ponds with in the command area which can also maximize the area to be developed with in the command area. Still the traditional irrigation water users at the bank of Weteba Bedessa river are expecting and consider as good opportunity to be incorporated in the command area of the propoesed Weteba Bedessa Irrigation Project.

11.2.3 Maximizing the Community Participation

Recently intensive participation of project beneficiaries and community become a mandatory requirement for any development project planning and implementation. The participation of beneficiaries and stakeholder at all study stages is indispensable in smallholder managed irrigation project to secure sustainability of the project in resource utilization and lifetime management.

It's believed that the communities have important knowledge and skills to contribute in technical, social, institutional and environmental parts of the feasibility and detail design studies. The communities by themselves and through their representatives have to be allowed to involve in site identification or confirmation, physical resource assessment, social and environmental assessments and watershed studies to enrich the study outputs and being part of the study team.

Accordingly, farmers, kebele adminstrations, especially sub-village team leaders and individual traditional irrigation user farmers of the area participated in engineering study, surveying, soil investigation, geology, hydrology, socio-economy assessment, agricultural development studies and other sectoral studies. Particularly, farmers were participated in locating the water intake points (head work), canal route identification, soil pit excavation and geology pit excavation, in the estimation of flood marks, River water level measurment, command area beneficiaries' village and user's identification, possible project social and environmental impact identification, crop selection and so on.

The existing experience shows that, the people through their kebele administrations, sub-village leaders and 1 to 5 leaders were participated in the construction process of social services such as schools' expansion, access roads, FTCs, health center, spring developments, shallow well excavation, nursery site development, church construction and so on. For this similar reason, the share of the beneficiary farmers on irrigation development and management is also recommended to be identified in the estimation of the bill of quantities. The bill of quantities indicated their share in terms of quantity and value. Accordingly, there should clearly be given to community during implementation time by setting the delivery time and quality standards. The construction administration of their share could also be managed by the kebele administration

leaders or their delegates with the final improvement of the project supervising body. Upon the operation phase of the project, the IWUA need to be strengthened prior to the handing over ofIrrigation management Transfer (IMT) is affected. The IWUA would have its own duties and responsibilities with regard to the utilization of water, finance, human and other resources, conflict management, repair and maintenance, collection of irrigation charges. However, the people stated that all activities that would take in their place should proceed by clearly communicating and discussing with them.

Therefore, as indicated in the ToR and PIDM guidelines that all consultant experts were consulted the communities in different forms of communication with acceptance of grass root level administration to ratify the on-going studies, survey activities, future implementation and sustainability of the project. The consultant strongly followed PIDM guidline and worked with OIDA staffs during community consultation and in field works.

12. LAND ADMINSTRATION AND RE-DISTRIBUTION

12.1 THE LEGAL FRAMEWORK

Land is the most significant and powerfull economic resources among Oromia people. The land re-distribution issue would be dealt in accordance with the proclamation of the region, the socio-economic implication and its longterm impacts on the existing political, economic and social systems of the region states that in any part of the region, land distribution and allotment shall not be carried out.

Based on the proclamation, the land holders residing in one kebele and where not less than 80 Percent of them request the Authority in writing for land distribution, the land re-distribution may be carried out in accordance with a directive to be issued to implement this decision on the land where question was submitted.

Similarly, When the land distribution or allotment is carried out based on request of people, the land holder whose land is to be decreased and taken shall, where it doesn't bring land division into pieces, have a right to get the land he has chosen and get compensation for an asset he produced and coud not pick it up.

However, the prohibition of land re-distribution or allotment provided shall not affect the activities of distribution of irrigable land to various users.

Accordingly, regarding, irrigation in general state that: -

- Any land to be cultivated by modern irrigation may, causing the acquisition of proper share of the previous landholder, be distributed.
- Farmer or semi-pastoralist whose land is taken by distribution shall, priory be paid compensation through the person to whom his land is to be given for permanent assets he cultivated on decreased land.
- The traditional irrigation usage shall be carried out supported by community cultural rules and counseling of the pertinent professional offices.
- Without prejudice to the obligations to apply the requirements to be issued by professional offices, before any modern irrigation activity is carried out, it shall be necessary to ensure the undertaking of the detailed design works for the dam to be constructed, conducting of the catchment works, and the non-damaging of the soil and stone dug during the dam construction on public.

In reference to the existing proclamation and determining of Minimum Rural Land Holding size and encouraging Land consolidation states that:- Without prejudice to the existing farmer holding or farm plot size of the family, the farm plot to be given in the future shall be, If it is irrigable land constructed by the expense of the government which is to be given to peasants, pastoralists or semi pastoralists, the Minimum size shall be 0.06 and 0.20 hectares, for irrigation and rainfed agricuture, respectively.

12.2 LAND RE-DISTRIBUTION ISSUES

Regarding the irrigation land redistribution issues, the assessment and points of focus of the legal frameworks summerized in the following two points: -

- Irrigation land re-distribution shall be made when irrigation structure is constructed by the expense of the government and held by peasants, semi pastoralists or pastoralists in order to use irrigable land properly and equitably.
- Where peasant farmers, semi pastoralist or pastoralists are evicted from their holdings for the purpose of constructing irrigation structure, land re-distribution shall be undertaken to make them get equitable benefit from the irrigation development to be established.

In order to implement the proclamation, the landholding size of each household need to be identified and registered. This socio economy study has got two major sources for the area holding size of each household. The first one is the data gathered from the selected sample household survey and the second is the figures collected from the registration of command area beneficiaries by the DA of the kebele. These two basic sources show that there are peasants with a landholding size of exceeding 1.00 hectares, and below 1.00 hectares. Moreover, in the command area farmers already received second round land use certificate.
On the other hand, discussion was conducted with different segemenets of the community, wereda adminstration council, sector offices and kebele adminstration council, the conclusions is that eventhough the farm size varies among users, farmers should be encouraged to cutivate their own irrigation land without re-distribution.

Therefore, while implementing the proclamation, the following points are proposed to be considered.

- The average land holding size in the command area is minimal and in Oromia culture land will be distributed to family members or young boys or married boys, land could be redistributed by giving priority to the household members.
- If farmers are evicted from their holdings for the purpose of constructing irrigation structure, the farmers should be provided irrigation land within the command area to make them get equitable benefit from the irrigation development to be established
- For some farmers who have relatively large farm land size in the command area exchange of irrigation land with rainfed land is the best option depending on the region land and water use policy.
- Rather than re-distribution of an irrigation land it is better to work strongly on efficent utilization of the command area and increses its productivity also an option.

In general, irrigation development project has to meet efficient and social equity and land distribution has to be planned with consent & agreement of the community without worsening the other and should aims to maximize the overall benefit for local, regional and national economic development. the Woreda land use and land administration office and the kebele land use and adminstration committee are responsible for proper utilization of all land resources.

12.3 LAND ADMINISTRATION

Currently, the Wereda land use and land administration offices are responsible for proper utilization of all land resources (farm land, grazing land, communal land). Land administration is one of the primary and essential activities of this office. It includes the preparation and maintenance of an inventory of individual holdings and provision of landholding certificates at different level. They are also responsible for the management of conflicts, confict on land use in the kebele, between kebele and so on. They have the mandate to implement land use and adminsitration in the region. Regarding irrigation land issues, Irrigation development sector has to work strongly and closely interms of providing study and design documents and data for modern irrigation project command area.

13. SOCIAL IMPACT AND MITIGATION MEASURES

13.1 POSITIVE IMPACTS

Economic Benefits: - The project would have both direct and indirect benefits. The production of various types of crops is the direct project benefits. The direct benefits would be substantially increased compared to the existing levels due to the selection of crops, high levels of yields, an increment of crop areas, increase of cropping intensity, application of inputs, proper crop production management practices and others. Besides, there would be an increment of by products from which the famers would benefit from. In general, the project implementation would ensure increment of production and income for the beneficiaries.

The direct benefits of the project which is represented by types of crops, the yield levels, the amount of crop production, the magnitude of intensity and the amount of project benefits are given in financial and economic analysis.

Promotes Women Income Generating Schemes: - Women lack source of income generating scheme which is one of the major problems for women in the project area and the development of irrigation scheme will enable women to participate in irrigated farming and garden vegetable production and generate income from development of the irrigation schemes. Particularly, widows, women households and young woman (graduate without a job & underemployed in the command area & adjacent kebele) will benefit in generating adequate income for their family and they also get an income which serves as an initial capital for the investment of other busness areas.

Non-Economic Benefits: Apart from the direct economic benefits of crop production, the project would have integrated various types of interventions that would take place within and outside the project area. Watershed development and environmental protection would be part of project components that would be financed equally by same financial resources. The interventions would thus bring economic benefits to the people both in generating incomes as well as conserving the environment.

The non-economic benefits include forestry factors as wind breaks and shelter belts to reduce wind, blowing dust and improve the living environment, and upper watershed forestation and others. This practice will reduce siltation problems of the structures; this in turn lengthens its life and reduces annual operation and maintenance costs of the project.

Indirect Benefits

Job opportunity: - In addition to the direct project benefits, the project would lead to the creation of employment both to the surrounding and the project places. Moreover, women and youth will enable to participate in irrigated farming and garden vegetable production and generate income from development of the irrigation schemes. Particularly, women household and youth will benefit in generating adequate income for their family.

Skill, Knowledge and Socio-cultural Improvement: - The skill- knowledge and cultural diffusion will be created and farming system and work culture of the households will greatly improve gradually through social interactions and skill transfer.

Agro -Processing Development: -Proposed Weteba Bedessa Irrigation Project is located in Weteba Bedessa river Watershed Development Corridor. The area has a promising potential for agro-processing development which is currently minimal in the project areas and only

concentrated in the larger towns. Development of extensive irrigated farming in the area and simultaneous improvements in agricultural production will enable the concurrent expansion of more diverse agro-processing in line with the objectives of the country in general and the regional state in particular.

Resources Use Maximization: - The area is endowed with abundant water (Weteba BedessaRiver), land and labour resources that have yet to be tapped and the development of more advance irrigation systems will utilize these resources to their optimal levels.

Improves Nutrition Status, Saves Labor and Time: - The community especially the women and children can get variety of vegetables at nearby without travelling to distance area. This can help them by accessing the variety of vegetables and also saves women labor and time from travelling long distance.

13.2 Negative Impacts and Mitigation Measures

The project would not result an adverse impact on people, religious, cultural heritage, reserved forest, national parks, historical places and property displacements. However, some of the project **negative social and economic impacts** are discussed below together with their mitigation measures.

13.2.1 Human Displacement

Weteba Bedessa Irrigation project is diversion irrigation system and the resource of water is Weteba Bedessa river. These structures will be constructed safely and would not result displacement or immigration of people. In the command area there are no villages, social service providing institution (schools, churches, mosques, nursery site, muslim cemeterybut ffoot path for livestock for fetching water at Weteba Bedessa river. The engineering design of the project was participatory and the survey data was also safely collected, which clearly identified the possible place for river bank, water intake point (head work), main canal routs, settlement places, social services institutions, trees, and access roads and so on. The project is, therefore will not result any displacement or movemenet of people from their original home and no resettlement plan will be required.

13.2.2 Farm Land Lossess

The various components of this project include: - access road, camping, water intake points (pumping station or head work), pumping line (pressure line), collection chamber (delivery pool), main canal, secondary canal, tertiary canal, on farm structure and social-infrastructures. There are also quarry or material supply site, temporary working (construction) places and others movemenets of people, vehicles and machineries. These project components are implemented on the ground or on some farmers' field, which results some permanent and temporary property damage or losses. Therefore, those irrigation project components that will results significant farm land or property losses of the community and its possible mitigation measures were assessed and summerized in the following paragraph.

Access Roads: The access road from the main gravel road via Gobessa town serves as all weather road. The road via to the head work and command area is dryweather roadwhich totals 4 KM from the main road. Access road construction includes 4m wide clearing, grabbing and fill works in spot areas including interceptor drain & cut works of sloping terrain on u/s side. This access road is mandatory, which currently has a foot path, bridges and passess on farmers' field or farmers' traditional irrigation farm lands.

On the other hand access road adjacent to the main canal route is also required to be constructed by the project, which can passes on the farmers field following the proposed canal route. Before the survey conducted, the water intake point, canal route and related irrigation facilities location were observed by the community representatives such as study and design committee, sub-village leaders, kebele administration council memebers and Development Agents (DAs) at the kebele level.

In this regard, the communities in the area have well experience of construction of access road, schools, soil and water conservation structures, FTCs, health centers and mosques on community labour bases. The experience they have will assists during construction not to create high property loss (minimize high soil cuts, removal of stone, demolishing of economic trees and other similar properties). In this respect the costs for establishing access road is included in the engineering BOQ, but the land on which access will be constructed should be the property of the farmers and needs propoer agreement and the land on which access road will be constructed is a fragmented land for idividual households and step by step assessment and regestration will be required during construction phase of the project.

Camp sites: Camp construction main part includes residence and/or office of consultant and contractors size 4.4m*4.4m, store 5m*5m, Cafeteria and kitchen facility size 6m*4m, shower and toilet rooms of total size 4m*2m, guard house facility of size 2m*2m and fence. The camp site location is proposed through discussion with the study and design committee of the project at close proximity to the primary cooperative Store. Moreover, it was also discussed that the camp will be the property of the IWUA and transferred to the IWUA during project final hand over. Thus, compensation cost for the land is not estimated for camp sites because it would be transferred to the IWUA and the property of the association.

River Water Intake Point (Head work):- Weteba Bedessa River is the sources of water for the project, which is Perennial River and is proposed point for diversion or gravity system irrigation.

Construction Material sites: According to the geology report the construction materials such as sand, stone, gravel and selected compaction soil will be required by the project during implementation. Under this case sand, gravel, cement and other industrial products will be purchased outside the command area. Stone will be purchased from legal producers and existing quiery sites, wood pole and wood products are purchased from individual farmers or legal traders at Gobessa town. Thus, no land will be affected and no compensation is considered as part of socio economy cost, because it is the contractor who can purchase and transport from where it is available. The detail of this would be presented under the geology report.

Similarly, social infrastructures such as cattle trough, canal crossing Foot Bridge and washing basin will be proposed in the designed irrigation blocks. The land required for such social infrastructures are considered small and no compensation is included.

Generally, the communities were discussed on the farm or grazing land losses, which arises as a result of the project implementation and similarly the kebele administration has also accepted responsibilites to settle any requestes of compnesation through discussion with the users' communities of the project. However, in some cases compensation costs are considered and calculated based on the existing procedures and proclamation i.e. Compensation Required= Affected land in hectare*average production (in quintal)*average yearly outputs price*10 years are considered.

13.2.3 Losses on Perennial Crops

Asthere is no any perinial crop developed in the command area nothing will be affected during construction of infrastructures on the head workl, main canal, secondery and tertiary cana.

13.2.4 Imapct on Grazing Land (Flood Rescission Area)

At the recommended site of the Weteba BedessaRiver there is no communal grazing land area on which river water and floods from up land will reside. But it is usually common to animals to stay on lands after crop harvest to graze crop residues at field till the rainy season farming arises As a result of the proposed irrigation project their will be no expansion of irrigation farm land to the garzing area, which minimize the size of grazing land. Accordingly, thers is no communal grazing area inside the command area and has no negative impacts on the project users.

13.2.5 Related to Weteba BedessaRiver Water Source

There is no other irrigation project proposed on Weteba Bedessa river and currently farmers in the up and down stream of the river cultivating farm lands and there is no welldeveloped traditional irrigation at the bank of the River. The water source is used for multi-purposes uses such as drinking, washing, irrigation, construction and also serves as a cooling mechanism for the surroundings environment which may have a cummulative imapct and pressure on the water resources of the river, which requires integrated watershed managements in the area.

13.2.6 Health Impact

Weteba Bedessa river is a perennial rive which flow through out the year and the irrigation is pumping system irrigation and no water will be stored at one place. However, as a result of irrigation project there looks to be some health-related impacts or diseases upon the people. There could be malaria and water borne diseases that come as a result of irrigation and the expected health problem in the area will be malaria, parasites and Amoebiases because of different raw eaten vegetables and fruits or non-cooked vegetables and fruits.

Moreover, implementation of the project will inherently lead to changes in the structure and concentration of the people, the labour force, sex composition and settlement patterns. Experience has shown that such changes may lead to increased incidences of communicable diseases and sexually transmitted diseases. This is partly because construction workers are mostly young, sexually active group of the population, mobile and are partly because they are forced to live in camps and small towns without their families. Therefore, the concerned Wereda health office, health center, health extension workers and private health institutions are expected to closely follow the health aspect of the people in and around the project area.

13.2.7 Irrigation Demand and Water Conflicts

Currently there is a demand for irrigation water and pressure on the existing farm land, unemployment and underemployment is prevalent. As a result there would be high and unmanageble demand and request for irrigation from the community around. Therefore, such demand should be managed with subsiquent study and implementation of different alternative irrigation technologies.

13.2.8 Impact on the Existing Soil and Water Consurvation Structures

There is no physicl and biological soil and water conservation structures constructed in the command area though it has a significant contribution for protecting soil erosion and increase production and productivity of crops and livestock through forage crops production and

managemenet. These structures are located inside the command area and as a result of the construction of an irrigation project, those structures will be affected and should be re-maintained.

14. SOCIO-ECONOMIC OPPORTUNITIES AND CONSTRAINTS

14.1 OPPORTUNITIES

14.1.1 Socio-Economic and Policy Environment

Currently, there are more opportunities than threats in the external environment which encourages increasing production and productivity thereby maximize the benefits of beneficiary farmers. Both the domestic and international conditions currently suggest expanding demand and population. The potential chance to increase production particularly for developing countries is not yet exploited. These opportunities with regard to irrigation development around Weteba Bedessa valley Development Corridor can be summarized as follows: -

- Government Commitment for Supports of irrigation development
- Adequate Available Water and land resources
- Better policy and economic environment
- Relatively better farm geographic location
- Growing consumption and demand, large domestic market
- Growing and large export potential
- Large Agro-processing Potentials and the development of industry centers
- Growing number of Universities, Technical and Vocational Education Training and other institutions for training, research and extension

As indicated above, the commitment of the government for supporting irrigation development to be given in increasing production and productivity is well evidenced in the GTP-II of 2015/2016-2012 E.C. and is an indicator of the government's commitment to support the success of farmers.

14.1.2 Diversified Crop Production Potential

According to the proposed crops models, production of range of grains, vegetables and fruits are possible around Weteba Bedessa irrigation farm both using irrigation and rain-fed farming. There are possibilities developing both diversification and specialization. There is also large room to use high yielding varieties with all other inputs even to more than double production from the current level. As the knowledge and skill as well as experiences of farmers get improved, together with strengthened capacity of the IWUA and support institutions, there is a high probability of increasing high value-crop production that increases their farm income.

14.1.3 Expanding Domestic Market

Despite the inefficiencies that exist in the marketing system due to lack of adequate and timely market information which leads coordination and timing of production supply, lack of efficient marketing institutions and market infra-structure, the local and foreign market potential of the crops recommended for Weteba Bedessa irrigation farm is very high. Most of the crops especially grains can be supplied in food deficit areas of the country and in the urban areas.

- **Large domestic market**: - This is especially true for vegetables and fruits which are not yet produced in the area. The interviews in the local markets indicate that the fruits handled by traders are brought from other areas or regions. The growing urbanization and income of the people is a driving factor for increasing demand. Growing per capita income and employment opportunities as well as tourist flows are the triggers for increasing local or domestic demand. Linkages to domestic markets in the urban and deficit areas in the country and neighboring

region in general and Oromia region in particular can be major destinations especially for cereals (maize and wheat) and pulses.

The relative location of the farm is also an advantage to this. The Weteba Bedessa irrigation farm is located in a relatively good geographic location, nearby the wereda capital Gobessa town. The towns growing towons along the Assala can be taken as potential market advantages for the project. This is a good opportunity which gives wider market and competitive advantage to farmers. The advantage is that the location has given the advantage not only to diversify their grain, vegetable and fruit production but also link it with other agri-businesses and value adding potentials.

- Mixed Farming and Linkage to Animal Husbandry**: -** The farmers in both in the command and catchment areas already practice mixed farming. The irrigation farming is expected to be linked with animal husbandry. The crop residues and the forages proposed in the crop model are based on the expectation that improved livestock production increases their farm income. The supply and demand factors that help to maximize crop production and linked with home-based animal husbandry (dairy and fattening) are encouraging.

- Linkages to Local Industries: - The grain crops produced such asTeff, wheat, maize and pulses including vegetables and fruits can be raw materials of food industries which produces various product components such flour, starch, paste, juices and others.

- **Agro Processing Potential**: - The processing of agricultural produce is at infant stage of development in the Region. These are mainly due to lack of skills, undeveloped raw material supply systems, and the market for processed products is small and not fully accessed. There potentials for the production of valued added products is also so high. These value-added products can be used both domestic and export markets. For Weteba Bedessa Irrigation, the following Processing are possible to be established by the IWUA, cooperative union of beneficiaries themselves as well as jointly with cooperatives in catchment area and those in the Wereda: -

    - Malt Barley and Maize Processing
    - Vegetable Processing
    - Fruit Processing
    - Milk Processing

Linkages to Agro-processing, Manufacturing and Industries is also possible through improving the marketing system and deliberate intervention of creating linkage with these local entities. The option of own processing of some of the produce is also on the table of the beneficiary farmers and their cooperatives.

14.1.4 Forward and Backward Linkage, and Import Substitution

The valueadded processing of products to be produced is also expected to have important import substitution advantage. The production of malt barley, maize flour, and processed vegetable products if well managed is expected to contribute to substitution of imports. Domestic production of fresh vegetables, maize, barley and pulses and supplying to agro-processing industries is potentially possible due to the growth in the industrial sector. Such industries are emerging and which also have both export and import substitution potential.

14.1.5 *Improvements in the Marketing System*

The recent achievements of the Government and the future trends in the expansion of market and related infrastructure have the potential to contribute to significantly improving the long-lasted bottlenecks. In the transport sector the construction of high ways roads, rural roads, railways and air strips are such most important progress that contributes to the efficiency of marketing system. The progress made in the telecommunication and power sector too are foundations to this. The changes in the supply of transport facilities including attentions given to commodity warehousing and grading facilities enhances the distribution and marketability of the products produced at Weteba Bedessa Irrigation Project.

The establishment of modern marketing institutions such as the Ethiopia Commodity Exchange (ECX), Ethiopia Commodity Exchange Authority, and Regional Marketing Agencies are steps further that lays the ground for market modernization. The ECX for instance has become successful in being a modern market coordination institution through the provision and introduction of modern membership-based trading, rule of the game and enforcement mechanism, commodity grading and standardized contracts, transaction guarantee, clearing and settlement of transactions, dissemination of market information, commodity grading laboratories and warehousing services for the commodities already considered. This progress is opportunity in the improvement of the marketing situation for Weteba Bedessa and the farmers anywhere in Region.

14.2 CONSTRIANTS

Based on the findings and summary results of our study apparoches and methdologies during the feasibility study of this project, farmers, youth and women groups in the command area mentioned critical socio-economic constriants. The constriants will be resolved directely and indirectly through irrigation and other integerated development approches. However, some of the constraints are mainly related to religious, capacity and technology, management of Production, marketing of commodities, competition and the operational environment. These are discussed below.

14.2.1 *Religious and Cultural Constraints*

The people in the area are Christian orthodox religion followers and assertively focused on their religion, believe and cultures. They celebrate and apply a considerable number of “holidays” in a month and year, where all hard labour works is usually not allowed. These provisions are more prominent among the community around the project and these religious and cultural issues are extended and have a limitation on production and productivity of the households. Moreover, the existing saving culture of the people in the area is low, which resulted in low investment.

14.2.2 *Capacity Constraints*

Local Level Government Institutions: - the local level governement institutions such as wereda sector offices, kebele administration, grass root level supporting organization (DAs & Farmers training Centers) and communitybased organization (CBO) have limited technical and managerial capacity in supporting the proposed modern irrigation development. Based on the discussion conducted with the respective institution they have very high interest and commitment for the project. However, staffs lack adequate knowledge, skill, office facilities, transport, budget and plan implementation strategies to train farmers and increase capacity of organization at grass-root level. Moreover, staffs of different sectors at grass root level (kebele level) lack

integration and coordination in the enforcement of community mobilization and participation for development.

Famers/ Beneficiaries: - The capacity related constraints on the side of direct beneficiary farmers at Weteba Bedessa Irrigation Project must be resolved through the effort modernizing their production using irrigation and increase their farm income. These include:

- Traditional agricultural practices, results to low production and productivity of crops and livestocks
- Lack of alternative livelihood activities
- Inadequate supply and use of improved farm implements and technologies such as improved seeds and fertilizer;
- Lack of improved livestock breeds and livestock feeds
- Lack of skill and adequate awareness in managing modern irrigation
- Lack of enthusiasm and active participation in the Community Based Organization;
- Knowledge gap on planning and coordination of production;
- Lack of skill and knowledge in following marketoriented production techniques and selection of most profitable crop
- Fragmented production (production takes place in small plot of land);
- Inadequate financing and credit facilities;
- Crop pests and diseases;
- Lack of proper storage and transporting facilities; and
- Lack of market bargaining power due to lack of organized efforts through cooperatives.
- There is no enough supply and extension in post harvest technologies.

Cooperatives/Unions: - Although there are efforts to organize primary cooperatives, Irrigation Water Users Groups and their union, the progress made in making a modern institution that perform an array of activities on behalf of the farmers seems gradual. The primary cooperatives have just been formed and doing limited number of activities and the Union is also formed. These institutions have limited capacity in addressing the farmers interest in all round way. They have inadequate demand forecasting, agri-business, project planning and management knowledge that move forward based on the interest of their members. They have also inadequate marketing knowledge.

14.2.3 Population growth

In the area there is relatively high population growth and the average family size is 7 persons/ family, which requires working hard, increase production and concurrent economic growth. For instance, the average population growth of the region is 2.9 percent annually which, require a comparable economic growth just to keep up with the population increase and to maintain a constant per capita income. Efforts to increase per capita production and growth will require economic expansion of over 2.9 percent. Moreover, such high population growth will also create high pressure on the local social services (health centers, schools, water supply points and others).

14.2.4 Lack of Alternative Livelihood Activities

Lack of alternative livelihood activities in the area is prevalent, as a result there is high level of underemployment and unemployment of youth and women, which will be a major challenge to the project planners, local officials and the farmers.

14.2.5 The Existance of Landless Farmers (Youths)

The average holding size per household has gradually and consistently declined from time to time, this dtermines the application of agricultural technologies and to increase agricultural productivity. Even though land redistribution was conducted in 1997 (E.C.) currently land less youth farmers are still abounded. Land is not currently avialable on the hands of active lbour force and there are landless youth, who requires land for their livelihood activities.

14.2.6 Marketing Related Constraints

It has been widely explored and concluded that marketing is the engine for local level economic development and the major market related constraints in the Weteba Bedessa Irrigation and surrounding market are linked to: -

- Inadequate capacity, awareness and knowledge of farmers, cooperatives, traders and service providers on marketing of outputs
- Losses due to lack of appropriate handling, transport and storage facilities
- Lack of ouputs quantity, quality and standards
- The existance of long marketing channels
- the existance of high transaction costs
- Inadequate capacity of supporting government institutions
- Inadequate and low capacities of institutions that do facilitating, intermediary and physical functions that coordinate the market
- Lack of well-developed market infrastructure which include modern marketing centers, warehouses, transport equipments and communication facilities.
- Lack of access to timely and reliable market information.
- Inadequate access to market financing or credit
- In efficiency in the market due to lack of adequate and efficient marketing institutions and information dissemination system

15. SUMMARY AND CONCLUSION

Oromia Irrigation Development Authority (OIDA) and HM Development Consult has been signed an agreement for feasibility study and detail design of Weteba Bedessa Irrigation Project. The feasibility study and detail design of the project comprises different discipline and socio-economic study of the project area is one of the works conducted under this stage. Weteba Bedessa Irrigation Project is located in Arsi zone, Shirka wereda. It is intended to produce crops over the net command area under irrigation and there is a total of 200 (178male and 22 female) beneficiary households with the average irrigation land holding of 0.32 hectares.

The consultant used and applied wider range of feasibility study and detail design socio-economy study apparoches and methodologies. The potential beneficiaries in Weteba Bedessa Irrigation Project site actively involved in the field level project components assessment and command area investigation activities. Several discussions were carried out with key informants, kebele leaders, elders, general community and traditional irrigation beneficiaries to assess the community attitude towards the intended project and irrigation development at large. The communities also participated in the site observation of existing traditional scheme canal rout tracing, other irrigation infrastructure fixation and indicted potential command area. Moreover, using systematic random sampling a sample of 15households (7.5%) were selected and interviewed. Household registration sheets were prepared by the consultant and potential users households registered and identified during this feasibility study stage.

Similarly, the study team undertaken community and stakeholder consultation with all level concerned administration and technical offices like water, irrigation and energy development; agricultural and natural resource development offices, health, education, cooperative, women and children, youth and sport offices. The technical staffs of the wereda offices particularly staffs of Irrigation development Office, were fully involved in feasibility study and detail design process on the field and in their offices, which gives an opportunity to both parties to exchange their knowledge and information for the better achievement of the feasibility study task of Weteba Bedessa Irrigation Project.

Among the constraints at the project area includes serious access road problems,frequent demolishing of traditional head work of the Irrigation project and lack of market for irrigation produces due to lack of access road.

Similarly, sustainable development, on the other hand, could be achieved with simultaneous efforts on all aspects of the socio-economic spheres that signify poverty to be fought in many directions. Therefore, some of the conclusion remarks with socio-economic study aspect of the project highlighted as follows;

- Comprehensively introduce/upgrade and facilitate appropriate/improved irrigated agricultural practices, which will result to increased production and productivity of crops and livestock's
- Apply family planning practices of farm households and similar population growth control mechanism, which will have an impact in controlling high population pressure on the existing land, similar resources and social services
- Better to create alternative livelihood activities, which will have siginificant impact in minimizing and controling underemployment and unemployment of youth and women.
- Increase and create important ground for farmers to access different farm implements and technologies

- Increase and create important ground for farmers to access improved livestock breed and livestock feeds
- Working towards the promotion of market linkage with traders which would have direct effect in strengthening the interaction/ linkage between the urban and rural economy.
- Implementation and management of the project requires participatory approach where local people get job opportunity in the construction of the project and should not be limited to migrants from surrounding towns and distant places. Efforts should also be made to highly involve existing women and youth in to the labor force, for temporary and permanent works.

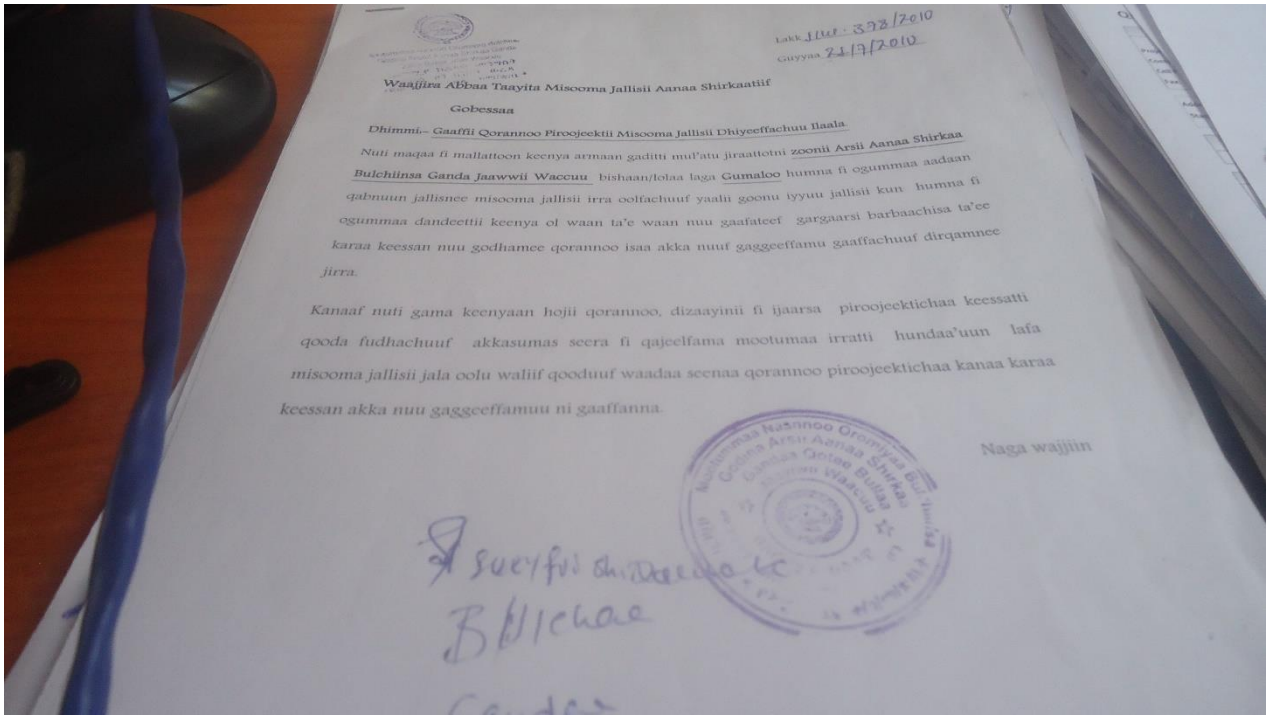
The project has no any adverse or puffed up negative socio-economic impact on upstream and downstream water users that shares the water resources of Weteba Bedessa river. Farmers and local stakeholders have positive attitudes and high willingness for upgrading the project. Now at this stage all stakeholders at the project level have knowledge about Weteba Bedessa traditional Irrigation Project and the implementation of the project has got acceptance and support by the anticipated beneficiary farmers and their institutions are ready to support the project in various ways and hence, the project is socially recommended to be implemented in the area.

APPENDICES

APPENDIX I: List of Enumerator and FACILITATORS

No.	Name	Position	Responsibility in Data collection	Tele. No.
1	Muktar Beshah	Wereda Communty Development worker	Overall Facilitator	0921081397
2	Shewaye Tesfaye	Wereda Irrigation expert	Overall Facilitator	0921081225
3	Ketema Dinku	Wereda Irrigation Engineer	Facilitator and source of secondary data	0921211354
4	Momina Hussen	Wereda Irrigation Expert	Primary and secondary data	

APPENDIX II: Letter from Kebele Administration Council to Wereda



Waajjira Abbaa Taayita Misooma Jallisii Aanaa Shirkaatiif

Gobessaa

Dhimmi:- Gaaffii Qorannoo Piroojeektii Misooma Jallisii Dhiyeeffachuu Ilaala

Nuti maqaa fi mallattoon keenya armaan gaditti mul'atu jiraattotni zoonii Arsii Aanaa Shirkaa Bulchiinsa Ganda Jaawwii Waccuu bishaan/lolaa laga Gumaloo humna fi ogummaa aadaan qabnuun jallisnee misooma jallisii irra oolfachuuf yaalii goonu iyyuu jallisii kun humna fi ogummaa dandeettii keenya ol waan ta'e waan nuu gaafateef gargaarsi barbaachisa ta'ee karaa keessan nuu godhamee qorannoo isaa akka nuuf gaggeeffamu gaaffachuuf dirqamnee jirra.

Kanaaf nuti gama keenyaan hojii qorannoo, dizaayinii fi ijaarsa piroojeektichaa keessatti qooda fudhachuuf akkasumas seera fi qajeelfama mootumaa irratti hundaa'uun lafa misooma jallisii jala oolu waliif qooduuf waadaa seenaa qorannoo piroojeektichaa kanaa karaa keessan akka nuu gaggeeffamuu ni gaaffanna.

Naga wajjiin

Lakk 18/02/2010

Guyyaa 29/09/2010

Abbaa Taayitaa Misooma Jallisii Oromiyaatiif

Magaalaa

Dhimmi:- Gaaffii qorannoo fi ijaarsa piroojektii misooma jallisii dhiyeefachuu ilaala.

Nuti maqaa fi mallattoon keenya armaan gadittti mula'tu jiraattonni Godina Arsii Aanaa Shir Kaa bulchiinsa ganda Elellee Dhaalanaa bishaan/lolaa Laga baddeessaa humnaa fi ogummaa aadaa qabnuun jallifnee misooma jallisii irra oolchuuf yaalii goonu iyyuu dandeettii keenyaa ol ta'ee waan argameef deeggarsi barbaachisaa ta'e karaa keessaniin nuuf godhamee ijaarsi isaa akka nuuf gaggeeffamu gaafachuuf dirqamnee jirra.

Kanaaf nuti gama keenyaan hojii qorannoo, dizaayinii, ijaarsa fi bulchiinsa piroojektichaa keessatti yaadan deeggaruudhaan, gahee ijaarsa keessatti nurraa eegamu hojjachuudhaan, akka barbaachisummaa isaatti lafa iddoo ijaarsa kaampii fi haroo qopheessuudhaan kennuu, fi prioojekticha karaa seera qabeessa ta'een Waldaan ijaaramnee bulchuudhaaf akkasumas seeraa fi qajeelfama mootummaa irratti hundaa'uun lafa misooma jallisii jala oolu walii qooduuf waadaa seenaa qorannoon piroojektii kanaa gaggeffamee ijaarsi ammayyawaan karaa keessaniin akka nuu gaggeeffamuuf akka nu deeggartan kabajaan ni gaafanna.

Nagaa wajjin!

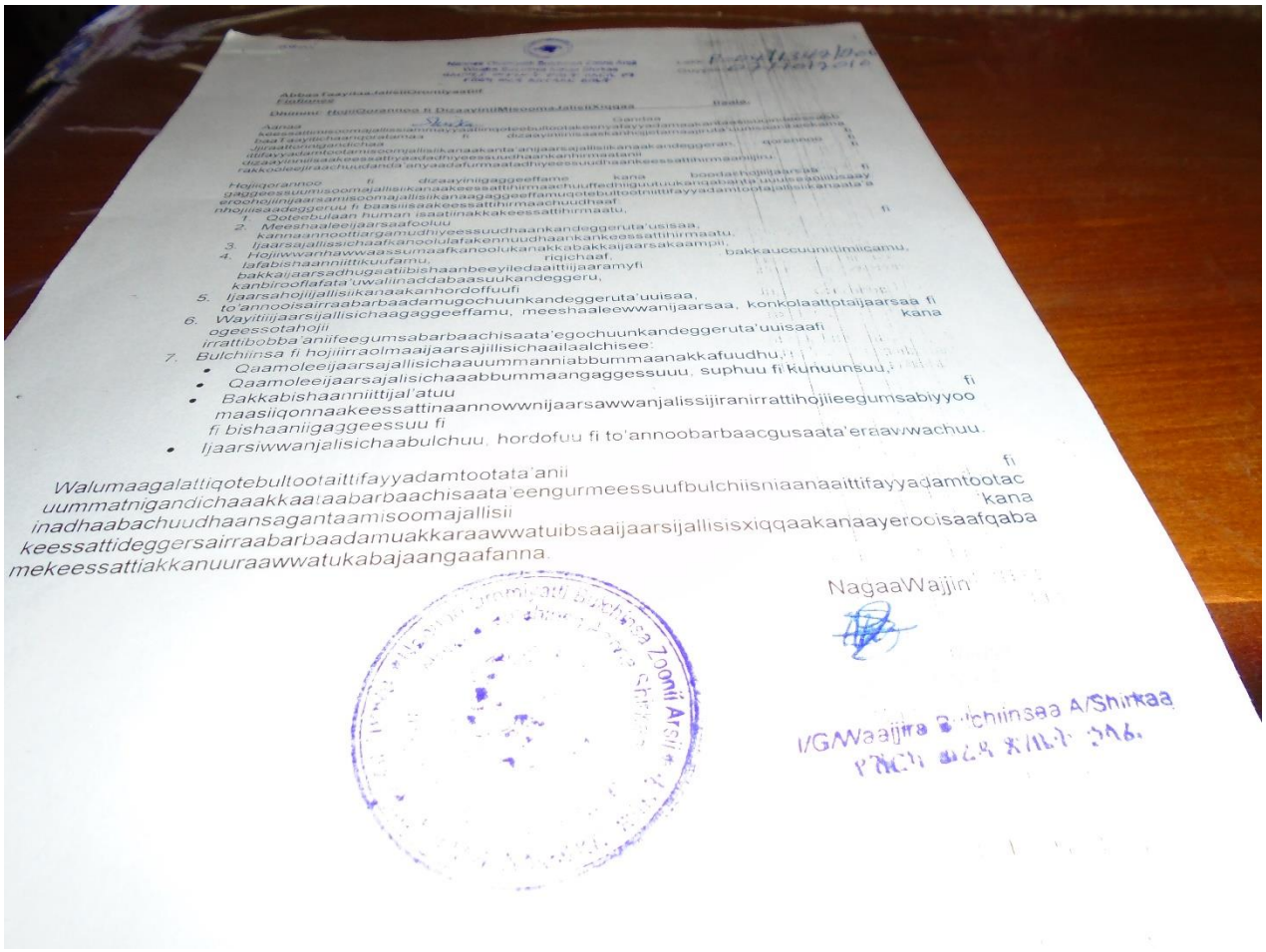
List of Participants- የተሳታፊዎችስምዝርዝር

No ተ.ቁ	Name ስም	Position in Kebele Administration Office ኃላፊነት	Tele No ስልክቁጥር	Signature ፊርማ
1.	Sh/Menza Kedir	Religious leader	0965378868	
2.	Sueti Kedir	WUA chairman	—	
3.	H/Abdulhakim Wman	Elder	0926557213	
4.	Siraj Amar	Zone leader		
5.	Mustefa Jemal	WUA Secretary	096/9495771	
6.	Huseik Hambe	"Care" leader	—	
7.	Sh/Yusuf Sh/Usman	Member	—	
8.	Abdurehman H/Muhammed	"Care" leader	—	

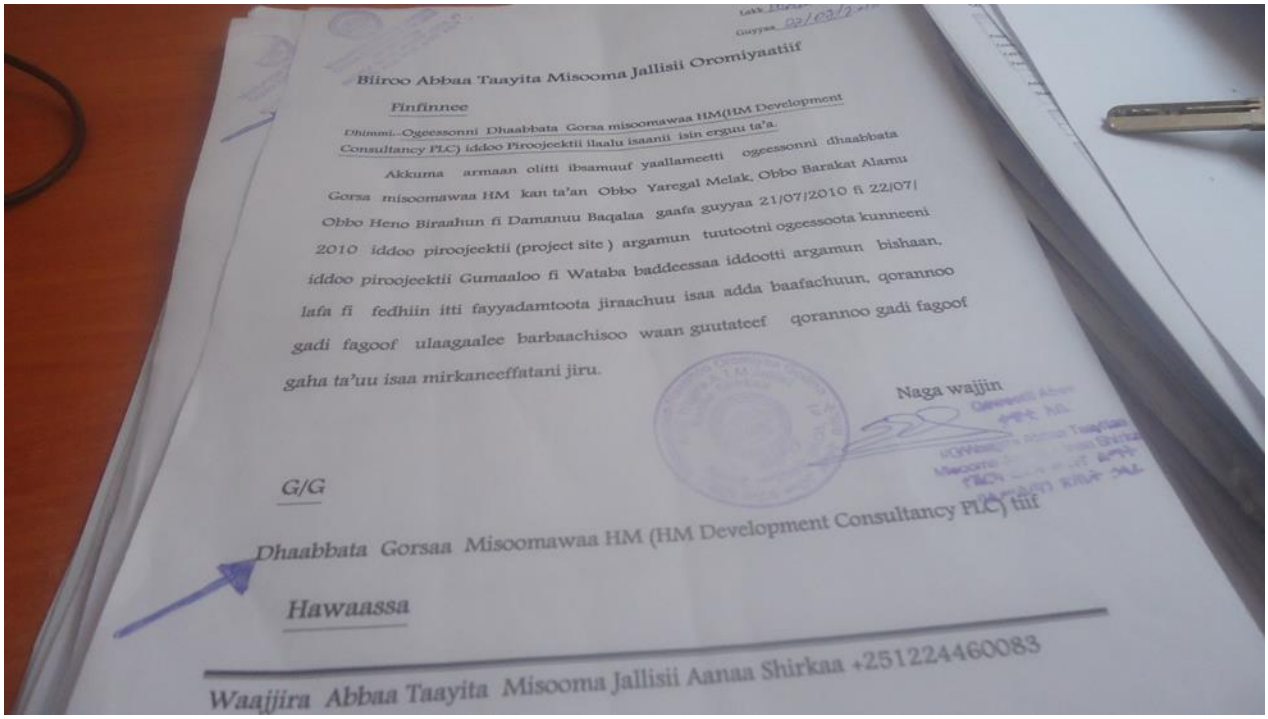
6

Discussion with Beneficiary Farmers :- ከተጠቃሚ አርሶአደሮችጋር የተደረገ ውይይት

APPENDIX III: Letter from Wereda Administration Council to Regional OIDA



Annex IV Letter fro wereda Agiculture and Natural Resources



Biiroo Abbaa Taayita Misooma Jallisii Oromiyaatiif

Finfinnee

Dhimmi.-Ogeessonni Dhaabbata Gorsa misoomawaa HM(HM Development Consultancy PLC) iddoo Pirojeektii ilaalu isaanii isin erguu ta'a.

Akkuma armaan olitti ibsamuuf yaallameetti ogeessonni dhaabbata Gorsa misoomawaa HM kan ta'an Obbo Yaregal Melak, Obbo Barakat Alamu Obbo Heno Biraahun fi Damanuu Baqalaa gaafa guyyaa 21/07/2010 fi 22/07/2010 iddoo piroojeektii (project site) argamun tuutootni ogeessoota kunneeni iddoo piroojeektii Gumaaloo fi Wataba baddeessaa iddootti argamun bishaan, lafa fi fedhiin itti fayyadamtoota jiraachuu isaa adda baafachuun, qorannoo gadi fagoof ulaagaalee barbaachisoo waan guutateef qorannoo gadi fagoof gaha ta'uu isaa mirkaneeffatani jiru.

Naga wajjin

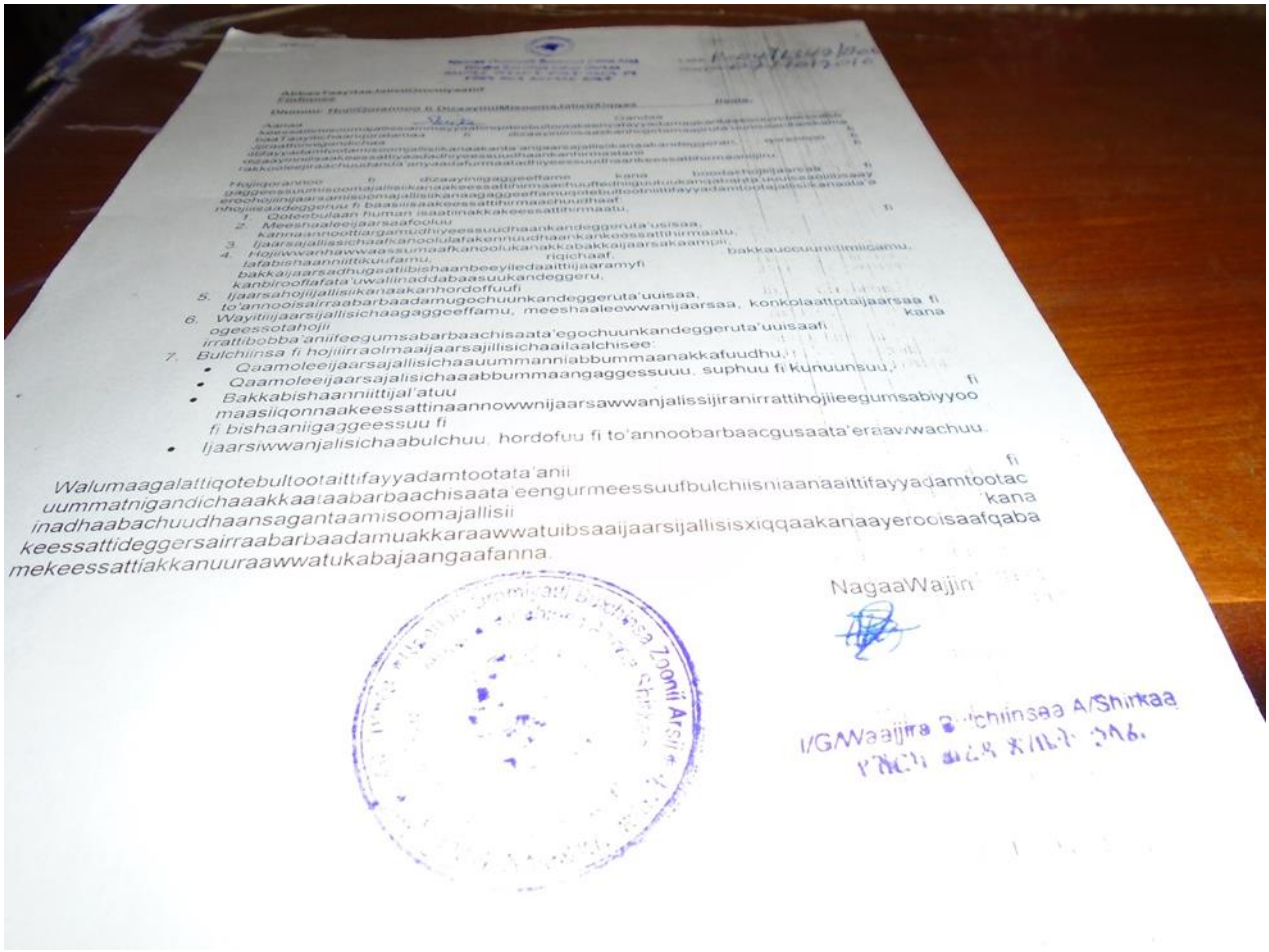
G/G

Dhaabbata Gorsaa Misoomawaa HM (HM Development Consultancy PLC) tiif

Hawaassa

Waajjira Abbaa Taayita Misooma Jallisii Aanaa Shirkaa +251224460083

APPENDIX IV: Consultative Meetings Minute of the Wereda Administration Council



APPENDIX V: Consultative Meeting Minute of Kebele Administration Office

Naannoo Oromiyaa Godina ... Aanaa Shirkaatii Wal'iti FBJ ... Watabaa Baddoessaa IGD

Gurraa

Qaboo Yaii

Iddoon Gandaa Eleleo Wallano

Loqaa jallis - baddeessaa irratti jallis Watabaa baddeessa.

Obb. Sharoo Antanah - H, M, DV. Consulado

" Muktar Nashaa I/G. Hirmana Umataa

" Musxafa Jamaal Bulchaa Gandaa

" Hajiraa Turii Jarsa biyyaa

Hirmmatootaa

Umataa Itti fayyadamtootaa jallis loqaa Watabaa badeessa Dh 174 Du 26 200

Ajandaa Marii

1) Feedhit hirmana Ummato proJecti

2) ProJekiti kana bulchuu keessat

3) Hirmannaa dubbartootaf dargaggoo

4) Itti-fayyadamo qabeenya jallis keessat

Qabiilee kana irratti obbo-muktar Nashaa keessummoota maqaaf ajandaa marii haraa erga ibsaan boodaa ProJeekitiin kun akka gandaa kanaf akka Aanaa keenyatti Seenaa barootaa dheeraaf rakkoo irraa jiraa qahaa fureefi qaafii keessaan kan bara 1971-2000 tin waggaa 39-40 isin ... kan fureedhaa kanaafi kana irraa ... rakko hanqaa Amat qaati deebii ... ulaan ta'ee kun hundaa kan dheeratee sababaa baajotaa isaa quddaaf ... Aanaa ol ta'eef akkasumas ... ol ta'ee qaraa Oromiyaa darbee ... Amatii Deebii arga chaa jira. kanaaf yero Amat kanduraa callaa cimtaan qamaa isin irraa eqamuu cimtaan hoijachuu qabdaan

Keessatuu Projeektii kana keessat teedhif hirmanen projeektii kan ijaarsaa isaa keessat hirmaachuu iddoo kennuu, projeektif bulchuuf qurma'uu iddoo haroo, iddoo mana kuusaa, dandi rakko qabuu sirreessuu, dhoqaa qaichuu dandoo'i qalchuu Naqeenraa isaa equu wali-qabatee keessati kan duraa Caalaa hirmana keessaan Cimuu qaba kanaaf mali jetaan jedhaan obbo Muktaar Nashaa Yadaa Umataa itti-yomuu kanisiisaan

1) Obbo Aliyi HIAhimad Aqayyuu - Alutti-jallis. Kun teedhis keenraa karaa hirmmadhuu jedhame hirmadhaa Sababi isaadi jallisi kun seeno heddu qabaa waggaa 40 itti xaree, itajee irratti dhib. amee qabeenra irratti tixadhee yeeroo Amat Sababaa dadhabeti osomaa nadhu tubuu qamo bishaan rookaa qannaa diquuti dhaqaa quruun lafa fogo demee jira

yeero Amaati - nami keenra lukkaa irratti dhaqaa dhayee Cablee jira, dusidaa midhamee, jiraa irratti dhaqaan dharee ajeefee jira waggaa - waggaa isin ijaaraniisaa jedhaan sitanee Abdii kutanee jira,

※ Rakkoon keenra quddaan Daandii hin qabinu Omishaa keenraa qaqqee Asii waan faqoo fenee demnuuf konkolaataan waan seenuu hin dandeenraaf sababa Daandii hin jireed harki Caalaan Omishaa keenra asiitii - qoqee bado Shamee qaba irratti qadi-qati bu'ee midhan quddaa keessaa jira.

2) Obbo Rakkaree HIHuseen Sadoo

Motumma Qancee dhabbinaa Amasi Abdi hin qabinu
Amasi qorraa isiin jiarsat qaltaan walin fanee
ilalaa kanaaf waan jedhuud dursaa Projeektiifi kana
hojjiadhuu Rakkoo dandi dhufee Qandaa keenraa
keessaa Qahee Xummuramuu didee hafee kun
Carraa asi nubinaa Qahee kana wari nu-harka
qabaa jedhee yadu nati-ta'ee jira.
Amasi Rakko Dandi hojjatamee Qandaa Qaho
keessatuu Rifichaa hin qabu bishaa kontolato
hindabarsuu kana irraa ka'ee
2ffaa Omishaa Qabaa keessu dhabuun Omishin
keenro fixee olii Shamee ~~maasii~~ keessat
hafee Qama binaatin maree qataa Amani
keenraa dhesuu hindandaa
3ffaa Huseen Abdi kutato.
Projeektiifi kana nutti qamaa keenra kundaa
fudhannaa Qaruu Sababaa Rakkoo Dandi Qanda
dhufee Qalee Rifichaa malkaa [illegible] uddoo irratti
itti Qodhuu dhabuu hanqaa bakka Qahuu qabuu
Qahuu dhabuun kun ammasi Sababa dandi irraa
ka'ee 1) Omishaa keenraa nu-farradhu dhabuu
2) Projeektii kana hojjiachuu rakko ta'uu
3) feedhi keenro bakko Qahuu qabuu Qahuu
dhabbuu dandi Qanda Qahee rifichaa
itti hojjiachuu dhabuu - hanqaa dandi
Qahuu qabuu qeesuu dhabuu Qama binaat
dursi dandi qulqulinan hojjiachuu dhabuu
kun - feedhif karraa keenro Qalmaa Qahuu
dhabbuudha.
Waamma Qalatii kan nuuti qabamuu qabuu keessaa
[illegible]

Ummanii keenraa WIBJ: durao ijaramee Qamaa Leenumaa nuut kennamee hojjachuu Qophidha Qama biraati Proseekti kana Ofi-keenraa haala Qarii ta'ee buschuu feedhiit Kayyu Qabaachuun Sirnaa ittifaradamo lafa haala Seera Qabeessaan nutii haalaa Nami ittifaradama ta'ee wali-Qalteen wali-Qodannee jirachuu Qama biraatin wali-Qixaa ittifaradama lafa hiruu keessat itti-Amanee wali-Qaltee dambi ittin bulmata kan Qabnuu ta'u waan Qaraa fuulo durati nu-Qunnamuu danda'uu busi Qabaachuu keenraa akrasumsaa WIBJ. kana ta'uu keenraa Mirkeensaa dh174-OU.26 W/Qob 200 walin ijaramnee jiraachuu keenro ni Qabino Qama biraatin Hirmaana Proseekti kun-nu-Qaafat-hundaa hojjachuu Qophi ta'uu keenro itti-wali Qalee jira. ka

muktar Naskar

Mustafa Tamere

Turaa Nassiiyaa

Musxafaa H/Abduro	
Alwaani Amaan	
Tamali Wasnii	[illegible]
Umaroo Huseen	Sirjii Aloo
H/Abduroo Huseen	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Amani Bju	[illegible]
Sirjii Ahmed	Ramaa Dabol
[illegible]	Rabiya Amin
[illegible]	HLFU Tuna

APPENDIX VI: Community/Traditional Water users comittee Minutes of Meetings

Name of the project Wataba Bedessa

1. Project Location
   - Kebele/s or subvillages or gare
     ~~Wataba~~ Elele Walena Kebele, Badessa Zone Gare (#6)
2. Head work area
   - Right beneficiaries The project do not provide water to the right side land which is part of same village. The righ side users ~~pump~~ water to their block across the river using pipe.
   - Left side beneficiaries Hacacina, Kugne, Rubsa, Badesa, Tulo & Meda-hora from head work to down stream
   - Command area kebele/s Only Elele walena Kebele is
   - benefitted from the project
3. Project Benficiaries
   - Existing benefices; Male____ Female____ Total____
   - Estimated benefices: Male 161 Female 39 Total 200
   - Distribution by sub-villages____
4. Existing conflict management practices and modalities
   cases among benefiaciaries is solved by applying rules in internal bye-law. others bring their case to legal system and elders may intervene to mediate the problem
5. Beneficiaries Contribution by Item and cost sharing arrangement and indicate slack period
   - local community people participate by free labor; to transport material & canal excavation. The period from december - may is good for community work.

Other (if any)

ከህብረተሰቡ ጋር የተደረገ ውይይት

Name of the Project: Weteba Bedessa Small Scale Irrigation Project
የፕሮጀክቱ ስም: ---------- አነስተኛ የመስኖ ልማት ፕሮጀክት

Region (ክልል):- SNNPRS; zone (ዞን) :---Arsi---; Wereda:-Shirka---Kebele (ቀበሌ)-Elele Idalona

Place of the Meeting-(የስብሰባው ቦታ) : ---------- Date-(የስብሰባው ቀን)---29/09/2010

Time of the Meeting-(የስብሰባው ሰዓት):- from(ከ) ---3:20- to (እስከ)---4:30

Brief Clarifications: Small scale irrigation project is under study and is going to be developed/constructed within the Kebele. The project would be used by the beneficiary farmers. We therefore make consultative meetings in order to understand and approve their interest.

የመስኖ ሥራን በቀበሌው ውስጥ ለመገንባትና ለአርሶ አደሩ ጥቅም ላይ ለማዋል የሚያስችል የጥናት ሥራ በመከናወን ላይ ይገኛል። ለዚህም ህብረተሰቡን ማወያየትና ተቀባይነቱን ማረጋገጥ አስፈላጊ ሆኖ ስለተገኘ በዚህ የተጠቃሚ ጠቅላላ ስብሰባ ውይይት በማዳበር ልናረጋግጥ ተሰብስበናል።

Agendas: አጀንዳ

Agenda 1: What are the **current uses of the water** for the proposed, U/S and D/S communities? ለፕሮጀክቱ የተመረጠው ወንዝ (ውሃ)ምን ጥቅም በመስጠት ላይ ይገኛል;

Proposed Community---They are using the River Power for irrigation Since 1988 E.C. They started diversion initially in 1978.

U/S Community---
- For cattle, pipe water is available for human consumption

D/S Community---Small irrigations are found along the stream, they also use for animal.

Agenda 2: The **needs, project intervention objective, development plan and disadvantageous** of the irrigation project? የመስኖ ፕሮጀክቱ አሰፈላጊነት፣ ስለ አለመው፣ ጠቀሜታና ጉዳቱ

The main objective is to provide water to water-short command area to enable users to intensify production and increase for productivity which contributes to better living Standard.

Agenda 3: What are **the attitudes /willingness of the community to participate in all the project Cycle**? ህብረተሰቡ ስለመስኖው ግንባታ ያለው ፍላጎትና ተነሳሽነት ወይም ለጠቀሜታ ያለው ግንዛቤ ምን ይመሳላል?

Beneficiary community members are willing to participate in phases of the project. They have participated during feasibility study during discussion of surveying work both ideally and by labor contribution in clearing surveying route.

Agenda 4: Are there water users **(U/S or D/S)** other than the intended beneficiaries of the command area, and what are their and the Kebele's expectations towards the project? ሌሎች የውሃ ተጠቃሚ አካላት (ከመቀልበሻው በላይና በታች) በአሁኑ ጊዜ ወይም ለወደፊቱ ሊከሰቱ የሚችሉ ስለመኖራቸውና ሊከሰቱ ስለሚችሉ የውሃ የጥቅም ግጭቶች ስለመኖራቸው

There is no other plan on the upper stream of the headworks that can affect the project. Downstream users are beneficiaries of the project and other river sources are available for the down side parts out side of the targeted Kebele.

Agenda 5: What are your **expected contributions or forms or modes of participation** in cash, kind, labor, or in all? ተጠቃሚው አርሶ አደር በፈቃደኝነት ሊያደርጋቸው የሚችላቸው ተሳትፎዎች (በገንዘብ፡ በዓይነት፡ በጉልበት)

Beneficiary farmers can participate through free-labor to excavate canal and road route clearance or clearing the access road

Agenda 6: Describe the size of Land Area that could be farmed by one farmer or **decision on land distribution requirement by all beneficiaries**? አንድ አባወራ ሊያለማው ስለሚችለው የመስኖ መሬት ስፋት አቅም በተለመከተ

Users are willing to use the land in irrigation are as per Regulation of the Region which states that each household cannot hold irrigation land of > 0.5 hectare.

Agenda 7: Appropriateness of the headwork (intake sites)☐ pump house site ☐ main canal routs and night storage sites? የተመረጠው የውሃመጥለፊያ ቦታ፤ የውሃ ፓምፕ ቤት፤ የዋና ቦይ መስመር፤ የውሃ ማጠራቀሚያ ኩሬና ሌሎችም ምቹና ተቀባይነት ያላቸው ስለመሆኑ

Headwork and pump site is selected by participating the IDWUA committee & local leaders who participated through the whole session of field work for study

Agenda 8: Location of **foot bridges across canals**, and cattle crossings at points; and social structures such as washing points, cattle troughs, steps into the canal for water collection points? የከብቶች ውሃ መጠጫ፤የከብትና የሰው መሻገሪያ ድልድዮች ፤ የውሃ ኩሬ የት ሊሆኑ እንደሚችሉ ስለመጠቆም

Such structures were located as per the request of community members of the area of study

Agenda 9: Assess the project implication due to **displacement, land reallocation, compensation and asset losses** (በፕሮጀክቱ ምክንያት ለሚደርስ መፈናቀል፤ የንብረት ና መሬት ለሁሉም ተጠቃሚ አርሶ አደር አገልግሎት በመዋሉ ለለሚጠየቅ ካሳ አርሶ አደሩ ያለው ውሳኔ ምን ይመስላል?

The project has no visible displacement of properties beyond clearance of some trees on access road. It is confirmed with beneficiaries that there is no compensation need.

Discussion with Beneficiary Farmers :- ከተጠቃሚ አርሶአደሮችጋር የተደረገ ውይይት

3

Agenda 10: What **types of crops** do you prefer to produce using the improved irrigation project በመስኖ ፕሮጀክት ማብቀል የምትፈልጉት የሰብል ዓይነቶች

Sugar cane, Avocado, Papaya, Onion, tomato, banana.

Agenda 11: Is there **any land use plan/investment projects** to take place within the project areas other than this SSIP ? ሊለማ በታቀደው ቦታና እንዱ,ሁም በተለያዩ የፕሮጀክት ቦታዎች ላይ ሊሠሩ የታቀዱ ሌሎች ሥራዎች ስለመኖራቸው

No

Agenda 12: What is the idea of the community on the issues of **cost recovery and opinion about water tariff payment?** የፕሮጀክቱን ወጪ ለመጋራትና የውሃ ታሪፍ ክፍያን ለመፈጸም የአርሶ አደሩ ተነሳሽነት ምን ይመስላል ?

Users are organized in WUA and they have started fee collection from members for operation & maintenance cost

Agenda 13: Readiness and willingness to **use and mage** the irrigation project? who manage the **different irrigation infrastructures** (HW, Pumps, MC, NS, SC and TC)? በመስኖ ልማት ፕሮጀክቱ ለመጠቀምና ለማስተዳደር ዝግጁ ናችሁ? የተለያዩ የመስኖ ውቅሮች በማን ቢተዳደሩ መልካም ነው?

They have WUA committees delegated for different task.

Agenda 14: Describe Other possible project impacts ሌሎች በፕሮጀክቱ ምክንያት ሊከሰቱ የሚችሉ ማህበራዊ ተጽዕኖዎች (impacts +ve or -ve) ቢገለጹ

- The project has positive impact as it provides water to irrigate under short land which benefits additional household and youngesters who mostly migrate to Saudi Arabia and internal towns in Search of job.

Agenda 15: Others suggestion ሌሎች አስተያቶች ካሉ ቢጠቃሉ

5

Discussion with Beneficiary Farmers :- ከተጠቃሚ አርሶአደሮችጋር የተደረገ ውይይት

APPENDIX VII: Petition and Lists of Beneficiary Community

Community Petition format for Wateba Badessa study 2010

Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
1	Madina Jilo	Du	50	4	[illegible]	
2	Muhammad Kamaalo	Dhi	20	3	muhammad	
3	Muktar Sh/Muhammed	"	16	5	Muktaar	
4	Abdurazig H/Muhammed	"	28	-	[illegible]	
5	Surxi Kadiir	"	50	13	[illegible]	
6	Mustafaa Hajjii	"	28	1	Mca3xcaf aa	
7	Sh/Umer Kadir	"	40	6	[illegible]	
8	Alo Hindheessaa	"	73	13	[illegible]	
9	Umar Hajo	"	32	11	Umar Hajoo	
10	Musxafa Jamal	"	39	6	[illegible]	
11	Turii Haiji	"	45	10	[illegible]	
12	Musxafaa H/Abdurroo	"	30	9	MUSXFAA H/ABDIROO	
13	Amaan Kaddu	"	50	8	Amaan [illegible]	
14	Abdulfatahi Amaan	"	24	2	Al[illegible] Amaan	
15	H/Ganuaa Haseen	"	60	12	[illegible]	
16	Sh/Adam Kadiir	"	32	12	[illegible]	
17	Juneydii H/Usmaan	"	41	5	[illegible]	
18	Sh/Abdulrazaq Saaddoo	"	80	7	Sh/Abdurazaf	
19	H/Abdulakim H/Usmaan	"	70	11	[illegible]	
20	Sh/Manzaa Kadiir	"	70	12	[illegible]	Abbaa Amantaa
21	Misraa Bakar	DU	37	6	[illegible]	
22	Huseen Sh/Manzee	Dhi	24	1	Husen	
23	M/Nuur H/Abdulakiim	"	36	8	mahamd	
24	Sh/Umar Kadiir	Dhi	40	6	[illegible]	
25	Haajitee H/Hasan	DU	28	3	[illegible]	

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Community Petition format for Weteba Bedessa study 2010

Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
26	Galgalee H/Jibroo	DU	30	3	Galgale	
27	Sanaa Kinoo	"	38	5		
28	Rahmaa H/Ameen	"	26	6		
29	Huseen Usmaan	Dh	40	8		
30	Zanzoo Jamaal	DU	25	7		
31	Sh/Yasuuf H/Usmaan	Dh	35	8		
32	Aljebar H/Mahaammed	Dh	38	3		
33	Halloo Algaadir	DU	62	8		
34	Raahmaa Dabballee	DU	20	5		
35	Ziiraa Saaddoo	DU	84	4	Musxafaa	
36	Musxafaa Hambee	Dh	30	3	Musxafaa	
37	Ibraahim Hambee	Dh	29	2	Ibrahim	
38	Ganna Junaydii	Dh	22	3	Ganna	
39	Huseen Hambee	"	35	8		
40	Zeeytuu Hajjii	DU	30	4		
41	Zaahoo Duubee	"	35	4		
42	Saafii Muusaa	"	30	3		
43	Mohaammad Saaddoo	Dh	80	3		
44	Araboo Bakaree	"	20	4	Araaboo	
45	Billuu Hambee	DU	60	1	Billuu	
46	Abdulgaadir K/Hajjii	Dh	55	4		
47	H/Jibriil H/Mahaammad	"	45	8		
48	Umar H/Mahaammad	"	49	11		
49	Araboo Umar	"	18	1		
50	H/Abdulgadir Azimoo	Dh	100	2		

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Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
51	Kaliil Goobee	Dhi	45	7	Hasan Kalil	
52	Maammee Saaddoo	Dhi	22	6	maamm Saado	
53	Toree Kaduu	"	30	9	QaasiimToree	
54	Abdulwaahid Amaan	"	18	-	Alwaahid	
55	Umar Sh/Abdulrazaaq	"	18	9	Omar	
56	H/Abdurroo Huseen	"	70	16	Jundii	
57	Makkoo Ismaiel	DU	30	4	[illegible]	
58	Safiyyaa Ulii	DU	72	1		
59	Mohaammed Asaabal	Dhi	30	3	Nafisaa	
60	Mana Barumsa Karrayyuu Badessa	-	-	-	muzammil	
61	Amaan Baaluu	"	40	3	[illegible]	
62	Maakidaa H/Huseen	DU	45	9		
63	Abdurhman Amaan	Dhi	25	3	Abdurahman	
64	Bukar Amaan	"	18	1	Bukar	
65	Awalo Sulxii	Dhi	27	2	Awalo	
66	Faaxumaa Bahmud	DU	29	5		
67	H/Qaasoo H/Burqaa	Dhi	80	2	[illegible]	
68	Bakaree H/Huseen	Dhi	75	6	[illegible]	
69	Yuusuf Bakaree	"	44	7	[illegible]	
70	Mohammednuur H/Abdulakim	"	30	7	[illegible]	
71	Kamaal Hajiqaasoo	"	25	7	kamamal	
72	Nashaa H/Burqaa	"	80	8	[illegible]	
73	Jamaal H/Qaasoo	"	36	8	Jamal	
74	MuhaammadHuseen Jamoo	"	35	11	MUHAMMED	
75	Muktaar Maddee	"	25	7	muktaar madde	

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Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
76	Jamuu H/Burqaa	Dhi	65	5	[illegible]	
77	MohammedHuseen Hajjii	Dhi	22	4	M/Huseen	
78	M/Huseen Jamuu	"	35	11	muHomdi	
79	Sheekoo Dumii	"	45	8	[illegible]	
80	Faloo Doorjjoo	"	100	4	[illegible]	
81	Xoobaa Haajoo	DU	37	5	[illegible]	
82	Tolaa Saanii	Dhi	35	8	[illegible]	
83	Jamaal Hajjii	"	42	7	[illegible]	
84	Xayibaa Cappaa	DU	60	2	[illegible]	
85	Usmaan Hajjii	Dhi	35	8	[illegible]	
86	M/amiin H/Qaasoo	"	42	9	[illegible]	
87	Kadiir Nashaa	"	32	5	[illegible]	
88	H/Mustafaa Nashaa	"	37	9	[illegible]	
89	Maakidee H/Allakiim	DU	32	8	makdee	
90	Makkoo Usmaan	"	40	7	[illegible]	
91	Allaziiz H/Muhammad	Dhi	26	–	Abidulzi	
92	Abdulfetahi Amaan	"	25	3	Abidulee	
93	Abdulwaahid Amaan	"	22	2	[illegible]	
94	Maamma H/Huseen	"	25	7	[illegible]	
95	Muhaammad H/Huseen	"	35	11	muhamedi	
96	Kamaal Huseen	"	61	7	[illegible]	
97	Ahimad H/Ahmadaa	"	23	8	[illegible]	
98	Tuni Asaabal	"	37	3	[illegible]	
99	Gannaa Juneydii	"	22	2	[illegible]	
100	Amiilaa Jeylaan	"	25	3	Abilali	

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Community Petition format for Klataba Badessa study 2010

Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
J01	Huseen Hamdaa	Dh	40	8		
J02	Shubbaa Usmaan	"	40	4		
J03	Siraaj Amaan	"	35	7		
J04	Ahmad Tuni	"	22	3		
J05	Ahmad Abdullahi	"	50	11		
J06	H/Umar H/Ahmadaa	"	45	10		
J07	Jamaal H/Huseen	"	58	8		
J08	Maamiaa Dhubee	DU	53	5		
J09	Al Qaadir Hajjii	Dh	40	4		
J10	Amaan Hajjii	Dh	52	6		
J11	Bakar Ahmedoo	"	32	6		
J12	Huseen Usmaan	"	40	8		
J13	H/Abdulfaadir Ayroo	"	60	4		
J14	Hasnaa Burjaa	DU	37	5		
J15	Maamuaa Saaddoo	Dh	27	5		
J16	Anaajoo Gobee	DU	48	2		
J17	Tore Kadir	Dh	35	11		
J18	Maammuud Ahmadoo	"	22	3		
J19	Amaan K/Hajjii	"	51	6		
J20	Umar Huseen	"	35	8		
J21	Hajjii Gammaa	DU	40	3		
J22	Asaabal Gumtuu					
J23	Al/Abdulakiim H/Usm					
J24	Hajjii H/Usmaal		60	5		
J25	SN/Yuusuuf H/Usmaa		39	5		

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Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
126	H/Ammada Asaayyaa	Dhi	95	4		
127	Umar H/Ahmada	Dhi	45	9		
128	Alijjii H/Ahmada	Dhi	60	8		
129	Haawaa Kadir	DU	55	1		
130	Tanaal H/Usmaan	Dhi	71	14		
131	Aniinaa H/usmaan	DU	60	12		
132	H/Aabbee Ahmadaa	Dhi	40	6		
133	Zubeyyee A/Qaadir	DU	30	5		
134	Jeylaan H/Usmaan	Dhi	36	7		
135	Muhaammad Ahmidoo	"	32	10		
136	Haajjii Saaeddoo	"	53	4		
137	Aloo H/Ahmadaa	Dhi	40	10		
138	Madiinaa Ibraahim	DU	40	8		
139	Zaynuu Maddee	"	38	3		
140	Kadir Gooboo	Dhi	40	9		
141	H/Abdulqaadir K/Huseen	"	80	3		
142	Sulxaan H/Muhaammed	"	46	8		
143	Sulree H/Usmoo	"	45	1		
144	Safiyyaa Kulii	"	40	7		
145	Balloo H/Jukulee	"	24	4		
146	Tolaa H/Muhaammad	"	34	6		
147	Tolaa Saanii	"	35	8		
148	Makkushee Usmaan	"	36	5		
149	Usmaan Haaji	"	35	8		
150	Muktaar Amdee	"	32	12		

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Community Petition format for Wateba Badessa study 2010

Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
151	Sh/Muftii Sh/Jelil Sh/Jemal	Dhi	34	9	Muftii Sh Jeelil	
152	Makkoo H/Xaahir	Du	32	10	Makko H/Xa	
153	Na'iimaa H/Musxafaa	Du	33	7	Neimaa H/Mus	
154	H/Teenaa Tritoo	Dhi	47	10	H/Teena Ito	
155	Hamzaa Kadiir	DU	40	5	[illegible]	
156	Kadiir Muhaammad	dhi	30	5	Kadiir Muha	
157	Ahmad Sh/Alrazaaq	Dhi	40	17	[illegible]	
158	Bakaree Qaasoplii	"	40	8	Beekaree	
159	Aadam Huseen	"	30	8	Adam husen	
160	Muhaammad H/Ahmad	"	30	7	Muhamad H	
161	Saadiq Al jabbaar	"	32	1	Sadiq Abid	
162	Kaliil Gammadaa	"	80	5	Kalil Gem	
163	Shuree Gannaa	DU	35	5	Shureeta	
164	Taajuu Muhaammad	Dhi	38	5	Taajuu muha	
165	Saadam Haashim	"	25	3	Sadam Heshim	
166	Maddaa Amaan	Dhi	29	9	Medan Aman	
167	Gannaa Hajjii	"	40	11	[illegible]	
168	Umar Hajjii	"	33	4	Umer Haji	
169	Abdulwahaab Muhaammad	"	35	2	Abidulwahab muh	
170	Muhaammad Abdullaahi	"	40	12	[illegible]	
171	Huseen Ahmad	"	33	5	Huseen Ahimed	
172	Xaahir Hajjii	"	50	13	[illegible]	
173	Shamsaddiin Gannaa	"	28	5	Shimsedin Gen	
174	Hasan Kaliil	"	25	3	Hasen Kelil	
175	Musxafaa Tusey	"	34	11	Mustefa Tusev	

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Uunkaa Mallattoo Qonnaan Bultootaa IJaarsa Jallisii Ammayyaatiif Gaaffii Dhiyeeffatan

T/L	Maqaa Abbaa Warraa /Haadha Warraa/	Saala	Umrii	Baay'ina maatii	Mallattoo	Ibsa
176	Naiimaa H/Mussafaa	DU	39	13		
177	Ammalaw H/Ahmad	Dh	35	6		
178	Aadam Abdullaahii	Dh	38	5	Adamii Abdullahii	
179	Siraaj Ahmad	"	22	2	Siraaj Ahmad	
180	Aadam Ahmad	"	28	6	Adami Abdulkhii	
181	Aloo H/Usmaan	"	30	4		
182	Kadiir Nashaa	"	28	5	Kadirii nashaa	
183	M/Amiin H/Baasoo	"	40	8	MAmii Hbasso	
184	Ashaa Kadeer	"	35	7	aShaa Kadeer	
185	Umar H/Baasoo	"	38	14	Umarii Hbasso	
186	H/Mussafaa Nashaa	"	29	9		
187	Jamaal Hajjii	"	41	7		
188	Tolaa Saamii	"	35	8		
189	Makkoo Usmaaeel	DH	37	7		
190	Maakidaa H/Abdulhakiim	"	30	8		
191	Hasan Kamaaloo	Dh	37	7	Hsnii Kemalo	
192	Muhaammad Kamaaloo	"	28	5		
193	H/Huseen Hindheessaa	"	50	10		
194	H/Jemaa Hindheessaa	"	42	7		
195	Halloo Abdulqaadir	DH	50	3		
196	Abdulmalik Aloo	Dh	28	6	Abdulmalik	
197	Ganna Aloo	"	40	7		
198	Siraaj Aloo	"	30	4	Siraaji Aloo	
199	Aloo Hindheessaa	"	60	10		
200	Umarbo Hajjoo	"	35	12	Umarii Hajoo	

Zone Arsi; Woreda Shinka Kebele Elele bilalena Page 8 of 8

APPENDIX VIII: List of Sample Households

Se.No	Full Name	Village	Family size			Marrige status	Sex	Eductio ttus	Level of education
			M	F	T				
1	Adam Ahmed	Wataba	3	2	5	Married	Male	38	Reading and writing
2	H/Husen Hindaya	Wataba	5	6	11	Married	Male	50	5
3	Awolu Ahmed	Bedessa	3	3	6	Married	Male	35	Illiterate
4	Burka Qawiti	Bedessa	3	5	8	Married	Male	40	2
5	Shura Gemedo	Weteba	2	3	5	Married	Male	35	6
6	Hawa Kedir	Weteba	5	3	8	Married	Female	40	Illitrate
7	Mako H/Tabiri	Bedessa	4	4	8	Married	Female	32	Illitrate
8	Shura Gona	Wetera	2	4	6	Married	Female	35	Illitrate
9	H/abe Ahmed	Bedessa	3	3	6	Married	Male	40	Illitrate
10	Kedir Gobena	Bedessa	5	4	9	Married	Male	40	Illitrate
11	H/Abdulkadir Ayano	Wateba	2	2	4	Married	Male	60	Illitrate
12	Jemal H/Hussien	Bedessa	5	3	8	Married	Male	58	Reading and writing
13	Jemal Haji	Weteba	4	3	7	Married	Male	42	Reading and writing
14	Tola Sanni	Bedessa	5	3	8	Married	Male	35	Reading and writing
15	Toru Kedu	Weteba	3	2	5	Married	Male	30	Reading and writing
	Total		**55**	**50**	**105**				

APPENDIX IVII: List of Contact Persons with their institutions

No	Name	Position/Office	Telephone No.
1	Tesfaye Akuma	Administration Office Administrator	0913274776
2	Nigusse Tabor	Environmental Prottection Authority Head	0912209414
3	Negesse Beyene	ANRD &LivestockOffice Office Head	09112209491
4	Moge Abebe	Cooperative Promotion Office Head	0912246048
5	Getachew Jada	Irrigation development Office Head	0913305629
6	Muluneh Bonsa	Water and Energy Office Head	09100623258
7	Asrat Tadele	Education office head	0910545814
8	Fita Ajabi	Women and Children Affairs Office Head	0922435995
9	Ketema Mechessa	Rural Land Adminstartion and protection Office Head	0913217795
10	Girma Assefa	Youth and Sport	0912845420
11	Million Bekele	Health Office Head	0910397882
12	Asfaw Degefa	Health Office expert	0913089502
13	Workneh Debele	Youth and Sports Chairman	0937661122
14	Megersa Gadissa	" " Vice Chairman"	0929108790
15	Lelisa Adugna	Women and Children office Plannbudget expert	0913752350

APPENDIX VIII: List of Foucs Group Discussion Partcipant

No	Name	Position in Kebele Adminstration Office	Tele. No.
A	**Weteba Bedessa Administration Couincel**		
1		Weteba Bedessa Chair Man	912712274
2		Vice chairman	910486680
3		Youth and Sports representative	**0977095585**
4	W/o Ibsa Makoya	Women ,,	
B	**Weteba Bedessa Administration Couincel, Youth Groups and Sub-village leaders**		
1		Youth and Sports representative	0977095585
2		Farmer	-
3		,,	0919216685
4		,,	-
5			
6			
C	**Women Groups**		**-**
1		Women representative	-
2		,,	-
3		,,	-
4		,,	-
5		,,	-
D	**Irrigation Water User Groups**		
1			912712274

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7. Federal Negarti Gazeta of the Federal Democratic Republic of Ethiopia, Irrigation Water Users' Associations Proclamation No. 841/2014
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