



WOLKITE UNIVERSITY

COLLAGE OF SOCIAL SCIENCE AND HUMANITIES

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

THE EFFECT OF RAPID POPULATION GROWTH ON AGRICULTURAL LAND  
UTILIZATION IN CASE OF ABESHGE WOREDA, WOLKITE, SNNP, ETHIOPIA.

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## DECLARATION

This paper is a presentation of our original research work. Whenever the contribution of others are involved, every effort is made to indicate this clearly, with due reference to the literature; information derived from the published or unpublished work of others has been acknowledge in the text and a list of reference is given.

And we declare that this paper has not been submitted in any form for another degree or diploma at any university or other institutions of tertiary education.

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## **ABSTRACT**

*Rapid population growth is one of the main drivers of environmental degradation and food insecurity in many developing countries. This study examines the effect of rapid population growth on the agricultural land utilization in the case of Necha kulit, Dargie, Borer, and Walga kebles. The researchers collected the data and used 94 respondents from the total population of the study area. By using simple random sampling techniques. The data were collected in both qualitative and quantitative ways. The data was organized and analyzed by using statically like tables and graph. The study employs descriptive statistics and regression analysis to explore the relationship between rapid population growth and agricultural land use indicators, such as land area, crop production, yield, and intensity. The results show that rapid population growth has a negative impact on agricultural land utilization, as it leads to a decline in land area per capital, crop production per capital, and yield per hectare, and an increase in land intensity and pressure. The study recommends that policies should be implemented to control population growth, promote sustainable land management practices, and enhance agricultural productivity and food security. The study recommends certain solution such as initiating the societies and infesting the Kebele both government and non-government institution.*

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## ABBREVIATION

AESAHI.....	Agriculture And Environmental Science Academy, Haridwar, India
DCs.....	Developed Countries
FAOUNR.....	Food and Agriculture Organization of the United Nations Rome
FDR.....	Federal Democratic Republic
EPGRD.....	Ethiopian Population Growth Rate Data
GDP.....	Growth Domestic Product
LDC.....	Less Developed Countries
PLEC.....	People, Land Management, and Environmental Change
SNNPR.....	Southern Nations, Nationalities, and Peoples Region
UNFPA.....	United Nations Population Fund
WARDO.....	Woreda of Agricultural and Rural Development Office
WIB.....	Woreda Information Bureau

# CHAPTER ONE

## 1. INTRODUCTION

### 1.1. Background of the study

Ethiopia is one of the least developed countries in Sub-Saharan Africa with nearly 100 million people, of which 80.5% of the rural population is relied on agriculture for their livelihoods. In the country, one-third of rural households cannot produce adequate food to meet their subsistence needs as they cultivate less than half hectares of land per capita (Bekele S, 2006).

Ethiopia is vulnerable to the twin threats of natural resource degradation and poverty owing to high population growth, dependent on rain fed agriculture, and negative impacts of climate changes (Liniger, 2011).

Although anthropogenic and natural shocks resulted in adverse effects on food production, the government has made considerable efforts to produce adequate food for the growing population. As population rises, demand for food, energy and income increases (Herrero, M. 2008).

Increasing population coupled with land degradation. Increasing population coupled with land degradation aggravates challenges of crop production. Overpopulation resulted in land resource scarcity, fragmentation of farm plots, and ecological degradation such as increasing emissions, soil erosion, deforestation, and the overuse of natural resources. Producing adequate food for a rapidly growing population is a prime challenge for development. (Getachew A, 2008).

Many regions in Sub Saharan Africa are characterized by declining soil fertility including the breakdown of soil structure, a reduction in organic matter and the nutrient content. The cultivation of cereals on the same land without addition of organic or inorganic fertilizers leads to low yields, which in turn lead to inability to afford the purchase of inputs. Fertilizers can increase yields by recapitalizing soil nutrient. Their use, in conjunction with improved seed, can lead to significant productivity growth (FAOUNR, 2015).

Population growth and economic growth are highly interrelated since they affect each other. Their relation has attracted the attention of economists since economics was established as self-discipline. For example, Adam Smith, called the father of economics, wrote that “the annual labor of every nation is the fund which originally supplies it with all necessaries and conveniences of life.” (Jhagan, 2002: 377).

Nevertheless, the conditions prevailing in the Developing Countries, usually called Less Developed Countries (LDCs), are quite different from these DCs economies. Their economies are poor in performance, scarce in capital but have abundant labor (Jhagan, 2002).

Africa countries population growth is a high in it, so it is obvious that that farm land per house of previous years became a farm land for more farmers. So expansion of farm lands due to population growth may result in deforestation and soil erosion. To overcome these problem different modes must be adapted to improved productivity on the existing farm land. An optimal control model was developed to refined alternative farming practices with this setting namely, whether farmers would choice continued land expansion, if they would adopt crop intensive practices (Sander, 2004).

Now a day Ethiopia, the second most populous country in Sub-Saharan Africa had a population size of 123,379,924 million in 2022 and a growth rate of about 2.57 percent (EPGRD, 2023).

Overpopulation resulted in land resource scarcity, fragmentation of farm plots, and ecological degradation such as increasing emissions, soil erosion, deforestation, and the overuse of natural resources. Producing adequate food for a rapidly growing population is a prime challenge for development (Sahlu H, 2004). So land is the most important source for food (agriculture), building materials and domestic energy forests.

Ethiopia is one of the poorest countries in the world where its economy is heavily dependent on agriculture (Baye, 2017) and the natural resources for subsistence (Nune *et al.* 2013; Zegeye, 2018). Agriculture is known to be a resource-intensive enterprise (Cassman *et al.* 2003). Agricultural extensification to produce more food for the rapidly growing population is causing unprecedented changes in the near-natural environments like land, forest, water, grassland, and wildlife (Tolessa *et al.* 2019). So as to use the available resources optimally and achieve sustainability, it is quite essential to have the information on existing resource use problems, management trends, and its state of occurrence (Ketema *et al.* 2020). In doing, proper resource conservation and management options can be determined, and sustainable resource use planning easily is framed (Berkes, 2010).

## 1.2. Statement of the problem

In the world agriculture has a long history with human being. This was because in order to survive peoples must have something to eat. So, among the agriculture activities farming is the most crucial means of obtaining food and income of the people. There is an interesting relationship between rate of population growth and land availability. Under various assumptions, population growth operates in many ways to relate betterment of man's material condition. One of them is, it increases the pressure number up on a nations land resources and it tends to intensify this pressure through time by accelerating the rate at which the sort of exhausting and non- replaceable material resources are used up and the cost of their use increased (chrispin, jane and jegede, 2000).

The population which is growing at a very rapid rate, of about 3 percent annually, has been clearing forests and vegetation to satisfy its increasing requirements of food and energy. Generally, population growth in Ethiopia will cause over exploitation of the renewable and non-renewable resource and this become the result of unsustainable developments of country. The forest coverage is also decreasing at alarming rate due to population growth, which need more wood for fuel , construction, furniture, and also trees cut-down either for settlement or to expand land for cultivation. This distraction of forest becomes the cause for the removal of various biodiversity (Allen *et al*, 2006).

Earlier studies like (Sahlu H. 2004), conducted the research on the impact of rapid population growth on agricultural land in case of Abashge Woreda where the population density is high in this Woreda. For instance the linkages observed between population variables and socioeconomic and environmental trends. The population growth at very rapid rate follows clearing, and Vegetation, land fragmentation and degradation to safety for increasing the requirement of food and energy. However this type of research has not conducted in SNNP Gurage zone, Abashge Woreda like the above mentioned.

Like the above problem Abashge Woreda is found in SNNP Gurage Zone by which it is contains a number of population densities Living on the area compared to the size of the land .According to the Woreda agricultural office in Abashge Woreda there is densely population and that results the lack of agricultural land for individual farmers. And in this Woreda there is 61,069 hectares; within this total area of the land, total populations of our studies area are 13,861 among four *kebeles*. For this reason the population who live in this Woreda are

suffered to land scarcity and shortage of infrastructure such as agricultural land , forest land, grazing land, availability of water , road and communication system, so that people migrate from one *kebele* to other *kebele* like Walga to Borer. This also cause for forest destruction and land fragmentation and leads to Decrease Soil fertility in the destination Areas and Cause to the problem for production especially on land use pattern. WARDO, (2023).

So the above problem motivates the researchers to conduct and analysis the studies. Therefore in this study the researchers conducted a research to fill the gap that is stated in the above statement and to emphasis the effect of rapid population growth in agricultural land utilization in the study area.

The primary goal of these studies is to bring the possible solution like aware community to practice family planning, effectively use of existed land use like practice modern farming and Soil water conservation practice and resource recycling.

### **1.3. Objective of the study**

#### **1.3.1. General objective of the study**

The general objective of the study is to assess the effect of rapid population growth on agricultural land utilization in the study area.

#### **1.3.2. Specific objective of the study**

In this research the researcher specially attempts to:

- ❖ Assess the type of economic activities practiced in Abeshge Woreda.
- ❖ To identify factors that contributes for rapid population growth in the study area.
- ❖ To portray the impact of rapid population growth on the agricultural land utilization in Abeshge Woreda.

### **1.4. Research questions**

In attempts to investigate possible solution to the problem raised, the researcher tried to answer the following questions.

1. What types of economic activities practiced in Abeshge Woreda?
2. What are the factors that contribute for rapid population growth in the study area?
3. What are the impacts of rapid population growth on agricultural land utilization of the study of area?

## **1.5. Significance of the study**

The study was significant for initiating other researchers to make further study on the topic and researcher gives one copy of the research to agricultural office the Woreda, the people may get information about appropriate utilization of the resources through extension society.

Based on the study the researches of this paper would contribute the following significances.

- ❖ It gives information about impacts of the population growth on the agricultural land in the study area.
- ❖ It helps to for other researchers who would be interested on this issue.
- ❖ To support Policy makers.
- ❖ To create awareness and initiating for local community.

## **1.6. Delimitation of the study**

The study was conducted in the Southern Nations, Nationalities, and Peoples Region (SNNPR), in Gurage Zone. Moreover, the study was only deal with impact of rapid population growth on the agricultural land utilization in case of Abeshge Woreda. It was also assess changes and continuity in the effect of rapid population growth on the agriculture land utilization among the Gurage Zone of Abeshge Woreda. Therefore, this study were mainly confined on assessing or differentiate the most prevailing factors that affect agriculture land utilization among Gurage Zone of Abeshge Woreda and the impact of the population growth on the agriculture land utilization among Gurage Zone.

## **1.7. Limitation of the study.**

Any research activity has its own limitations even though the short coming vary from one another. Similarly, the following points appear to be limitations of this paper. Owing to lack of adequate experience, shortage of financial, recent literatures and time under taking of this study on wider scale is become impossible. Because of unavailability of studies done before an effect of rapid population growth or any aspects of population in this Woreda data on population growth distribution and density are not readily available. The informants were also the problem not willing to give accurate and enough information.

## 1.8. Organization of the paper

This paper was organized to five chapters. The first chapter includes introduction, objective of the study, scope, significance of the study statement of the problem the methodology employed, limitation of the study and definition of concept of terms. The second chapter review of literature related to the topic. The third chapter emphasis on the research method and methodology of the study area. Chapter four contains analyses and presentation of the data. Finally chapter five focus on conclusion and recommendation of the paper.

## 1.9. Operational definitions of terms

**Rapid population growth:** refers to the aggressive increase of population brought about by increased birth rates and decreased death rates. It is also caused by industrialization and the availability of food, water, energy, and reliable medical care. Rapid population growth can result in economic consequences by limiting the growth rate of gross national product and exerting a lot of pressure on agricultural production.

**Agricultural land:** the area of the land utilized for farming including available land improved and unimproved grass land and others.

**Agricultural population:** The FAO defines the agricultural population as all persons depending for their livelihood on agriculture, hunting, fishing and forestry. It comprises all persons economically active in agriculture as well as their non-working dependents. This population is not necessarily an exclusively rural population.

**Utilization:** is the primary technique where in success and performance efficiency are determined. This is especially in the case with tools and equipment. The term is also used to describe the act of using materials, products and services to make things function, extend the lifespan of machinery, improve durability of materials and other things that can lead to better performance and less risk of damage.

**Population:** The group of human being living at definite geographical areas.

**Deforestation:** the removal and clearing of forest land to make it convenient for agricultural activity.

**Population density:** is the relationship between people and natural resources in a given area where the number of the farmer is greater than the later.

**Land degradation:** is a process in which the value of the biophysical environment is affected by a combination of human- induced processes acting upon the land. It is viewed as any change or disturbance to the land perceived to be deleterious or undesirable.

## CHAPTER TWO

### 2. REVIEW OF A RELATED LITERATURE

In this part of the paper, various important information which have sort of relation to the topic under investigation would be discussed. The emphasis is especially given the impact of population growth in different regions and their effects on natural resources on a given area.

#### **2.1. Correlates of population and agriculture: empirical evidences in Ethiopia**

Agriculture is the mainstay of Ethiopian economy. The interaction between population and agriculture is complex. Intense debates and widespread discourse have been continued over several decades on population growth against agriculture development. For the past decades, agricultural growth has been achieved partly through an expansion of farmlands.(Alemayehu, 2008).

Also reported that crop production has increased due to area expansion although little has been contributed by agricultural inputs. Agricultural intensification and extensification are the two major strategies to raise agricultural output in general and crop yields in particular. As farmland increases, pressure on natural vegetation and communal grazing land also increases.(Wuletaw,2018).

Thus, it becomes logical that when population grows at an unlimited rate, it obviously puts pressure on our marginally available 12% of use-able agricultural land, the supply of which is also shrinking day by day. An extreme growth of population also squeezes the per capita availability of cultivable land. Based on evidence, it is calculated that at present, we require 0.5 hectare per capital crop land as a minimal requirement to sustain a proper diet and nutrition. But due to continuous population growth and also rapid land degradation, the availability of per capita land is reduced to an extreme point day by day (Leach, 2012).

#### **2.2. Population Growth and Environmental Degradation**

The environmental degradation is the deterioration of the environment through depletion of resources which includes all the biotic and abiotic element that form our surrounding that is air, water, soil, pant animals, and all other living and non-living element of the planet of earth.

The major factor of environmental degradation is human (modern urbanization, industrialization, overpopulation growth, deforestation, etc.) and natural (flood, typhoons, droughts, rising temperatures, fires, etc. (AESAHA, 2020).

Among the Contributory factors in the deterioration of the environmental conditions in the African continent, the recurring natural disasters such as drought and political instability are worth mentioning. Africa's Population growth combined with unsustainable consumption patterns has a critical influence on the life-supporting capacity of the region. In view of these interrelationships, the 1992 International Conference on Environment and Development held in Rio de Janeiro, Brazil known as the Earth Summit produced a report (UN, 2017) in which it identified demographic processes and population pressures as one of environmental priorities and warranted states to reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies. The conference further elaborated to carry out the objectives and activities according to the different situations and priorities of countries and regions in the light of changing needs and circumstances giving special priority to the least developed and those environmentally vulnerable.

In developing countries, land degradation is one of the greatest threats which strike at the basic resource of the population. The degradation process is so acute in Africa that millions of people have fallen into poverty and have suffered famine and death. The situation in Ethiopia is not different. In Ethiopia, massive environmental degradation has occurred during the last few decades due to natural factors, unwise use of its natural resources, unsound ecological practices and population pressure. The major factor accelerating the environmental degradation rate is man's abusive actions such as the removal of the natural vegetation cover through deforestation, over-grazing and inappropriate agricultural practices. The population which is growing at a very rapid rate of about 3 percent annually has been clearing forests and vegetation at an alarming rate in order to meet its increasing requirements of food, fiber and energy. The forest cover which constituted 40 percent of the land some 100 years ago has gone down to less than 4 percent at present (EVDSA, 1990). Widespread deforestation in the highlands started around 2500 BC (Ethiopia-UNCED National Report, 2000).

The Ethiopian highlands consisting of around 45 percent of the total area of the country contain four-fifths of the human and two-thirds of the livestock populations. The area receives more than 90 percent of the total rainfall which makes it favorable for rain fed

agriculture and has thus been settled for more than 5000 years (Ethiopia-UNCED National Report, 2000).

Large increase in the number of human and livestock population resulted in scarcity of land and expansion of agriculture into traditional grazing areas and marginal lands. In many whereas of the northern highlands of Ethiopia, more than 90 percent of the land is used for agricultural purposes on a permanent basis and fallowing as a system of farming has completely disappeared indicating that there is serious land shortage. (Markos Ezra, 2004).

According to this study, in most areas, the average cultivated area per household is slightly more than one half of a hectare. Marginal lands are less able to retain water and are subject to wind and water erosion. Land degradation problem is affecting considerable parts of Ethiopia, especially the highlands, mainly due to water erosion. Soil erosion is the main feature of land resource depletion leading to desertification which leads to reduced agricultural production and shortage of food. Overall, the effect of population pressure and resulting environmental degradation has driven the country into widespread food insecurity, drought and famine for the last three decades. The main activities that are responsible for environmental degradation in Ethiopia include the removal of vegetation cover and over cultivation as a result of the rapidly increasing population requirements for crop production and fuel wood. In addition, overgrazing and high livestock density resulted in the deterioration of rangeland resources. (FAO,2012).

### **2.3. Land use change**

Fulfilling the resource requirement of growing population ultimately requires some form of land use change provide for the expansion of crop production through forest clearing, to intensify production on already cultivated land or to develop the infrastructure such as construction of roads, schools, hotels necessary to support increasing human number (De – Paul, 2004).

Human induced changes in land use often result in habitat fragmentation and loss, the primary causes of species decline. Infact, if current rate of forest clearing continue one quarter of all species on earth could be lost within the next 50 years. Generally, as population growth rapidly the land use system and soil degradation problems also became as sever problem. ( Paul Ward English“s, 2003).

## **2.4. Deforestation**

Forest resources in Ethiopia are being depleted at rates beyond the rates of natural recovery due to population concentration, the follow period are and the forest and the forest have no chance to regenerate on cleared areas. Forest have been cleared mainly for fire wood and construction of house, which could be for own consumption and/or market. Estimates of deforestation, which mainly for expansion of rain fed agriculture, vary from 80,000 to 200,000 hectares per annum (FDR, 2005).

Deforestation of the forest resources caused shortage of fuel wood, which is the main source of energy in rural Ethiopia. The country know almost denude of its forests except for certain area in western, southwestern and southern Ethiopia (Larman, 1992) and because of the increase in population, there will be a major reduction in agricultural land available per capital in the developing regions of Asia, Africa and Latin America.

Thus combination of reduced forest resources and agricultural resources per capital are bound to pose major problems for sustainability for feeding the increasing population as well as for maintaining healthy living conditions (FAD, 2006).

In addition to the above factors, which can be more or less quantified, there will be other effects of deforestation in the overall global environment. This will be reduced water availability, possibility of climatic impacts reduction in natural carbon fixation of the forest ecosystem, occurrences of flood and disasters, serous ecosystem, occurrences“ occurrences of flood and disasters, serious threats to biodiversity and so on because of these complex of environmental effects, it is likely to pose a challenge for overall global ecosystem, which is so vital for human survival and sustenance (Allen.*et al*, 2002).

## **2.5. Soil erosion and Land degradation**

Soil degradation is the loss of the intrinsic physical, chemical, and/or biological qualities of soil either by natural or anthropic processes, which result in the diminution or annihilation of important ecosystem functions. The main causes of soil degradation and, consequently, the main threats to its ecological functions are erosion, organic matter decline, loss of biodiversity, compaction, sealing, point-source and diffused contamination, pollution, and salinization (Montanarella, 2007).

Land degradation due to soil erosion and nutrients deletion constitutes a major constraint to increase agricultural production in Ethiopia. Although data on extent of the problem are quite thin (Kuru, 2008).

It is learned from existing information that land degradation is a serious environmental and economic problem in the country. For instance the Ethiopia soil science society (EESS, 1998) indicates a total of 1.5 billion tons of soil loss per year in the country. The same source further stated that it is only around 20 percent of the high lands which is free from the hazards of soil erosion at present. (FAO, 2000).

Agricultural areas are also suffering higher rates of soil fertility decline. Assessment of soil nutrients depletion in SSA indicated that Ethiopia is among the countries with the highest rate of nutrient depletion (Stoorvogel *et al*, 1993). Fertility decline has caused annual loss in grain production of 40,000 tones (Azene, 2001).

The purchase of such input, on the other hand, raised the country's foreign expenditure, which is a negative implication on the current economic situation of the country. The unavailability of arable land and the concentration of people on limited area have aggravated the soil erosion of an area either through water or wind erosion. In general making good use of locally available knowledge on participatory grounds, could be a potential for the development of effective and acceptable conservation technologies (Plane, David A. and Peter A, Regers, 2005).

## **2.6. Climatic change**

Climate change affects poor people in particular, because of their weak adaptive capacities. Development projects of all kinds can strengthen or weaken those capacities. At the same time, they can influence greenhouse gas emissions, the main cause of climate change, positively or negatively. It is therefore important to evaluate the impacts of development projects on adaptive capacities and climate change mitigation, in order to find measures to improve projects in the face of climate change. (Marius, 2009)

Recent years have been among the warmest on record. Researchers suggest that temperature has been influenced by growing concentration of greenhouse gases, which absorb solar radiation and warm the atmosphere. Research also suggests that many changes in atmospheric gas are human induced. The demographic influence appears primary in three

areas. First, contribution related to industrial production and energy consumption lead to carbon dioxide emission from fossil fuel use; second land use changes, such as deforestation affect the exchange of carbon dioxide between the each and the atmosphere; third, some agricultural process such as paddy-rice cultivation greenhouse gas releases in to the atmosphere, especially methane. (PLEC, 2014).

According to an estimated population growth will account for 35% of the global increase in carbon dioxide emission between 1985 and 2000 and 48% of the increase in developing nations during that period as such, both attention to demographic issue and the development of suitable production and consumption process are central responses to the process involved in global warming. Both population size and consumption influence environmental changes and are among the many factors that need to be incorporated into realistic policy debate and persecutions. (Cunningham, 2001).

## **2.7. Population Growth and Fuel wood consumption**

The fuel wood consumption at large scale is related to the severe environmental problems including deforestation, land degradation, loss of biodiversity, climate change and adverse health effects due to the indoor air pollution. Firewood accounts for over 54 % of all global harvests per annum which results in the huge amount of forest loss (Williams and Shackleton, 2002).

Until nowadays Ethiopia is still heavily dependent on traditional fuels (e.g. fuel wood, charcoal, crop residues, dung etc.) for domestic energy consumption, especially for cooking. Even in urban areas, cost for electricity and kerosene is unaffordable for many households (Kebede,2002). In rural areas, most households are using fuel wood and charcoal excessively and will turn to more inferior fuels (such as crop residues and dung) when shortage of fuel wood in many areas (Macht,2007).

It is commonly believed that heavy reliance of the households on biomass will bring negative environmental, economic and health impacts. As fuel wood and related wood products “must be collected from the available resource pool, such high dependency is likely to have fundamentally negative impact on the availability of forest resources” (Abebe,2012). In addition, use of crop residues and animal dung when lacking fuel wood deprives the land of essential nutrients, resulting in loss of soil fertility and agricultural output (Gebreegziabher,

2007). For instance, unsustainable use of fuel wood, increasing deforestation and soil erosion are major environmental and economic problems facing African countries such as Ethiopia (Nebiyu,2009).

Traditional biomass (wood, charcoal, dung) in household's accounts for roughly 90% of total primary energy use in Ethiopia (Mekonnen and Kohlin, 2009).The imbalance between yield and extraction of wood has caused severe deforestation which further leads to fuelwood scarcity in a global scale (Arnold, 2003). In Ethiopia rural households have upgraded their biomass use, from low-quality residues and dung to wood and charcoal (Damte, 2012). In urban area, for example, the use of biomass fuel is about 8.2 percent of the total biomass fuel consumption of the country (Dawit, 2012).

## **2.8. Population Migration**

Population migration is one effect of population growth in a given area. There are various reasons for population migration, sociocultural, political and economic factors. Migration propensities vary by age. For example the global population has both the largest cohort of young people (age 24 and under) and the largest proportion of elderly in history. Young people are more likely than their older counter part to migrate primary as they leave the parent home in search for new opportunities. As, a result, given the relatively larger generation, we might anticipate increasing levels of migration and urbanization, and therefore intensified urban environmental concerns (Cox, Peter R, 2006)

## CHAPTER THREE

### 3. RESEARCH METHODOLOGY

#### 3.1. Background of the study area

This chapter would focus on physical characteristics, socio-economic condition and demographic factor of Abeshge Woreda.

##### 3.1.1. Relative Location

Abeshge Woreda is one of the 13 Woredas in Gurage Zone the southern nations, nationalities and peoples region of Ethiopia. Abeshge is one of the Woredas in the Southern Nations, Nationalities, and Peoples' Region of Ethiopia. Part of the Gurage Zone, Abeshge is bordered on the south by the Wabe River which separates it from Cheha, on the west and north by the Oromia Region, and on the east by Kebena. It was part of former Goro Woreda. This study was conducted in four rural *kebeles* in Abeshge Woreda which is known for its effect of rapid population growth on the agricultural land utilization.

##### 3.1.2. Absolute location

The absolute location of Abeshge Woreda lies at a latitude of 08°19'N 37°28' E and longitude of 07°56'N 37°37' E, respectively, at 1500–1800 masl.

### 3.1.3. Area of the land

Abeshge Woreda has a total area about 61,069 hectares.

Figure 3.1. Map of the study area

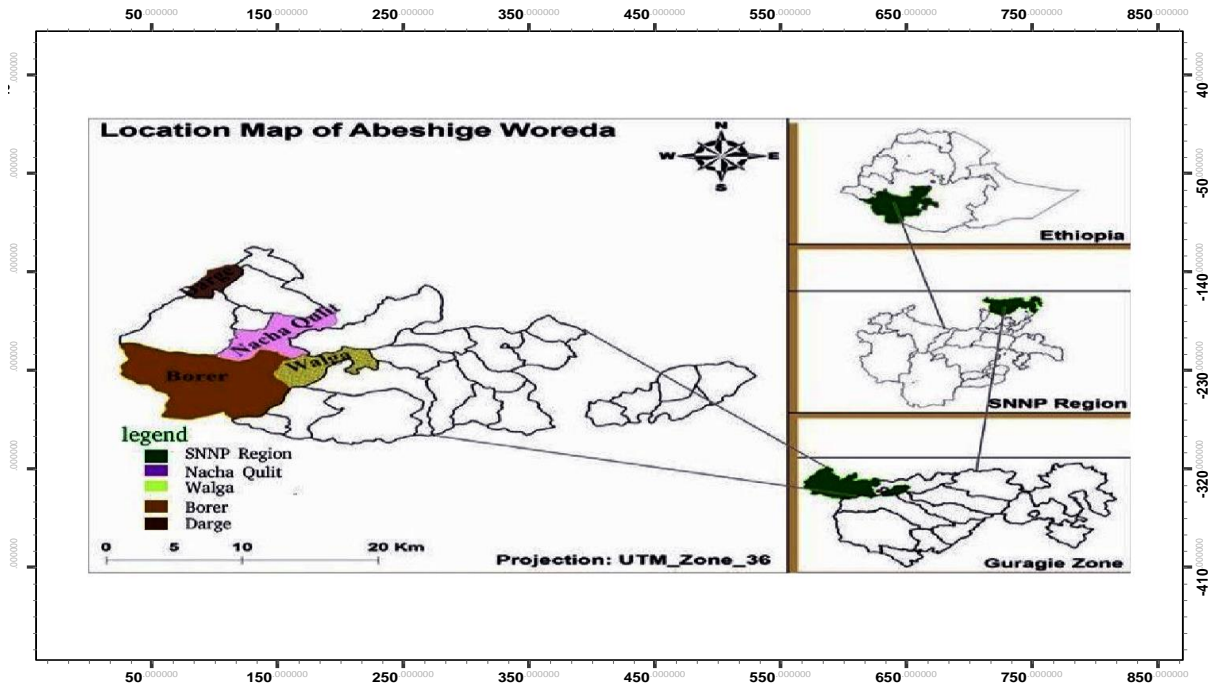
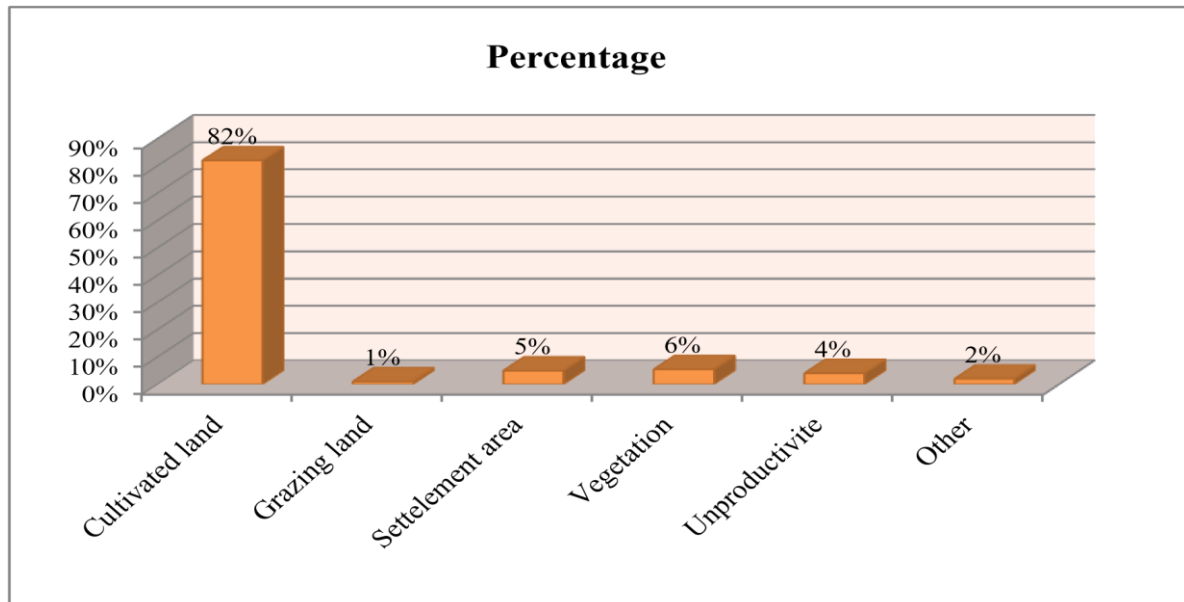


Figure 3.2: Land Use of Abeshige Woreda



Source -Abeshge woreda land administration and environmental protection office (2023)

### **3.1.4. Topographic features**

Topography describes the physical features of an area of land. These features typically include natural formations such as mountains, rivers, lakes, and valleys. Manmade features such as roads, dams, and cities may also be included. Topography often records the various elevations of an area using a topographical map. Topographical Features studies the elevation and location of landform, elevation, latitude and longitude.

Topographic feature of Abashge Woreda is characterized by diversified land form of high land having mountains, undulating, steep slope, plains and hill that lies at the altitudinal range of 1100– 2300 masl, although there are some lowland areas (1100–1500 masl). It covers an area of 61,016 ha of which the mid- and lowlands constitute roughly 85 and 15 %, respectively EIAR, (2011).

### **3.1.5. Climate**

As it was true to the other parts of Ethiopia, rainfall and temperature conditions depend on elevation. According to the Ministry of Agriculture (MoA) (1998), the agro-ecology of the area is classified into two agro-ecological zones (midland and lowland areas). The area lies at a latitude and longitude of 08°19'N 37°28' E and 07°56'N 37°37' E, respectively, at 1500–1800 masl. The district has generally a midland climate with an altitudinal range of 1100–2300 masl, although there are some lowland areas (1100–1500 masl). It covers an area of 61,016 hectare of which the mid- and lowlands constitute roughly 85 and 15 %, respectively EIAR, (2015).

Based on information obtained from the Abshege Woreda Agriculture and Rural Development Office, the area is characterized by a uni modal rainfall pattern with heavy and erratic distribution. Kiremt“, the main rainy season, extends from June to September with the peak rainfall occurring during July and August. The short rainy season called “Belg” stretches from March to May. The mean annual rainfall is 801–1400 mm. However, the short rains are highly erratic in nature that farmers do not rely on them for grain production. Its mean annual temperature is 23.2°C, with mean annual minimum and maximum temperatures of 18.0 and 28.3°C, respectively.

### **3.1.6. Soil types**

The major soils types found in Abeshge Woreda are the following;

#### **Red and Brown soil**

Red and brown soil found on sloppy as plain areas, it has good drainage and more fertile when compared with vertisols. It is suitable for growing crops such as:-wheat, bean, peas, etc with fertilizer and compost, it gives good production. But such types of soil is highly exposed to erosion, that covered about 30% of the total area of the Woreda (WARDO, 2015)

Mostly founded sloppy area, it is less fertile and characterized by poor drainage and difficult to work on such soil when there is too much moisture. It is suitable for growing crops like: teff, wheat, beans, peas, etc. This types of soil covers about 40% of the total area of the Woreda. (WARDO 2015)

#### **Others soil**

The area of minor importance as far as agricultural is concerned. It is difficult to classify them as they found mixed. Such types of soil are poor in fertility and mostly used for grazing. Approximately they cover about 20% of total area of the Woreda (WARDO, 2015).

### **3.1.7. Land use and vegetation**

The current land utilization in the area is dominated by traditional subsistence mixed livestock-crop rain-fed farming. In mixed farming systems, livestock and crop production are complementary in that livestock, among others are used for nutrient recycling while crop production provides residues for animal feed. Crop production from smallholder farmers is the basic production unit, mainly carried out under rain-fed conditions using traditional farming system. Farmers use oxen to pull the local plough (Maresha). Most of the farmers in the midland areas cultivate their land 3-4 times before planting cereals. On the other hand, farmers living in lower elevation areas practice minimum tillage (1- 2) times.

The major crops and vegetation grown in the area include Red peppers, common bean, maize, wheat, barley, teff, sorghum, chickpea, onion; root and tubers including enset, and potato; fruits (banana, citrus, papaya, mango and avocado); stimulants, such as coffee, and chat.

### **3.1.9. Wild life**

There are a few wild animals in the area includes rabbit, hyena, fox, and duck. But all of them are live with in different *Kebele* without any reserved areas (WARDO, 2015).

## **3.2. Socio-economic conditions**

### **3.2.1. Energy and water supply**

People used energy supply to different purpose like food preparation with the sources charcoal, crop residue, firewood, and animal dung. Abeshge town is used electricity and some *kebeles* are also getting this service with in the short time (WIB (2015).

Water is a key to life on earth and have significant role in the socioeconomic development of the society. A regular and sufficient water supply is one of the basic requirements and necessity of humanity for its survival. Hence, access to clean drinking water is important for people's health. So, the coverage of clean pump water in the Woreda is 184 and 70% coverage of drinking water getting from, hand pump spring development and deep well. However, the quality of water is unsafe and its production could not meet the existing demand. (WIB, 2015)

### **3.2.2. Communication and transportation**

There was one telephone station in Abashge Woreda and most of the rural agricultural and public institutions have wireless telephone and also the people of the Woreda are the user of mobile telephone currently (WIB, 2015).

There are both modern and traditional types of transport system in the Woreda. According to detailed statistics on roads cited on SNNPR bureau of finance and economic development website (2009) illustrates that Abashge Woreda has 45 km of all-weather roads and 17 km of dry weather, for an average roads density of 199km per 1000 square kilometers.

### **3.2.3. Agriculture**

Agriculture is undeniable fact that Ethiopia is predominantly an agricultural country, more than 85% of the population depends on the this sector of the economy that constitutes about 45% of the crops domestic products GDP from this sector and almost all the country exports depends on the agricultural activity. Agricultural developments depends on the modern techniques of production, better means of irrigation, improved seed, fertilizer and market for sale. But most traditional farming is under taken solely for subsistence. A subsistence farming family should be able to produce almost some of goods its needs majority of population of the Abashge Woreda obtain their income from agriculture.

Agriculture production is declining gradually because of over cultivation without appropriate cultivation methods, low usages of agricultural inputs, unreliable rainfall and the like. Currently because of special attention is given to this sector there is a considerable

improvement are shown in the case of better extension service and provision of adequate inputs.( WARDO, 2015).

The Abashge live a sedentary life based on agriculture, involving a complex system of crop rotation and transplanting. Ensete is the main staple food, teff ,maiz and other cash crops are grown, which include coffee and chat which used as traditional stimulants.

Animal husbandry is practiced, mainly for milk supply and dung. Other foods consumed include green cabbage, cheese, butter, roasted grains, meat and others.

The principal crop of the Abashge is ensete (also enset, ensete edulis, or "false banana plant"). This has a massive stem that grows underground and is involved in every aspect of Gurage life. It has a place in everyday interactions among community members as well as specific roles in rituals. For example: the ritual uses of ensete include wrapping a corpse after death with the fronds and tying off the umbilical cord after birth with an ensete fiber; the practical uses include wrapping goods and fireproofing thatch. Ensete is also exchanged as part of a variety of social interactions, and used as a recompense for services rendered.

#### **3.2.4. Trade and industry**

There are no medium and large-scale industries that govern by government or private investors but there are some small-scale industries like woodwork, metalwork, and pottery industries. (WIB, 2015).

#### **3.2.5. Demographic condition**

Based on the 2015 Census conducted by the CSA, the total population of the district, which constitutes two urban and 26 rural *kebeles*, is 72,917 of which 37,187 (51 %) and 35,730 (49 %) were females and males, respectively. Four rural *kebeles* (Walga,Borer,Dargie,and Nacha Qulit) with a total population of 13,861 in 1761 HHs were involved in the study. Each village has, on average, 487 HHs and 3465 people. The majority of the inhabitants practiced Ethiopian Orthodox Christianity, with 50.8% of the population reporting that belief, while 31.96% were Muslim, 15.82% were Protestants, and 1.28% were Catholic.

### **3.3. Methods of data collection and analysis**

#### **3.3.1. Sources data collection**

In this study, both the primary and secondary data were used. The primary data were collected through a household survey, key informant interviews and field observations. To generate relevant secondary data on effect of rapid population growth on the agricultural land utilization, data were collected from different published and unpublished sources such as

government institutions; the Bureau of Agriculture and Rural Development (Board), Woreda agricultural agency reports and websites were referred

### 3.3.2. Data collection instrument

Data were collected from *kebeles* members by using both closed and open ended questionnaire present to the respondents to express their view, ideas, intention about effect of rapid population growth on the agriculture land utilization. Open-ended questions are those that provide respondents with a question prompt and provide them a space in which to construct their own response. Closed-ended questions, alternatively, provide a question prompt and ask respondents to choose from a list of possible responses. The main tool and instrument which were used or employ in this study is questionnaire and structure interview.

### 3.3.3. Sampling techniques and Sample size

The district has two urban and 26 rural *kebeles*. In the first stage, among 26 *kebeles*, four major effects of rapid population growth on agricultural land utilization were selected. In the second stage, the households that exist in the four *kebeles* effect of rapid population growth on agricultural land utilization were selected using random sampling techniques. Hence, 94 respondents from four *kebeles* of Abshige Woreda were selected and interviewed.

The total households of Necha Qulit, Dargie, Borer And Walga *kebeles* is 1761, from thus the researchers would be selected 94 respondents. By applying RNal.m.wris, 1998 formula such as  $n = \frac{N}{1 + N(e)^2}$  by substituting given numbers above

$$n = \text{respondents} \quad n = \frac{1761}{1 + 1761(0.1)^2}$$

$$N = \text{households} \quad n = \frac{1761}{1 + 1761(0.01)}$$

$$e = \text{error} \quad n = \frac{1761}{1 + 0.01} \quad n = \frac{1761}{18.61} = 94$$

Table 3.1: Sampling house hold and from each *kebele*

<b>No</b>	<b>Name of Kebeles</b>	<b>No of HH</b>	<b>Respondent</b>
1	Necha Kulit	744	40
2	Dargie	395	21
3	Borer	393	21
4	Walga	229	12
	<b>Total</b>	<b>1761</b>	<b>94</b>

Source: Field survey, (2023)

The studies were examining a sample frame of 26 *kebele* from Abeshge Woreda. The sample was selected four *kebeles* among Woreda, which was selected purposefully based on their population pressure, productivity, vegetation cover, their application measures towards improving productivity and the problem of soil erosion. The total populations of these four *kebeles* are 13,861. The total number of the households in these four *kebeles* is 1761 of the total population of the four *kebeles* and total area of the Woreda 61,069 hectare.

The researchers randomly selected 94 households from each *kebeles* to gather the required data through interview and questioners. Thus the sample size is 1761 households of the four *kebeles*. The information that is collected from this sample represented the information obtained from the total households.

### **3.3.4. Method of data analysis**

The Data were obtained from primary and secondary source have been more descriptive and analyzed by using some lists of tables and percentage interpretations, data were interoperate by using both qualitative and quantities methods of data analysis. Quantitative data analysis by using table, graph and percentage is use for data analysis and qualitative analysis data collected from interview and researchers own observation and questionnaire.

#### **3.3.4.1. Qualitative data analysis**

It is used to understand concepts, thoughts or experiences. This type of research enables you to gather in-depth insights on topics that are not well understood. Common qualitative methods include interviews with open-ended questions, observations described in words, and literature reviews that explore concepts and theories.

#### **3.3.4.2. Quantitative data analysis**

In quantitative data analysis you are expected to turn raw numbers into meaningful data through the application of rational and critical thinking. Quantitative data analysis may include the calculation of frequencies of variables and differences between variables. A quantitative approach is usually associated with finding evidence to either support or reject hypotheses you have formulated at the earlier stages of your research process.

#### **3.3.4.3. Interview**

An interview is a structured conversation where one participant asks questions, and the other provides answers. In common parlance, the word "interview" refers to a one-on-one conversation between an interviewer and an interviewee. The interviewer asks questions to

which the interviewee responds, usually providing information. That information may be used or provided to other audiences immediately or later.

#### **3.3.4.4. Questionnaire**

A questionnaire is a research instrument that consists of a set of questions (or other types of prompts) for the purpose of gathering information from respondents through survey or statistical study. A research questionnaire is typically a mix of close-ended questions and open-ended questions. Open-ended, long-term questions offer the respondent the ability to elaborate on their thoughts.

#### **3.3.5. Ethical Consideration**

The researcher has certain ethical standard consideration suggested by (*kvale, 2009*). These include informing the participants about the purpose of research, voluntary participation, confidentiality, avoiding dependent relation and etc. The researchers would conduct after getting full willingness and consent from the participants, participation in interview voluntarily.

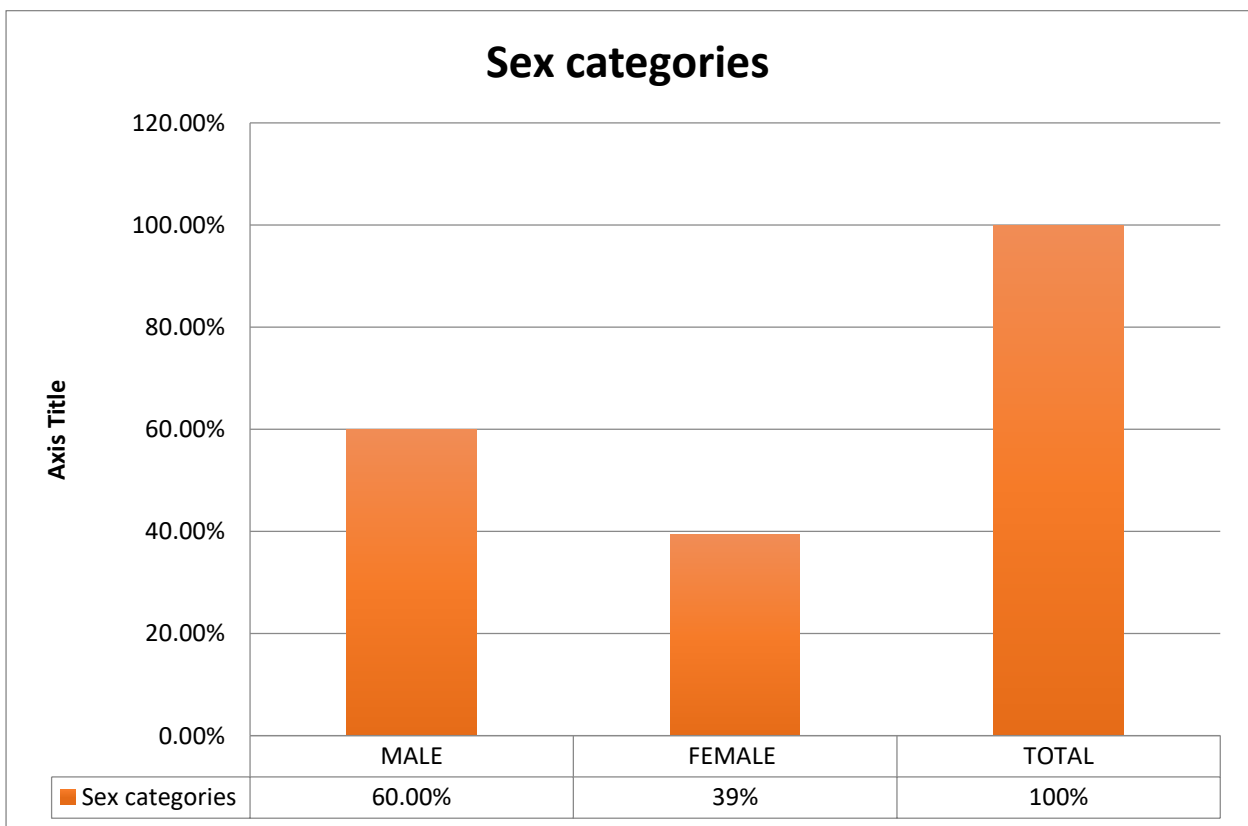
# CHAPTER FOUR

## 4. DATA ANALYSIS AND INTERPRETATION

Since population size and characteristics are directly related to the supply and demand condition for basic human necessities such as food, shelter, education facilities which in turn directly or indirectly influences the utilization of resources and farming practices in a given farming system, the researcher needed to devote some paragraphs to describe important attribute of sample house households.

### 4.1. Socio-economic characteristics of respondents

Figure 4.1. Sex categories of respondents



Source: Field Survey, (2023)

The above figure indicates as 60% of the respondents were male and the remaining 39% are females

Table 4.1. Ages of respondents

No	Age group	Number	Percentage
1	<20	9	9.6
2	21-30	12	12.7
3	31-40	23	24.5
4	41-50	34	36.2
5	51-60	10	10.6
6	>60	6	6.4
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023).

Table 4.1 indicates the age of the respondents was divided. The criteria used to divide the age of the respondents are to know the concentration and in which range the age of most respondents are found. So most of respondents age are concentrated from 41-50, which accounts 36.1% of the respondents.

Millions of young women around the world are married before they turn 18, many against their will and in violation of international law and conventions on women right. These young brides have limited education and economic opportunities, and they are vulnerable to health complication that result from giving birth before their bodies are full developed. So these factors accelerating for population growth this population pressure affect natural resource. They often are social isolated and powerless in the relationship. (Connecticut Avenue, w.SC2009)

Table 4.2. Educational background of the respondents

No	Educational level	Number	Percentage
1	Uneducated	36	38.3
2	1-4	23	24.5
3	5-8	14	14.9
4	9-10	12	12.8
5	Above 10	9	9.5
<b>Total</b>		<b>94</b>	<b>100</b>

*Source: Field Survey, (2023)*

Table 4.2 shows that 38.3 % of the respondents were uneducated , while the remaining respondents had various educational level ranging from the ability to read and write up to 12<sup>th</sup> completion. One of the most effective ways to lower population growth and reduce poverty is to provide adequate education for both girls and boys so create using family planning on this ways population growth are diminished. The more respondent are found uneducated level and low attention of family planning so population is easily grown. Generally, education is very important to obtain and use information relevant to utilize resources wisely.

Ethiopia is the second largest host of refugees in Africa and the educational needs of these children place additional pressure on regions which already face challenges in delivering quality services to their own host populations. The country is prone to prolonged and multiple climate-induced and conflict-related emergencies that directly impact children’s access to education, UNICEF, (2018)

Table 4.3. Family size of the respondents

No	Family	Number	Percentage
1	3	9	9.6
2	4	9	9.6
3	5	16	17
4	6	19	20.3
5	7	18	19.1
6	8	11	11.7
7	9	7	7.4
8	10	5	5.3
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

Table 4.3 shows that the family size of respondents. This indicates as there is a rapid population growth in Necha kulit, Dargie, Borer and Walga *kebles* which increases demand for various things, expansion of farm land, cutting of tree.

Ethiopians usually have multiple children. In urban areas, the minimum is generally four or more, and in rural areas, the number can be much higher. However, the government has put a lot of effort into promoting family planning considering the high population and lack of resources. The use of contraceptives among married women has increased significantly from 6% in 2000 to 27% in 2012. In 2016, it was estimated that most women had their first child around the age of 20 ( Nina Evason, 2018).

#### 4.2. Impact rapid of population growth on the agricultural land

Table 4.4 Population growth on the agricultural land

No	Population growth	Frequency	Percentage %
1	Very high	60	63.8
2	Very low	34	36.2
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

Table 4.4 indicates 63.8% of the respondents said that there is high growth of human population in Necha kulit, Dargie, Borer and Walga *kebles*. The remaining 36.2% of the

respondents said that there is no rapid growth of population because people are getting information about family planning in addition to this they send their children to schools.

Table 4.5. Effect of rapid population growth on the agricultural land

No	Effects of rapid population growth on the agricultural land	Frequency	Percentage
1	Yes	60	63.8%
2	No	25	26.6%
3	Unknown	9	9.6%
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

The increase in population number resulted in reduction of farm land that were owned by one farmer becomes owned by two or more new comers, which results in fragmentation of farm land.

In the relation to this there is a multi-faced and complex inter-relationship between people, agriculture and environment. As a result there has been a growing debate population-environment relationship for more than half a century. And in many parts of the world, however, this relationship becoming a determinate to the environment there by leading to the conclusion that environmental degradation is to a large extent human induced (sanders, 2001). Generally, from table 4.5 one can conclude that this high growth of population brings derivation of resources on one hand and difficulties to increase income per household due to low productivity.

Table 4.6. The size of farm land per house land

No	Size of farm land per hectare per Household	Respondents	
		Number	Percentage
1	<0.5	30	22.5
2	0.5-1.5	50	37.5
3	1.5-2.5	32	24
4	2.5-3	12	9
5	>3	9	6.7
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

Table 4.6 indicates that 37.5 % of the respondents have farm lands 0.5 to 1.5 hectare and 24% of the respondents have 1.5 to 2.5 hectare pers house hold and 22.5% of the respondent have less than 0.5 hectare per household. So we can expect that unless family planning and other models of farming that can improve the productivity of the farmers are implemented in near future farmers may be forced to have below one hectare of land per household, which may cause food insecurity and migration from their village.

As the researchers obtained information from development agents through interview, they said that most of the farmers had farm land from 0.5 to 1.5 hectare and possession because they have families that will become new household in the recent future. So, giving family planning training to the rural people of Necha kulit, Dargie, Borer and Walga *kebles* and changing or improving the farming system is mandatory.

### 4.3. Types of Economic Activities

Economic activities refer to the production of goods and services for sell or exchange including production and processing of primary production for own consumption or for other uses. Communities of study area practices different types of economic activities primarily all household heads were engaged on primary economic activities.

Table 4.7. Types of economic activities

Types of economic activities		Respondents	
		Frequency	Percentages
1	Crop production	25	26.6
2	Livestock rearing	20	21.3
3	Mixed farming	30	31.9
4	Agro-forestry	10	10.6
5	Others	9	9.6
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

As indicated in table 4.7 above, majority of respondents practiced mixed farming activities such as crop production and livestock rearing. The remaining few number of households practiced agroforestry (10.6 %) and other economic types like trading and government

workers. Therefore, the dominant economic activity in the study area was agriculture. So that rapid growth population in the area seriously affects the size of agricultural land for individual farmers in general and agricultural productivity in particular. Furthermore, according focus group discussion population growth causes the degradation of agricultural lands that result with economic problems for agricultural dependent households.

#### 4.4. Cultivation of farm land within a year and average yield per hectare

Table 4.8.Cultivation of farm land within a year

NO	Cultivation of farm land within a year	Respondents	
		No	Percentage (%)
1	Only one times	36	38.3
2	Two times	58	61.7
3	Three times	0	0
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

Table 4.8 shows 61.7% of the respondents said that they cultivate their land two times within a year. The remaining 38.3% of the respondents said that they cultivate their land only one times within a year due to different reasons, such as weather change, lack of soil fertility, because of over cultivation.

Most food production in the Necha kulit, Dargie, Borer and Walga *kebles* depends on the rain fed condition. Rain fed agriculture is not enough to feed this rapid growing population because of the following factors such as rain failure at crucial time in agricultural cycles, animal disease, rain storms, flood and floods related hazards may lead declining of productivity.

Food insecurity in Ethiopia in 2022 is already severe, with an atypically high population in need of food assistance during the peak of the meher lean season. While assistance needs will be slightly lower after the lean season, they will remain historically high. One round of assistance distribution took place in the first half of 2022 across much of Ethiopia, and while this helped to mitigate food consumption deficits among those who received assistance, it did not provide widespread and significant improvements in household food consumption. FEWS NET, (2022).

If there is a better source of family income, there would mean better nutrition in the family that means also the family members engaged in economic activity to generate more income which in turn also a leads to improve the development of economy. Access to sufficient food and nutrients is essential for household welfare, as well as for accomplishing other development objectives FAO, (2022).

Table 4.9. Average yield per hectare per year

No	Yield per household (in quintals)per year	Respondents	
		Number	Percentage
1	Above 15 quintals	9	9.6
2	10- 15 quintals	25	26.6
3	5- 10 quintals	48	51
4	Below 5 quintal	12	12.8
<b>Total</b>		<b>94</b>	<b>100</b>

Source: Field Survey, (2023)

Table 4.9 depict that 9.6% of the respondents said that the average yield of the farmers are above 15 quintals, 26.6% of the respondents also produce above 10-15 quintals and 51% of respondents are produced 5-10 quintal. The remaining 12.8% of the respondents said that the yields they get from one hectare on average within a year is below 5 quintals.

The researchers interview one of the development agents in the Necha kulit, Dargie, Borer and Walga kebles, he said farmers whose yields are 15 quintals and above use organic fertilizer to improve their yields. The remaining farmers whose products are below 5 quintals do not use inorganic fertilizers due to low purchasing power of the farmer and because of high price of the fertilizers.

Besides the interview said that in the rural area the use of animal dung and crop residue for fuel is common and fertility has led to a progressive deterioration in the soil structure, infiltration capacity, moisture storage and fertility.

#### 4.5. Contribution of rapid population growth in soil erosion

Table 4.10. Respondent contribution of population growth in soil erosion

Population growth and land degradation	Rate	Respondents	
		Frequency	Percentage
Deforestation	Increasing	47	50
	Decreasing	27	28.7
	Constant	20	21.3
	<b>Total</b>	<b>94</b>	<b>100</b>
Soil erosion	Increasing	47	50
	Decreasing	27	28.7
	Constant	20	21.3
	<b>Total</b>	<b>94</b>	<b>100</b>

Source: *Field Survey*, (2023)

Table 4.10 shows that 50% of the respondents said that population growth are contribute to deforestation and soil erosion is more serious for environment and farm land, especially for climate change when forest is clean there is no require sufficient amount of rain fall, the farming practice are dependence on rain fed agriculture in the study area. The remaining 21.3% of the respondents are said that population growths not contribute for deforestation and soil erosion it is constant, when population growth there is no change on the forest coverage area. It also increase the cost of farming because the fertilizer needs are greater, crop yield are lower and farm profits become diminish for this all about population growth.

In Ethiopia, land degradation, low and declining agricultural productivity, and poverty are severe and interrelated problems. In the light of the increasing population, land degradation in Ethiopia is bound to proceed at aggravated rates unless significant measures are made in conservation and rehabilitation.(MOA, 2007).

From the above point of views, there are studies which mentioned population growth as a cause for land degradation. For example, Paulos, (2001) argued that the fast growing population of Ethiopia is playing significant role in hastening land degradation in a way that the increasing population abused land by deforestation and overgrazing for more cropland and grazing area. Berry (2003) also reported that the loss of land resource productivity in Ethiopia is due to the continued population growth.

#### **4.6. The role of government to minimize the impact of population growth on the farm land.**

According to the discussion made with government experts, informed that the government plays a great role towards impacts of population on the farm land techniques through development agent and extension worker. These bodies' works at different localities to create awareness for the farmers about the impacts of population pressure on productivity. Population pressure the main contributor factor of soil erosion and deforestation, so government experts are creates awareness for community. Besides to mitigate the problem of soil erosion through forestation, covering bare land by different vegetation and by using different improved soil conservation techniques. They also provide soil possible solution to increase agricultural productivity based on sustainably improving and intensifying existing farming system by developing and disseminating technologies which are appropriate under the prevailing environmentally beneficial. Appropriate organic matter and nutrients management for improving soil structure, nutrients, sates and micro-biology should be key element any improved soil conservation (WARD0,2023).

As the local administration sated extension and developmental agents pay particular attention to the proper balance in amount of chemical and organic fertilizers. So the governments play an important rove to mitigate problem of soil erosion.

#### **4.7. Population Outflow In Necha Qulit, Dargie,Borer And Walga Kebeles**

In the interview made the Woreda administrator said that farmers who live on small plots of land whose fertility has been all most exhausted as a result of related and extremely backward agricultural practices, they prefer to move from such area to settle to another areas.

Rural areas that witness the arrival of skilled in-migration movements have experienced the emergence of new types and forms of social interaction and organization, new forms of sociological systems (SES) relationships, and potential opportunities to create value thanks to the inflow of new ideas, knowledge and skills. Rute Martins, (2018).

Agriculture and rural development (ARD) are key to addressing the root causes of migration. By 2050, over half of the population in the least developed countries will still live in rural areas. Three-quarters of the extreme poor base their livelihoods on agriculture or other rural activities. In Africa alone, 11 million young people will enter the labor market every year for the next decade.

## 4.8. Factors for rapid population growth

Table 4.11. Factors accelerating population growth

No	Factors	Frequency	Percentage
1	Lack of family planning	48	51.4
2	Religion	24	25.5
3	Cultural practices	14	14.9
4	Educational status	8	8.5
<b>Total</b>		<b>94</b>	<b>100</b>

*Source: Field Survey, (2023)*

As it is indicated in table 4.12 above, majority of respondents agreed that lack of family planning is the main factors accelerating population growth in the study area. On the other hand about 8.5% of respondents rely that educational status of people especially women population causes rapid population growth.

The lack of family planning there are many reason as to why women do not use contraceptives. These reasons include logistical problems, limited access to transportation in order to access health clinics, lack of education and knowledge and opposition by partners, families, or communities cultural, and religion.

UNFPA( United Nations Population Fund) says that efforts to increase access are sensitive to cultural and national contexts, poor women and those in rural area often have less access to family planning service.

## CHAPTER FIVE

### 5. CONCLUSION AND RECOMMENDATION

#### 5.1. Conclusion

In these parts of the paper, an attempt has been made to conclude and assess the effect of rapid population growth on the agricultural land utilization in case of Necha kulit, Dargie, Borer, and Walga *kebeles* on the basis of the findings. The increase in population growth is one of the major problems in Ethiopia including Abashge Woreda particularly Necha kulit, Dargie, Borer, and Walga *kebeles*. The effects rapid of population growth on the study area leading to land degradation, deforestation, and soil erosion, and the purpose of this study is to investigate the impact of rapid population on agricultural land in case of Necha kulit, Dargie, Borer, and Walga *kebeles*.

In the ecosystem, there is a strong intervention among organisms themselves and their environment. Likewise, differential rates of growth and agricultural land utilization which is limited in quantity. At present population growth operates in many ways to retard betterment's of man's material condition.

Rapid population growth due to the absence of orientations to farmers, knowledge about birth control methods, and family planning. This condition contributed to the population growth on the cultural land and resource of an area.

From an economic point of view, it is important for the country to possess within its borders the land on which its economic development and further progress can be based. Out-migration of the population from the rural area is one of the indicators of population growth in a given territory due to the various reasons. However, the effectiveness of such out migrations of the population depends on the destination of migrants. Generally, efforts have been made by the government to balance population growth and agricultural land.

## 5.2. Recommendation

Based on the findings the researcher's suggestion the following points may be solved the problem rapid of population growth and its effects Necha kulit, Dargie, Borer and Walga kebles.

- ❖ To reduce the high growth rate of the population, the provision of adequate knowledge about methods of birth control and family planning through seminars and others means is recommended.
- ❖ There should be equilibrium between the total area of a given country and its total population. Improving the productivity of farmers by using both chemical and organic fertilizers to increase their income of people is important. Appropriate organic matter and nutrient management for improving soil structure and nutrient status are very necessary.
- ❖ In generally, to improve yield it is better to use organic fertilizers rather than using chemical fertilizer because it also raise the country foreign expenditure which has a negative implication on the current economic situation of the country. Environmental education should be provided for the farmer about rational utilization of the land (soil), vegetation, and water.
- ❖ Trained manpower is very necessary to educate farmers and to check the effective implementation of different policies related to environmental conservation and others.
- ❖ Finally in conclusion, if development planner researchers and policymakers are to tackle the various problems of rural development in general and the improvement of traditional farming systems in particular, it is important to understand the socioeconomic characteristics and priorities of the farmers.

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# APPENDIX 1

## Questionnaires

The purpose of these questionnaires is to gather information about the impact rapid population growth on the agricultural land utilization in case of Abeshige Woreda. Hence your response are of consider importance for the success of this study. You are politely requested to respond as honest and kindly as possible.

1. Sex  male  female

2. Age less than 20  21-30  31-40  41-50   
51-60  greater than 60

3. Educational backgrounds

Uneducated  1-4  5-8  9-10  above 10

4. Do you think that rapid population growth have an impact on the farm land on Necha Qulit, Dargie, Borer and Walga *kebeles*?

Yes  no

5. If your answer is yes for questions no 4 what are the impact?

.....  
.....

6. How many hectares of land do farmers of the four *kebeles* have on averages?

<0.5  0.5-1.5  1.5-2.5  2.5-3  >3

7. Households family size .....

8. How many times do famers to cultivate the land within a year?

One times  two times  three times

9. How many quintals do farmers are yielding per hectare on average within a year?

10quintals  less than 10 quintals above 10 quintals

10. What types of economic activate practiced in your locality?

List them .....  
.....

11. What is the contribution of population growth in soil erosion in your locality?

Deforestation  soil erosion

12. What are the roles of government to minimize impact of population growth in the farm land?

.....  
.....  
.....

13. Is There Outflow Of Population In Necha Qulit, Dargie,Borer And Walga Kebeles?

.....

14. What are factors accelerating population in this area?

Lack of family  planning  Religious factors

Educational status  Culture of society

## **APPENDEX 2**

### **PPART 2**

#### **INTERVIEW QUESTIONS**

1. What types of economic activities practiced in Abeshge Woreda?
2. What are the factors that contribute for rapid population growth in the study area?
3. What are the impacts of rapid population growth on agricultural land utilization of the study of area?