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1. INTRODUCTION

1.1 Background of the Study

Small scale irrigation project for several decades has been believed to fight rainfall dependence of farmers and conceived as pillars for sustainable food supply, diversified and high market value crop production and contribute in alleviating food shortage and poverty. Irrigation is also perceived as a means of increasing income of communities, creating job opportunity and generally, irrigation promotes the economic development of beneficiary communities. To this effect, Recognizing this and other important issues, the Irrigation Development Bureau of Oromia Regional State has given due attention to utilize existing resources such as water and land for effective and efficient irrigable land development activities so as to increase agricultural production and productivities of smallholder farmers in order to contribute to the basic food security strategies and objectives of the country/or region.

Accordingly, '*LEGE-GIMBI'* Small Scale Irrigation Development Project is a newly proposed irrigation project which found in Kimbibit Woreda of North Shoa Zone in Oromia Regional State at a distance of about 195km from Fitche (capital of the Zone) and 78km from Addis Ababa. This project area and surrounding areas are agrarian and commonly practicing rain-fed farming system that has always been played a central role in the socio-economic conditions of the communities of the areas. This dependency on rain-fed agricultural system has put more than 80% of the population at the mercy of meteorological variability. Agriculture in this Woreda and especially in the project areas is dominated by smallholding production systems for subsistence.

Thus, undertaking the socio-economic study for the newly proposed irrigation project (i.e. '*Lege-Gimbi' Small-Scale Irrigation Project*) is an indispensable for the fact that it enhances the study processes of assessing existing socio-economic conditions of the local communities in terms of population and demographic features of the study areas; economic bases and livelihoods of the local communities; as well as existing social institutions and services such as health, education, water supply, etc.; and infrastructural developments such as availability of access road networks including transport services, market and marketing services, rural saving and credit services. Besides these, the socio-economic challenges, constraints and other development gaps including communities' needs so as to undertake possible developmental interventions that could result in

improvements of the developments of rural economy in terms of increasing agricultural production and productivity; and income and income sources of the intended beneficiaries. This indicates that the well-being and civilization of local communities is closely associated with the ability to utilize and control over the available resources such as water and land for the most desirable and feasible development objectives.

Therefore, the existing trend of the project areas' agricultural production systems indicates that majority of the farming system of the study areas is strongly dependent on rain-fed based farming and rainfall variability impacts and costs the economy significantly. To this effect, unless the existing farming system and agricultural production is de-linked from the strong linkage to rainfall variability to both rain-fed and irrigation agriculture, the economy and livelihoods of the local communities will continue to be severely affected. Thus, it is an indispensable to introduce and develop modern irrigation agriculture so as to increase productivity of the land through effective and efficient utilization of the available water and labor including land resources for the production of marketable and high value crops such as vegetables, fruits, and other cash crops.

To this end, Lege-Gimbi Small-Scale Irrigation is the newly proposed irrigation project that expected to develop about 60ha of land and benefits more than 120 farmer households in the project area specifically known as Gimbi-Qerenssa Kebele of Kimbibit Woreda which found at about 10 - 15km from Shenno (center of the Woreda) and 93km from Addis Ababa. Mixed farming is the major farming system practiced by the farmer communities in and around the project areas; however, the production and productivity of both crops and livestock of these areas is not satisfactory due to various socio-economic factors such as use of traditional farming system, backward production techniques, lack of improved agricultural technologies and facilities, etc. The proposed irrigation project is expected to overcome and/or reduce these challenges and other community-based economic problems such as the ever increasing food insecurity problems of the areas through developing and facilitating the local communities with improved and modern irrigation technologies along with necessary technical supports and backstopping services.

Therefore, in order to increase agricultural production and productivity in line with the application of modern agricultural practices and use of improved agricultural technologies such as high yield seed varieties, fertilizers, pesticides, herbicides, etc, the livelihoods and economic

level of communities in the proposed irrigation project areas. Modern irrigation agriculture is one of the improved agricultural production technologies that increase production and productivity of different crops through efficient and effective utilization of the existing land and water resources. So that the primary objective of this project is to introduce and enhance the use of modern irrigation agricultural practices sustainably to its maximum benefits that enable the local farmers improve their living standards and income levels.

Accordingly, this development project was proposed with the objective to develop about 60ha of land area by diverting River 'Abey which found in 'Gimbi-Qerenssa' kebele of Kimbibit Woreda. located at a distance of about 10 - 15km from Shenno Town (center of the Woreda) and about 93km from Addis Ababa. This irrigation development project is expected to benefit about 120 households residing in 'Gimbi-Qerenssa' Kebele of Kimbibit Woreda.

1.2 Project Rationale

The rationale for this irrigation development project is to enhance household level food security and livelihood statuses of the beneficiary communities of in the command areas through increasing agricultural production and productivity using available resources such as water, land, etc. effectively and efficiently.

In general, among all the factors that hinder to ensure food security of the study areas, low productivity of agricultural production and backward farming systems which practiced by the local communities might be at the forefront. The improvement of crop production and productivity through using and applying cost-effective and efficient production systems which might be calling for the need of Irrigation Agricultural Technologies is a paramount. To this effect, Oromia Irrigation Development Authority has promoted and initiated the Development of Small-Scale Irrigation Agriculture at wide range and considered it as a major development strategic action plan in its economic development policies by supporting Small Scale Irrigation Agricultural Development activities.

1.3 Objectives

1.3.1 Major Objective

The major objective of this irrigation project is to reduce the ever increasing food insecurity problems of the intended beneficiaries focusing on the aims to the food self-sufficiency strategy

of the region and/or country at household level. Accordingly, this study was conducted to assess and analyze the socio-economic conditions of the communities along with the assessment of existing and potentials and constraints that might encounter the success of the proposed development project.

1.3.2 Specific Objectiveness

The specific objectives of this study include:

- Assessing and describing of the existing socio-economic conditions of the community in the proposed project areas;

- Assessing and analyzing of the major economic bases and livelihood status of the communities in the proposed project areas;

- Identification and analysis of major existing and potential development along with their constraints; and

- Assessment and analysis of existing communities' perceptions towards the proposed Irrigation Development Project in terms of the regional and/or country's development strategies along with possible expertise suggestions and recommendations.

2. STUDY METHODOLOGIES

2.1 Descriptions of the Study Areas

2.1.1 Location

'LEGE-GIMBI' Small-Scale Irrigation Project is the newly proposed development project which found in Gimbi-Qerenssa Kebele of Kimbibit Woreda at a distance of about 10 – 15 km, 78 km and 195 km from Shenno (center of the Woreda), Addis Ababa and Fiche Town (center of the Zone).respectively. The total land area of thr project Woreda (Kimbibit Woreda) is about 75,227ha; and structured into 29 rural and 2 urban kebeles; which totally has 31 administrative Kebeles. As far as the road accessibility condition of the study area is concerned, there was all-weather road constructed from Shenno Town to the project kebele.

In general, as per the socio-economic profile data of the study Woreda, astronomically the area (Kimbibit Woreda) extends from 9^0 12' - 9032'N Latitude and $39^0$4 '- $39^0$33' Longitude; and its altitude ranges from 2,400 – 2,800 meter above sea level. Even though the Woreda has no metrological station, the data obtained from neighboring metrological station reveals that the annual rainfall of the study Woreda is about 913 mm and average annual temperature ranges between 9^0c - 12c^0.

2.1.2 Climate

As per the data obtained from Agricultural Development Office of Kimbibit Woreda, the entire 3,020 meter above sea level; its annual rainfall varies from 800mm - 925mm; and annual average temperature ranges 18 - 20c^0.

2.2 Data Type and Sources of Data

In this study process, both quantitative and qualitative data were collected from different possible sources such as individual sample households, kebele agricultural and health experts, relevant officers, elder, religious persons, women and youth representatives; relevant report and/or plan documents of woreda offices like plan and economic development, health, education, water, agriculture, etc.

2.3 Data Collection Methods

Purposively sampling technique for the identification of the study kebele from which sample households selected were selected in the command areas of the project. Based on these criteria, although there were four kebeles in the project command areas, two of them were selected based on their existing socio-economic problems; which include: Gimbi-Qerenssa kebele; while the rest two kebeles which weren't currently included in the beneficiary lists would be reconsidered during the next expansion period of the project.

To this effect, Household Survey, Focus Group Discussions (FGDs), Key Informant Interviews (KIIs) and Community Consultations; as well as Literature Reviews and collecting of secondary data from relevant sector offices, institutions and other possible sources..

2.4 Data Quality Assurance

Data quality was examined from the beginning where data collection processes has started. A socio-economic study team has tried to give due attention to the study starting from preparation and development of questionnaires, checklists, formats, etc. as the most important prerequisites and procedures to undertake the study processes. To this end, being with concerned Woreda and Kebele Officials, appropriate enumerators were selected and oriented how to conduct the household survey data collection, format filling and sample household selection procedures. Following this, deploying the trained enumerators to the study kebele and/or site; then, close mentoring and supervision on the data collection and gathering processes was made. Finally, using double entry techniques and consistency checking methods of data encoding and entering procedures, all collected data and information were entered in the computer for analysis.

2.4 Data Processing and Analysis

Following collection of the data and necessary information, data organizing, coding, encoding, editing and refining have taken place. Accordingly, the survey data were entered into a computer using SPSS and Excel Spreadsheet software for analysis. To this effect, for the purpose of data analysis, descriptive methods such as frequencies, percentiles, ratios, etc. were applied. Then, analyzed data were interpreted and presented in different reporting forms such as narrations, graphs, tables and charts to display the results of the study findings.

3. RESULTS OF THE SOCIO-ECONOMIC ASSEMENTs

3.1 Population and Demography

3.1.1 Population Size and Density

As the data obtained from Plan and Economic Development Office of Kimbibit Woreda, the total human population is 99,064 (49,297 male and 49,767 female). The population data of the project Woreda and Kebeles were collected from both project Woreda and Kebeles. Thus, according to the data obtained from Plan and Economic Development Office of the project Woreda (Kimbibit Woreda), the total human population was estimated to be 99,064 (49,297 male and 49,767 female) people; of which, about 82% of the people were residing in rural areas and the rest 18% in urban areas of the Woreda. The total household of the Woreda was estimated to be about 16,510 which means, there were about 6 persons per household. Ethnically, majority of the population were Oromos and followed by Amhara people, (see Table 1 below).

Table 1: Total Population and Household Size of the Project Areas (2010 E.C.)

Project Area	Total Population			Household Size		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**
Kimbibit Woreda	49,297	49,767	99,064	14,694	1,816	16,510
Gimbi-Qerenssa Kebele	1,020	120	1,240	170	20	190

Source: Plan and Economic Development Office of Kimbibit Woreda (2010 E.c)

As it can easily be judged from the population data and land area of the study Woreda, its average population density was estimated to be 0.76 ha per person; (i.e. dividing the total Land area (ha) by total population of the study Woreda, one can get the average population density of that specific area). This means, the total population of the Woreda (99,064) was divided by the total land size of the Woreda (75,227ha); gives the average population density of the Woreda as 1.32 persons per ha of land.

3.1.2 Population Dynamics

Population structure, composition, growth rate, migration, etc. are important characteristics of population dynamic**s** that essentially influence the planning and designing of any development projects. Furthermore, they play great roles in the processes of monitoring and evaluation of the National and/or Regional Gross Domestic Products (GDPs). To this end, according to the population data obtained from the study areas, about 40% of the communities (15 – 64 years of

age) were categorized under economically active labor forces; whereas 60% in-active and/or dependent. Moreover, internal migration is very common in the areas; some community members came from other neighboring regions and/or zones such as Amara region/or zones for different purposes. Hence, due to the existence of such dynamic variables, the size and composition of the population in the study areas would be changed from time to time.

The other important factor is that the presence of low level of socio-economic development which associated with high fertility rate enhances rapid population growth of the areas. As per the population projection of Finance and Economic Development Bureau of Oromia Region (CSA, 2007), the population growth rate of Kimbibit Woreda was estimated to be 3% per annum; which indicates that such continuity of high population growth will bring high population pressure to the existing limited resources (land, water, etc.) of the areas. The presence of high population pressure on such limited resources like arable land results in an increase in the demand for the existing area of land which eventually become exhausted, depleted and degraded land. Hence, being in such socio-economic conditions, it would be impossible to produce adequate food supplies and provide sufficient social services for the rapidly growing population.

3.1.3 Population Projection

According to the population data from the study woreda, there were 99,064 (49,297 male and 49,767 female) people at the end of year 2010 E.C. Accordingly, supposing the 3% annual population growth rate of the Woreda and considering the 2010 population data as the base year, population projection for the next five years (2011 – 2015 E.C.) was estimated as shown in Table 2 below.

Table 2: Population Projection for Kimbibit Woreda (2011 – 2015 E.C)

Year	Male	Female	Total
2011	50,776	51,260	102,036
2012	52,299	52,798	105,097
2013	53,868	54,382	103,679
2014	55,484	56,013	111,497
	57,149	57,693	114,842

3.2 Basic Social Services and Institutions

3.2.1 Health Institutions and Services

The availability and accessibility of basic social services and institutions plays great roles in determining the socio-economic conditions of an area. To this effect, according to the data and information obtained from Health Office of Kimbibit Woreda, health sector has been given top priority in order to have and realize the presence of healthy communities for the economic development in the socio-economic development endeavors of the areas. Accordingly, the number and current status of existing health institutions, service level and coverage as well as, the number and qualification of health personnel working in different health institutions of the study areas were shown in Table 3 and 4 respectively below.

Table 3: Existing Health Institutions and Service Levels (Current Status) of Kimbibit Woreda

No	Health Institution	Number of Health Institutions	Current Status	
			Functional	Un-functional
1	Health Centers	4	√	-
2	Health Post	31	√	-
3	Health Clinic	4	√	-
4	Rural Drug Store	1	√	-
5	Others	3	√	-
	Total	**44**		

Source: Kimbibit Woreda Health Office; (2010 E.C.)

Table 4 : Number of Health Personnel and Extension Health Workers of Imbibe Woreda

No.	Health Personnel	Profession/or Education Status	Number
1	Nurses	Nursing (Diploma)	26
2	Health Officer	Degree (Health Officer)	8
3	Laboratory Technicians	Diploma (Lab. Technician)	3
5	Pharmacist	Degree (Pharmacy)	2
6	Community Health Workers	Certificate (Health Extension)	59
	Total		**98**

Source: Kimbibit Woreda Health Office; (2010 E.C.)

According to the data obtained from Health Office of the Woreda, the ten top diseases prevailing and challenging the communities of the study areas were described as shown in Table 5 below:

Table 5: Ten Top Diseases most prevailing to the Study Areas (2010)

No.	Descriptions	Cases	Remarks
1	AURI	2,386	
2	Acute febrile illness	1617	
3	NEUMONI	1694	
4	DIARHOEA	1,274	
5	Fighting /Trauma and injury/	1,034	
6	Disease of Bronchi pneumonia	900	
7	DYSPEPS	626	
8	INFECT	392	
9	HELME	377	
10	URINARY are the first ten top diseases found in the district.	392	

Source: Kimbibit Woreda Health Office (2010 E.C)

3.2.2 Education Institutions and Services

Education is one of the major components of an effort to expand the national resource base through investment in human capital. It is for this reason that governments of most countries of the world today consider education as a primary instrument for nation building. To this effect, in the past three to four decades major efforts have been taken in the education sector of developing countries to provide education to the majority of the population.

Therefore, a rapid population growth in Ethiopia has a tendency to be young people; which means, a high proportion of the people would be less than 15 years of age. According to the Ethiopian Central Statistics Agency data of 2007 G.C, about 48% of the population was children of age less than 15 years. If the existing fertility rate continues to be constant/or increases over the years, higher proportion of the population would be composed of children who require sufficient and quality education facilities and services.

Hence, according to the data obtained from Education office of the Woreda, in 2009 E.C, there were about 18,500 which means, only about 20% of the children whose age less than 15 years were attending and/or enrolled to school. As shown in the following Table 6, students to teachers ratio, on average, is about 19.25 students to one teacher; and the education coverage of the Woreda (2010 E.C), on average was 49%.

Table 6: **Number of Schools, Students and Teachers in Year 2010 E.C. by Level of School**

School Level	Number of Schools	Number of Students attended School by Sex			Number of Teachers by Sex		
		Male	**Female**	**Total**	**Male**	**Female**	**Total**
Kindergarten (KGs)	4	-					
1 – 4th Grade	19	5,222	4612	2834			
5 – 8th Grade	36	2,969	2740	5709			
9 – 10th Grade	3	1,056	1063	2119			
11 – 12th Grade	1	237	142	379			
Total	**63**	**9,484**	**8,557**	**11,041**	**329**	**245**	**574**

Source: Education Office of Kimbibit Woreda; (2010 E.C)

3.2.3 Availability and Accessibility of Water Supply

It is commonly accepted that access to water is a basic human right. The Dublin Conference in 1992 asserted that "... it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price"; (ICWE, 1992). Many societies believe that water has special cultural, religious and social values, which marks it off from other economic goods. In many cultures, goals other than economic efficiency influence the choice of water management institutions. Some religions (e.g., Islam) even prohibit water allocation by market forces. However, the focus on water's special status tends to obscure the fact that, in most societies, only a tiny fraction of water consumption is actually for drinking and preserving life. A large portion of urban water is used for convenience and comfort. In the arid western United States, per caput water withdrawal by households frequently exceeds 400 liters per day, about half of which is used to irrigate lawns and gardens. Most of the remainder is for flushing toilets, bathing and washing cars.

In general, the value of water to particular users depends crucially on its location, quality and timing. Its location determines its accessibility and cost; its quality affects whether it can be used at all, and at what treatment cost. The time when it is available governs its reliability and its relative value for power, irrigation, environmental or potable uses.

Many countries have reached a state where the quantity or quality of fresh water resources is imposing limits on present use of the resource and on economic development. Others are rapidly

approaching a similar critical situation. All these countries face the common problem that existing policies and strategies, and the institutions to implement them, are inadequate to meet water use needs and sustainable development. To this effect, aquifer management is often complicated by the aggregate impact of the actions of many individuals. Even though each individual may have a negligible impact when taken alone, the sum total can be of major importance. One tube-well has little effect on the total water supply, but thousands of tube-wells can quickly deplete an aquifer. Establishing effective water use management systems to control and regulate water abstraction by these many small-scale and scattered water users is indispensable.

With regards to the project areas, according to the data obtained from Water, Energy and Electricity Office of Kimbibit Woreda in year 1992 E.C, when the intervention of pure water supply development started, potable water supply coverage was 30%; but, at present time it has increased to about 81%. On the other hand, currently about 30,000 people (30% of the total population of the Woreda) were suffering from shortage of pure water supply services. As per the data from the same source, the average distance travelled and/or time taken to fetch a water from different sources was estimated to be 1.25 km/or about an hour..

To this effect, at present both groundwater and surface water resources such as deep and shallow wells, hand dug wells and spring water were the most important water supply sources of the project areas; (see Table 7 below).

Table 7: **Existing Water Supply Schemes and Services of Kimbibt Woreda by Scheme Type**

No.	Water Supply Scheme	Number of Schemes
1	Deep Wells	4
2	Shallow Wells	66
3	Hand Dug Wells	435
4	Springs	7
	Total	**512**

Source: Kimbibit Woreda Water, Energy and Electricity Development Office; (2010 E.C.)

3.2.4 Agricultural Input Supply and Credit Services

As per the data from Woreda Cooperative Office, there were 30 Service Cooperatives engaged in different economic activities of such as supplying agricultural seeds and fertilizers for member farmers. In addition to this, the cooperatives were also supplying consumable goods and services

such as sugar, edible oil, etc. for their members. In general, in these cooperative associations there were 20,164 members (10,082 male and 10,082 female members). Who were getting different services from these members.

Fertilizers, improved seeds, pesticides, and herbicides were the most important agricultural inputs used by majority of the farmers living in the project Woreda. To this effect, sustainable supply of these agricultural inputs to meet the continuously growing demands will be indispensable. Furthermore, the availability and accessibility of agricultural credit services in the areas is also the other important factor for the enhancement of the agricultural inputs utilization of the study areas.

Agriculture Cooperatives are the major contributing sector to the economy and communities' livelihoods and economic developments. As per the data obtained from the Cooperative Office of the Woreda, since 2009 E.C, there were 81 multi-purpose cooperatives in the Woreda; (see Figure 2 and 3 below).

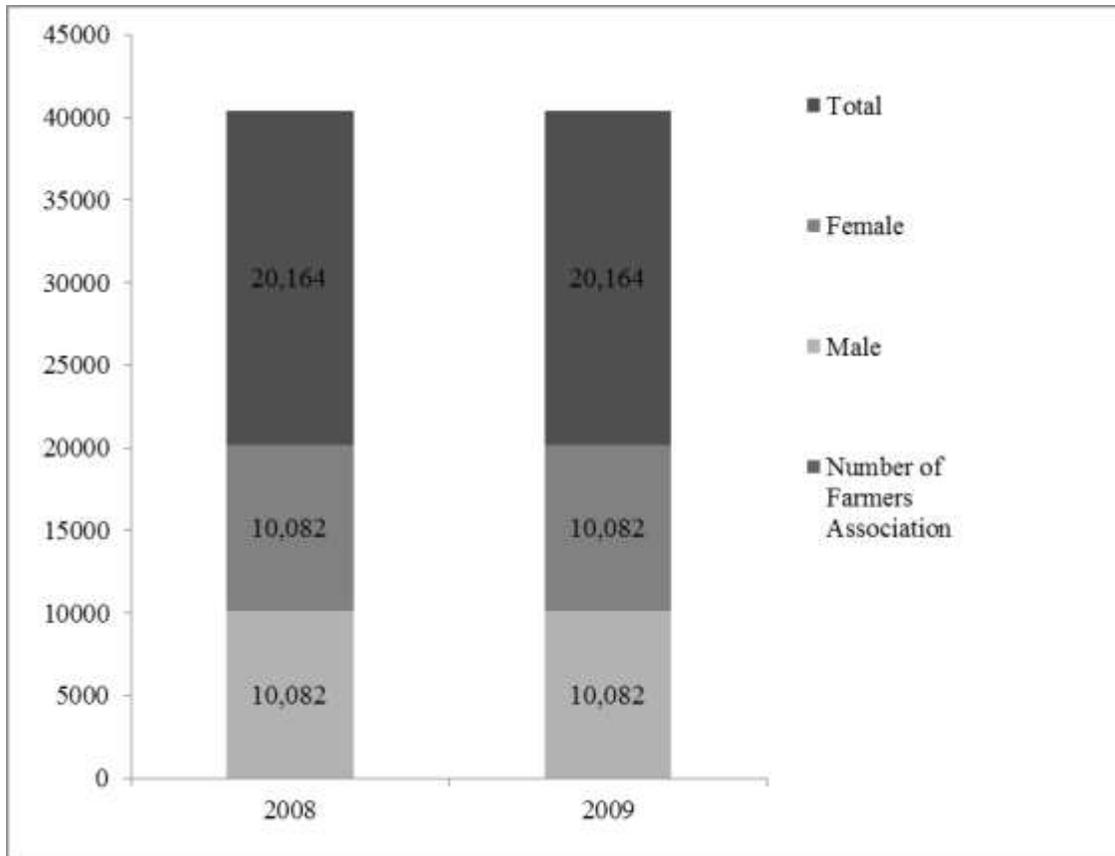**Figure 1***: Number of Cooperative Associations and Capital*

Figure 2: *Services Delivered by cooperatives and their capital in ETB   (2008E.C*
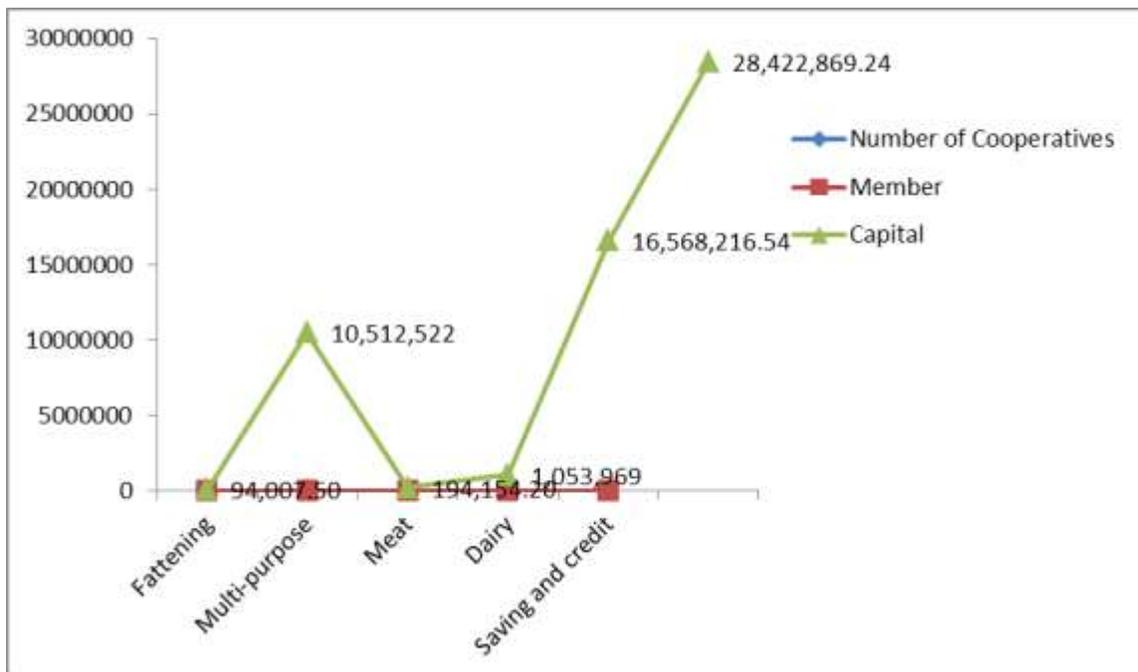
Figure 3: Services Delivered by Cooperatives and their Capital (2009E.C)
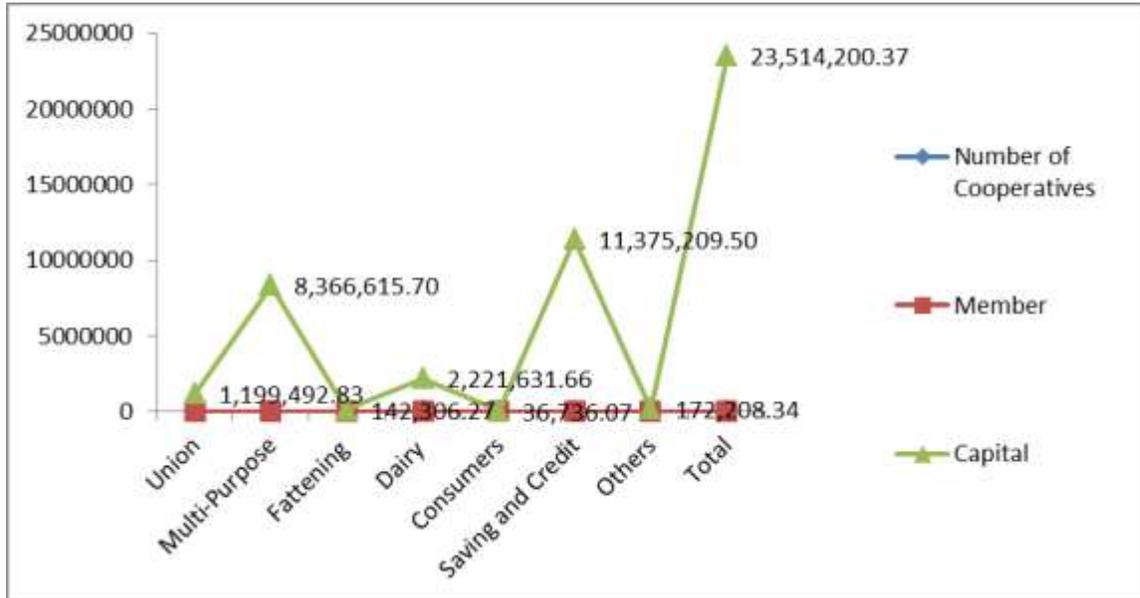
From the above Figure 1, 2 and 3 one can understand that in the Woreda, there were 81 Service Cooperatives with about 23,514,200.00 capitals.

As shown in the following Figure 4, fertilizers, improved seeds, pesticides and herbicides were the major agricultural inputs supplied and distributed to user farmers in year 2008 and 2009 E.C..

Figure 4: *Amounts of inputs distributed to farmers in the two years*
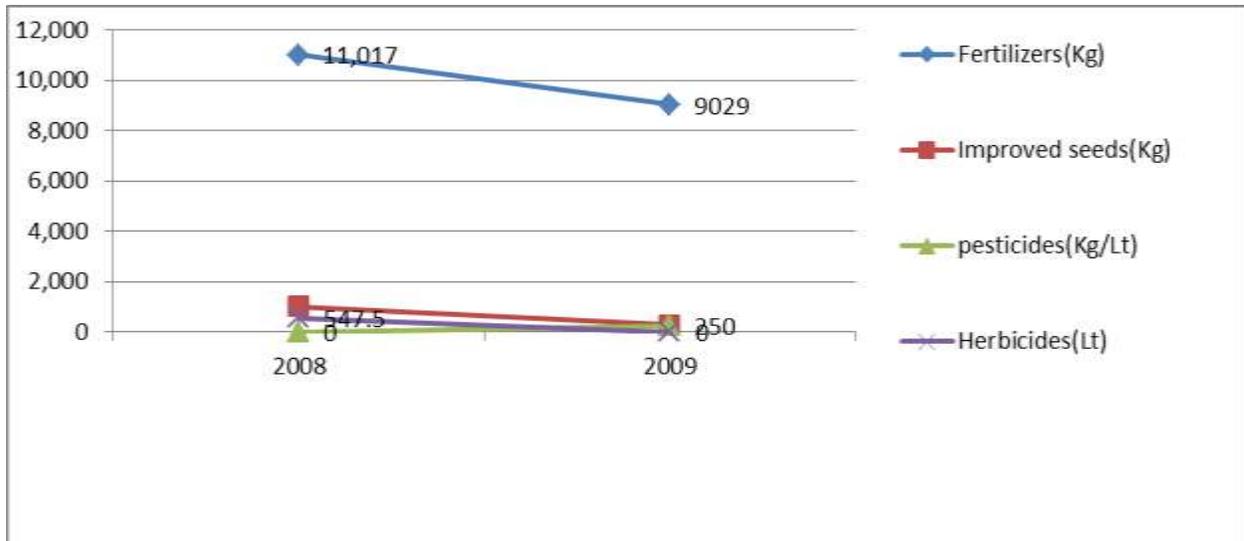
As shown in Table 8 below, the major crop pests of the Woreda such as African Earthworm, dusts, different birds, etc. were described in their order of importance as follows:

Table 8: Major Crop Pests and Diseases in Kimbibit Woreda

Types of Crop Pests and Diseases	Rank of Crop Pests and Diseases	
	2008 E.C	**2009 E.C**
African Worm	4	4
Dusts (Wagi)	1	1
Root-root	2	2
Birds	3	3
Apes	6	6
Monkeys	5	5

Source: Kimbibit Woreda Agricultural Development   Office.

According to the data from Office of Kimbibit Woreda, there were different rural financial institutions including Commercial Bank, Cooperative Bank of Oromia, International Bank of Oromia, African Village Financial Service, Liyu Saving and Credit Cooperative, Oromiya Saving and Credit Institution and Peace Micro Finance were the major financial institutions found in the Woreda.

Furthermore, in the crop production activities, pest and disease controlling practices play great roles in improving yields and productivity per area. To this effect, wheat, barley, beans and peas were the major crops grown in the Woreda; however, due to the presence of different crop pests and diseases production and productivity of these crops dramatically decreased. Due to this low production and productivity of agriculture, the Woreda has been supported by the Safety Net Program which implemented under the Government Food Security project/or program since long years ago.

3.2.5 Road Network a Accessibility and Communication

 In the woreda, there was all-weather road accessibility that passes through the center of the study Woreda to Kimbibit and Wuchale Woredas; and its total length was estimated to be about 110 km. In addition, there was one all-weather road that goes from Jida Woreda to Beraq-Aleltu Woreda and joins to the main asphalt road of Addis to Debre-Brehan Town (about 50 km). Furthermore, the Woreda has one automatic /digital/telephone station in Sheno Town and wireless telephone services in 29 rural kebeles and there is one Post Office giving services.

3.3 Major Economic Bases and Livelihoods of the Communities

3.3.1 Basic Economic Activities and Income Sources

Agricultural production is the main economic activity and major sources of income for the communities of the study areas. Hence, the economic base of the study areas is largely agriculture with some off-farm activities such as petty trading, daily labor, etc. Therefore, crop production and animal rearing were the two major economic activities practiced by majority of the communities for both consumption and income earning purposes. Moreover, trading, contractual works, daily labors and other off-farm economic activities such as hotel and tourism were assessed to be some of the income sources for the communities of the study areas.

3.3.2 Agricultural Production and Farming System

Agriculture is the major economic activities of the communities in the study areas and contributes great to the regional and/or national economic development. The secondary data obtained from Agricultural Development Office of the study area indicates that barley, wheat, horse beans, field peas, teff, lentils and oats were the major crops grown in the proposed project area. It was also assessed that majority of the farmers in the study areas were well experienced in using improved agricultural inputs such as high-yield seed varieties (mainly wheat and barley seeds) as well as fertilizers (Urea and NPS) for their crop production activities. The major crop pests such as army worms, locusts, bird apes, etc. and crop diseases such as-yellow rust, Leaf rust and African bollworms are some of the challenges for crop production in the areas. Moreover, livestock such as cattle, sheep, horses, donkeys and poultry were the major animals reared for both consumption and sale purposes.

Hence, as indicated in the above discussions, crop production and livestock rearing were the two major economic activities commonly practiced by the communities of the study areas. Although agriculture is the main stay for majority of the community members in the study areas, it is characterized by low production and productivity due to the reasons of using backward farming systems; lack of improved agricultural technologies; rapid population growth and pressure on the limitedly existing resources; etc. To this effect, majority of the communities living in the project areas majority of the communities were dependent on the Safety Net Project implemented by

Regional Food Security Program. This indicates that there were serious problems of food shortage for the majority of the communities of the Woreda.

In general, the agricultural production activities are assisted through existing agricultural extension services. The agricultural extension services were run by agricultural extension workers or development agents (DAs), and are intended to maximize production and productivity of the areas. According to the data from Office of Agricultural Development, currently there were 37 development agents working in different kebeles of the Woreda. As the data from Woreda Agricultural Development Office of the study area, there were 20 rural kebeles supported by the Safety Net Project implemented under the Food Security Program of the Region, which indicates that there was shortage food due to low agricultural production and productivity.

3.3.2.1 Crop Production

Different crops have different cropping calendars based on the amount and distribution of rainfall, agronomic practices, etc. Some crops such as teff, wheat and barley require frequent plowing and others such as beans, peas and linseeds require minimum tillage.

As depicted in the following figure 7 wheat, barley, beans, and peas are the major crops grown in the study Woreda. To this effect, in 2009/10 fiscal year, about 33,069 ha of land cropped and about 484,014 quintals of crops produced; similarly during the production year 2008/09, about 35,316 ha of land cropped and about 512,747 quintals of different grain crops produced.
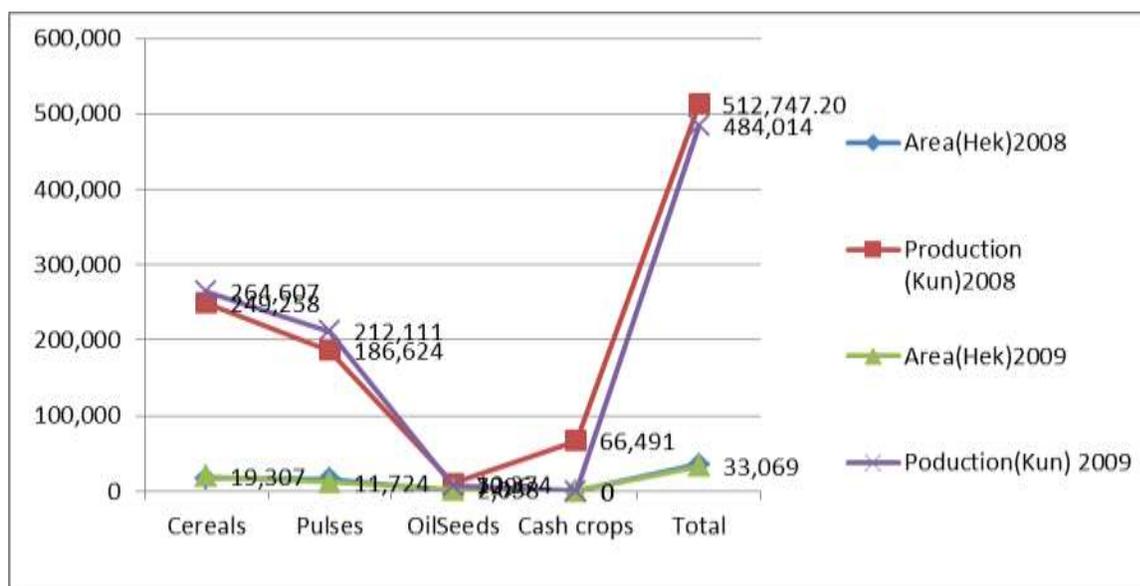
Figure 5*: Estimates of Area Under Cultivation and Production of Major Meher Crops for Peasant Holdings*

According to the information gathered from Kimbibit Woreda Agricultural Development Office, in addition to using chemical fertilizers majority of the farmers traditionally practiced land fallowing, addition of manure as well as crop rotation in order to maintain the fertility of the soil. Moreover, the same information reveals that farmers of the study areas have been used contour farming, addition of crop residues on farmlands, soil bund & check-dam constructions were also practiced as soil conservation mechanisms in the Woreda.

The data from the same source also indicates that crop pests such as armyworms, locusts, insects, birds, etc. were the most commonly challenging crop production activities of the study areas; as well as yellow rust, leaf rust and African bollworms were the major crop diseases of the study areas.

Furthermore, the data obtained from Agricultural Development Office of Kimbibit Woreda, there were 90 Agricultural Development Agents working in different rural kebeles of the Woreda; (see Table 9 below).

Table 9-: Trends of Development Agents (DAs) Working in Study Woreda by Level of Education

Year 2008 E.C						Year 2009 E.C					
Degree			Diploma			Degree			Diploma		
M	F	T	M	F	T	M	F	T	M	F	T
25	1	26	51	5	51	24	0	24	55	11	66

Source: Kimbibit Agricultural Development Office; (2011 E.C)

3.3.2.2 Livestock Rearing

Livestock rearing is the other agricultural activities practiced in the study areas. Table 8 below presents the type and number of livestock reared in Kimbibit Woreda.

Table 10: Number of Livestock reared in the Project Areas by type of animals (2010 E.C)

No	Livestock Type	Number of Heads	Proportion (%)
1	Cattle	131,768	32.84773
2	Sheep	177,813	44.32603
3	Goats	3,820	0.952267
4	Horses	14,287	3.561528
6	Mules	720	0.179485
7	Poultry	72,740	18.13296

		Total	401,148	100%

Source: Livestock Development Authority of Kimbibit Woreda (2010 E.C)

In general, livestock rearing has diverse functions in the production systems of the farming communities of the study areas. Food production in the form of meat, milk and milk products constitute a major group of livestock outputs. It is the sources of power, manure or dung and transport services. Hides and skins as well as wools and hairs of some animals are important sources of income and livelihoods of local farmers of the study areas.

Hence, the study areas have vast potentialities for livestock development and production, as the climate is favorable for animal husbandry. As can be seen from the above Table 8, the study Woreda is more suitable for rearing of sheep and cattle, which constitute about 44% of the total livestock population of the areas. Pasture grasses, oats, crop residues, urea treated crop residues and industrial by- products such as molasses, oilcakes, etc. were some of the major livestock feeds of the study areas. However, the presence of different animal diseases and low infrastructural development of the areas have hampered the reproductive performances of the livestock population.

3.4 Land-Use Pattern

Even though it was difficult to obtain real and accurate data on land-use pattern of the study areas, the study team has attempted to manipulate and summarize as presented and described in Table 7 shown below.

Table 11: Land-Use Pattern of Kimbibit Woreda

No.	Land-Use Pattern	Area of the Land in:-	
		hectare	Percent (%)
4	Arable Land (Cultivated and Cultivable Land)	41,375	54.99289
2	Grazing Land	24,233	32.20889
3	Forest Land	1,918	2.549278
4	Others	7,711	10.24895
	Total	**75,237**	**100**

Source: Land Administration Office of Kimbibit Woreda (2010 E.C.)

4. COMMUNITY PARTICIPATIONS

During the discussions held with the target beneficiaries and community representatives of the project in the presence of pertinent governmental bodies, farmers have expressed their strong

feelings and positive attitudes towards the intended irrigation development project. Though there were no strong community-based and managed irrigation projects in the study areas, the past experiences of farmers on using such modern irrigation projects might be a challenge unless there is regular technical supports and trainings for the intended beneficiaries.

However, the beneficiary farmers have expressed their interests and willingness to take part in implementation of the proposed development irrigation project including its management, operation and maintenance activities of the irrigation structures. As a result, the target beneficiaries have signed the petitions and willingly reflecting their commitments to participate at all stages of the project development activities in general and to cover 10% of the project cost through their labor participation and materials supporting during the construction phase. .

5. CHALLENGES POTENTIALS OF THE STUDY AREAS

5.1 Challenges

The climatic condition of the Woreda is too cold to practice agricultural diversifications so as to increase production and productivity of the areas; and the agricultural production and productivity issues of the areas were not yet get improvements due to the fact that there were not yet facilitated and supported by appropriate research and improved farm management practices. Hence, the livelihoods and level of income for the communities of the areas are under different challenges. As a result, local farmers were practicing traditional agricultural production activities. Concerning health sector, lack/or shortage of health professionals such as Lab. Technicians and X-ray Technicians were also the other development challenges of the study areas. In addition, the presence of poor infrastructures and road accessibility in majority of the rural areas of the Woreda were also assessed to be the drawbacks of study Woreda.

5.2 Potentialities

Previous experience of the Woreda shows that the area is very conducive and suitable for different types of agriculture productions especially in relation to the livestock production activities. Furthermore, the topographic land escape of the Woreda is flat and very easy for the development different infrastructures such as access road networks, telecommunications, electricity As well as, the areas have potentials of minerals such as rocks, high labor intensive;

access to the central market areas, etc. The Woreda is also rich in ground and river water potentials which is very suitable for implementation of modern irrigation.

5. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

Development plans and policies need up to date information and data. The data of poverty minimization sectors, health, education, agriculture, water mines and energy and rural roads authority have an immense contribution to the development of plans and policies of our country, Ethiopia. Changes have been seen in Kimbibit district regarding these sectors and other government, non-government and private organization since recent years. The Physical and Socio-Economic Profile of Kimbibit district can be used as an input for those who want to take part in development of our region, Oromiya and the district's Finance and Economic Development Office is standing by to make suitable environment data accessibility and further investigation

5.2 Recommendations

As attempted to describe in the existing socio-economic assessments of this study, the implementation of the proposed irrigation project will bring several economic and social benefits to the local population and contribute for the improvement of their socio-economic status and living standards.

To minimize the potential and possible adverse effects of the proposed development project so as to enhance its positive impacts, it is recommended that the proposed preventing or mitigating measures are included in the project plan and implemented at the right time. In particular the following issues should be given due consideration in order to help the sustainability of the project and ensure protection of the environment.

- Efficient water management and equitable water distribution should be established by establishing a strong Water Users Association that will take care of the duty; and the

- Efficient water management is critically important as it will minimize many of the potential adverse environmental effects such as threats of water related diseases (malaria), erosion, impacts on downstream water uses, etc.

- To overcome public health impacts mainly related to malaria and water-borne diseases provision of environmental health and hygiene education for the farmers are essential.

- To protect soil erosion due to flooding, the farmers should have to use appropriate farm techniques such as contour bunds, soil bunds, rehabilitation of gullies, conservation based Agriculture (grass strips, agro-forestry, plantation on soil conservation structures).

- Before/during implementation of any development activities in the area there should be orientation about rational utilization of resources and conservation method should be introduced to the community; and

- Schemes that are well-designed, adequately funded, properly maintained, well managed, socially acceptable and responsibly used can be perfectly sustainable