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COLLEGE OF SOCIAL SCIENCE AND HUMANITY

DEPARTMENT OF GOVERNANCE AND DEVELOPMENT STUDY

AN ASSESSMENT CAUSES AND CONSEQUENCE OF LAND DEGRADATION THE CASE OF SOUTH WEST SHEWA ZONE IN WOLISO WORED IN LEMMAN AYETU KEBLE

A SENIOR ESSAY SUMITTED TO THE DEPARTEMENT OF GOVERNANCE AND DEVELOPMENT STUDY IN PARTIALS FULLFILLMENT FOR REQUIREMENT FOR BACHELOR FOR ART (BA) DEGREE IN GOVERNANCE

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ACRONYMS

CSA **Central statics agency**

EPA **Environmental protection authority**

FAO **Food and agricultural organization**

GDP **Gross domestic product**

GOE **Government of Ethiopia**

ILRI **International livestock research institute**

MOARD **Ministry of agriculture and rural development**

RDO **Rural development organization**

Abstract

From the finding the researcher recommended that alleviates land degradation by different measures like sustainable land .The research focus on the causes and consequences of land degradation in lemman ayetu keble,woliso woreda,south west shewa zone.

The general objective of the study was to assess the major cause and consequence of land degradation in the study area. To realize the objective the researcher took 38 Sample respondents from the study area and used questionnaire and interview as a data collection instrument. The methodology used in the study primary and secondary method of data collection with the technique of stratified sampling method.

The general finding of the study shown that due to cause and consequence of land degradation in lemman ayetu keble is affected by different activities like expansion of Agricultural practice continuous cultivation, over population, over grazing or large number of live stock population, deforestation, in appropriate land use and irrigation method. And the effect of land degradation includes decline soil fertility low productivity, poverty, loss of livestock population, food insecurity.

management policies(afforestation, reforestation) to control over population by using family planning(use contraceptive method) by controlling soil and water

Conservation increasing awareness of the community farmers about problems and solution of land degradation.

CHAPTER ONE

1 INTRODUCTION

1.1 BACK GROUND OF THE STUDY

Land degradation is the serious global scale, ongoing, and relentless problem that poses a major long term challenges to humans in terms of its adverse impact on biomass productivity, food security, biodiversity, and environmental sustainability. Land degradation is a temporary or permanent decline in the productive capacity of the land. Land degradation means the reduction or less arid semi-arid and dry sub humid areas of the biological or economical productivity and complexity of rain fed crop land irrigated cropland or range pasture forest and wood lands resulting from land uses from a process or combination of process including process arising from human activity and habitation patterns. Land degradation can be triggered by various process that however the potential productivity of land leading to long term , the process of soil erosion and biological ,chemical or nutrient depletion and physical degradation as a forms of land degradation [jobble metal,2002].

Land degradation is a problem in biological, economic productivity of terrestrial ecosystem including soil, vegetation, ecological and biological processes. It has been recognized as a global problem associated with desertification in arid, semiarid and dry sub humid zone known as dry lands. In Africa, the economic implications of land degradation are particularly severe in sub-Saharan Africa because 65% of the population is rural and the main likelihood of about 90% of the population is agriculture (project development facility, 2007).

Ethiopia is a country with high biodiversity. Distractive ecosystem and natural resource base criteria to the economy. The highest percentage population of Ethiopia depends its likelihood in agriculture which accounts for 50% growth domestic product (GDP) 85% foreign exchange

earnings and support. But direct loose of production from land degradation are mainly 3% of the growth domestic production (GDP) with population growth rate (keyser&Sonneuel, 2001). Land degradation that occurs in many forms is one of the most serious problems facing Ethiopian agriculture more markedly in the highlands. Reduced in agricultural productivity occurs most severely through soil erosion that are induced by water and associated biological forces. Moreover it was noted that land degradation has been manifested in the form of soil remove caused by sheet, rill and gully erosion, nutrient depletion due to burning of animal dung. Crop residues and other forms of biomass nutrient loss due to crop removal without replacement and continued loss and degradation of forests and other resources. In this light one can identify two most important forms of environmental degradation in rural Ethiopia the loss and depletion of soil and biodiversity. It is recognized that there is a serious disruption of both surface and underground water regime and the hydro-logical cycle at large (EPA 1994).

Land degradation defined as a temporary or permanent decline in the productive capacity of land or its potential for environmental management has significantly contributed to the low yield of crops and livestock of South west Shewa zone. Land degradation, either natural of induced by human is a continuous process. it has become, however an important Concern affecting food security and the wealth of nations and has an impact on the likelihood of almost every person on this earth.The degradation of land resource May be attributed partly to the failure of rural population in taking due care of these resources and remaining unaware of the long term consequences. It also largely affected by the influence of man and climate change when

vegetation cover is reduced of destroyed by allowing over grazing by livestock expansion of Agriculture land in to marginal areas, destruction woody plants, poor pasture management and other practice(Muluneh,1994).Similarly land degradation is also a problem in woliso woreda particularly lemma ayetu Keble according to reporting woliso woreda rual development office(RDO,2019)

1.2 statement of the problem

Now day land degradation one the serious global problem, several land degradation affected a significant portion of arable lands, decreasing the wealth and economic development of the international. Land degradation cancels out advanced by improved crop yields and reduces population growth. As the land resources base become less productive, food security is comprised and competition for dwindling resources increase, [Shannon, 2006]

In Africa the land degradation, a downward eco-social spiral is created when lands are depleted by unsustainable land management practices resulting in lost soil stability leading to permanent change .Research conducted by Habitamu(2017) discussed on the major consequence of land degradation ,such as a substantial reduction in the productive of land and which the deterioration in the quantity of land or soil that affect phenomena such as floods and bush fires .Land degradation threatens not only the viability of agriculture, but also water Quality, human health, biodiversity and the fundamental ecological process on which all life depend.

Temesgen (2018) also studied in Addis Ababa university on the impacts of the land degradation ,is one of the most for future and it requires great effort and resources to ameliorate ,in Ethiopia the land degradation that most affects agriculture productivity ,loss of biodiversity, decline of capacity of the land ,increase vulnerability of the environment of people

to destruction or crisis and destruction of soil structure including loss of organic matter .In additional land degradation implies reduction in biomass ,decrease in species diversity ,or decline in quality in term of the nutritional value for livestock and wildlife [Eswaran et al,2000].

Similar in woliso woreda there are the problem of land degradation, this means in this area the land degradation which effect on natural resource such like ,water ,soil and ecosystem The most common human included factor that causes accelerated erosion include deforestation ,in appropriate agriculture practices such as over cultivation and over grazing and inappropriate institution and policy application .This in turn leads various problem of land degradation in woliso woreda in of lemman ayyetu Keble. Therefore this study was conducted to identify major problem associated with cause of land degradation of local community and some alternative mechanism to minimize the problem of land degradation in this study area

1.3 OBJECTIVE OF THE STUDY

1.3.1 GENERAL OBJECTIVE

The general objective of this study is an assessment causes and consequences of land degradation in case of south west Shewa zone in woliso woreda.

1.3.2 SPECIFIC OBJECTIVE

The specific objective this study would be are mention the following

- To identify the major causes of land degradation.
- To identify the effects of land degradation
- To determine communities awareness toward of land degradation

1.3.3 Research question

This study would be try to answer the following question derived

1, what are the major causes of land degradation in this study area?

2, what are the effects of land degradation in the woliso woreda?

3, what does communities of the Keble aware of land degradation in the study area?

1.5 SIGNIFICANCE OF THE STUDY

This study would provide full information about of the causes and consequences of land degradation in woliso woreda.To indicate some land degradation problem that affect on economical and nature resources.It would ensure that to identify the main causes and consequences of land degradation .To promoting a communities awareness about the land degradation .It would also study how to preventive land degradation in this study area.

1.6 SCOPE OF THE STUDY

The study was done in lemman ayetu keble of woliso woreda. The researcher confined to study on this keble due to familiarity of the area which easily help him together data from the study area conceptually the study is scope to identify the causes and consequences of land degradation in the study area .The result of this study may or may not correspond to other woreda of the region.

1.7 Limitation of the study

Like all research, this study had limitations. The sources of difficulties which were existed in this study are described as follows:when we collected data information on cause and consequences of land degradation can.t get more information at the period of time . Another limitation in the

study was there is lack of financial .It is very important to note that these limitations do not contain any significant interference with the outcome of the data.

1.8 ORGANIZATION OF THE STUDY

This paper is organized in to five chapters .The first chapter includes introduction party, background of study ,statement problem ,objective of the study, ,significance of study ,scope of study ,and ethical consideration. The chapter two deals with literature review ,definition of land degradation ,factory of land degradation ,soil as form land degradation ,biological degradation of soil, chemical degradation(nutrient depletion) of soil, physical degradation of soil ,consequences of land degradation, and definition of term ,chapter three will contain research methodology , description and location of study are, data sources ,research approach , and research design, sample size and sampling technique ,method of data collection and method data analysis.The fourth chapter deals with data analysis and data presentation.Finally five chapter focuses on the conclusion and recommendation .

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 DEFINITION OF LAND DEGRADATION

Land degradation means to any the reduction or loss in the biological or economic product capacity of the land resource base. Land is more than the degradation of land or soil .because of the complex nature land degradation processes. it is essentially a geographical subject matter . however ,land degradation can result both physical geographical and socio economic cause .It is generally human caused by activities,exacerbated by natural processes and often magnified by and closely intertwined with climate change and biodiversity loss(scherr and Yadav,2001).

Land degradation as deterioration or total loss of the productive capacity of the soils or present or feature use ,it is a loss of actual or potential productivity or utility as result of natural antro pogenic factors; that is ,the decline in land quality or reduction in productivity (Eswaran et al .2001).Land degradation is the difficult of the lack of effective methods and suitable criteria to quantitative analysis the processes reduction or loss of the biological or economic productivity and complexity ratified crop land ,irrigated crop land or range ,pasture ,forest ,and wood lands resulting from land uses or a process or combination of process, including process arising from human activity and habitation patterns ,such as soil erosion caused by wind or water ,deterioration of the physical ,chemical and biological or economic properties of soil, and long term loss of natural vegetation .These changes have impact on average and variance of yield ,and the total factor productivity of agricultural production resulting in loss of income or consumption as well as increase production cost and increase income risk(FAO,2002).

Land degradation are a mirror images of the some process to change and the system capacity to adopt to change .Land degradation is a human induced phenomenon that cannot be caused by natural process alone ,decreases the capacity of the land system as managed to meet its user demand ,and land degradation is the threatens the long term biological and economical reliance and adoptive capacity of the ecosystem ,[juntti and Wilson ,2005]

Land degradation which due to natural process or human is no longer able to sustain properly an economic function or the original ecological function .Land degradation implies that reduction in biomass, decrease in species diversity, or decline in quality in terms of the nutritional value for livestock and wildlife [eswaras et al, 2000].and land degradation to decline in soil qualities commonly caused through improper use by humans. Land degradation indicators have the capacity to engage a wide range of stakeholder, from policy makers to land managers, to provide interdisciplinary information about the nature of environmental change.(pinet et al.,2006)

Land degradation describes how one or more of the land resources [soil, water, vegetation rocks ,air ,climate ,relief,]has changed for the worse. A land slide is often viewed as an example of land degradation in action ,if changes the feature of the land ,causes destruction of houses and disrupt activates ,this link between degradation which is often causes by land use practices and its effect on use its

2.2 LAND DEGRADATION FORM EXTENT AND RELATED FACTORS IN ETHIOPIA

Land degradation because of erosion results from soil more rapidly than it is form through natural process and the social problem related erosion depend on the intensity and extent of land degradation. It addition to this fourth study of another investigation reported the study of land

degradation cause by erosion sedimentation salts and alkali organic waste and infections organism [weeds, disease insects] looking its extent land degradation is word by wide problem [midline,1994].

Land degradation can be triggered by various process that lower the potential productivity of land leading to long term sometimes irreversible deterioration .These processes interrelated and could occur due to natural causes but the are invariably accelerated by human intervention in the natural environment. Human intervention increase with population growth and pressure .The most common human induced factors that causes accelerated erosion include deforestation I appropriate agricultural practice such as over cultivation and over grazing [Argash, 1985].

2.2.1 SOIL AS AFORM OF LAND DEGRADATION

The major physical agent of Land degradation is a serious by observed in the highland of Ethiopia. And this types is high soil erosion topography, rainfall ,wind ,lack of vegetation ,covers ,soil properties ,land use and land management ;over grazing are the immediate causes of soil .There are also underlying causes such as population pressure production and conservation technology and many of these are foe the influence by the various governmental policies or lack of them

2.2.2 BIOLOGICAL DEGRADATION OF SOIL

Biological degradation refers to the process that leads to decline in the humus contexts of soil through mineralization .Decomposition of organic matter is a functions of microbial activity ,the majority f organic matter is concentrated near the soil surface in the form of dealing leaves and steams so erosion of top soil results in a rapid decreases in a soil organic matter levels and therefore causes a loss food for microorganism once organic matter layer is depleted soil

productivity and crop yield decline ,because of the degraded soil structure and depletion of nutriments. The stability of soil aggregates a dependent on microbial biomass. Thus elimination of the soil microorganisms by erosion, burning, etc. Causes physical damage to the soil ecosystem.

These physical effects may in turn lead to increase erosion organic matter depletion and further in microbial activity .factors that causes favor the production and position of organic matter will minimize the risk of biological degradation, a decline in organic matter has a for reaching effects on both chemical and physical properties of soil. It affects soil physical properties through it is influence on soil structure and aggregate stability which therefore influence soil erosion. The availability of nitrogen and phosphorus is depend on organic matter content of the soil[Solomon ,1994].

2.2.3 CHEMICAL DEGRADATION [NUTREINT DEPLECTION]OF SOIL

Generally nutrients are lost through erosion in run off and the ended sediments ,finer soil fractions are the most vulnerable to erosion further nutrients losses occur through chemical degradation .i;e deforestation of practice of the soil that occurs a result of acidification and salinization of solidification .The latter is common in arid and semi-arid area where rainfall is inadequate ,to reach excess salts down through the profile but it is not a concern in this study .The acidification process may be accelerate through burning and clearing of vegetation continued use of acid containing fertility and excessive irrigation .A process of trans-location of nutrients beyond the reach of crops occur in areas of heavy rainfall where there are lengthy period of rain [jobber ,etal ,2002].

The length of follow period in the cropping cycle also influences the chemical properties of soil.Continuous cultivation lead to deterioration of essential nutrients .nutrient depletion can reduce it not severed it adequate additional nutrients are applied to crops to replace potential losses through leaching up make by plants and other process [Thomas ,1997].

2.2.4 PHYSICAL DEGRADATION OF SOIL

Physical degradation may occur as a result of scaling compaction reduction in aeration and reduced permeability..etc. lack of organic matter and a high percentage of very fine sand and silt in soils are some of the factors contributing to surface sealing. Crop production requires finely prepared seed bed with the Maresha which affect soil structure, leave the soil devoid of vegetation exposing the latter to kinetic energy exerted from rain drops. In such cases the clod dislodge and seal soil pores spaces reduced infiltration and increases over land flow volume and velocity leading to soil crusting especially when it is dry.(Midline,1994)Overgrazing and over stocking including grazing of left over on cropland after harvesting cause soil compaction due to heavy and continuous trampling by live stock (Astra, 1992).

2.2.5 Biophysical impacts of land degradation

Some of more direct and immediate causes of various forms of land degradation were mentioned in earlier section. The immediate impacts of degradation is on soil degradation through erosion nutrient loss and other processes result in undesirable physical chemical soil properties and there by considerably depresses crop yields. The most important factor reducing soil productivity by soil degradation are reduced soil depth (reduced root depth)and soil water storage and loss nutrients (Jobber etal, 2002).

Based on the findings of soil conservation research project size in different parts of Ethiopia, it estimated that about 1500 million ton of soil was lost from the highlands of land of Ethiopia every year, about 50% of the rural population were affected to some agree and 1_2% of country's agricultural production was lost (Hurni, .1998).

grazing resources and quality and productivity of grass lands and the loss of nitrous palatable plant and grass species due to deforestation have all contributed to reduced livestock productivity. Food shortages are major reason for many small holders to not kept livestock any more. Many small holders cannot afford to maintain drought oxen for land preparation and so they rent or borrow them (Cabal,2000).

Land degradation is not only impacts of crop and livestock productivity but also water resource on which welfare of human life depends. Many activities both good and bad have been practiced in the watersheds of lakes, Reservoirs River and streams due to an increasing human population. As a results of extension deforestation over grazing and poor crop and soil management practices in the water sheds over long period large Sediments load have accumulated in the river Channels Lake and reservoirs. A study Conducted with help of remote sensing techniques and direct observation to assess degradation of vegetation and gully erosion should that on average 10% of the soil moved by water in the highlands actually ends up in river and thus respond a permanent loss(Muluneh,1994).

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2.3 CAUSES OF LAND DEGRADATION

The major causes of land degradation although degradation processes do occur without interference by man, these are broadly at a rate which is in balance with the rate of natural rehabilitation .Accelerated land degradation is the most commonly caused as a result of human intervention in the environment .The effects of this intervention are determine by the natural landscape. The most frequently recognized main causes of land degradation are; overgrazing, of range land, over cultivation of cropland, water logging and salinization of irrigate land deforestation, and pollution and industrial causes. The natural cause of land degradation is, volcanoes, and high rain fall. Within these broad categories a wide variety of individual causes are in corporate, there causes may include the conversion of land system to produce crop yields, and production. Which is defined as the actual yields levels achieved by farmers, Land

degradation may reduce the inherent productivity of the system ,the other way of land degradation are shortage of land due to increased population ,poor land use in secure land tenure , inappropriate land management practice.

2.4 CONSEQUENCE OF LAND DEGRADATION

Land degradation has multiple and complexes impacts on global environmental through range of direct and indirect process. Affecting a wide array of ecosystem function and services .It has great affects agricultural productivity and production and it has estimated that the grate affects biodiversity both directly and indirectly .In terrestrial land system ,physical and chemical processes of land degradation can destroy soil biota(earthworm ,rhizobia, mycorrhizae) and alter and or reduce vegetation cover.(Gitay,2004).In production and it has estimated that the grain loss due to land degradation in 1990 would have been sufficient to feed more than and million people the availability include suitable for agricultural is highly shrinking while at the sometime the amount of land require to feed the grow population is steadying increasing [Tekety,2001].The main outcome of land degradation is substantial reduction include accelerated soil erosion, by wind and water, soil acidification, and the formation of acid sulfate soil resulting in barren soil.

The major outcome consequences of land degradation are follows;

- -Decline in the productivity capacity of the land [temporary or permanent]
- -Decline in the lands usefulness
- -Loss of biodiversity
- -Increase vulnerability of the environment or people to destruction or crisis
- -Accelerated soil erosion by wind and water

- -Soil acidification and the formation of acid sulphate soil resulting in barren soil
- -Soil alkalinisation owing to irrigation with water containing sodium bicarbonate leading to poor soil structure and reduced crop yields

  -Soil water logging in irrigate land which calls for some form of subsurface land drainage to re-mediate the negative effects
- -Destruction of soil structure including loss of organic matter

2.5 POSSIBLE PATH WAYS OF OVERCOMING LAND DEGRADATION

The possible path ways to reduce land degradation by the following

- developing a long term locally accepted set of land management right and responsibility
- improving marketing infrastructure both physical [roads]and pricing
- give high priority to fully provision on a regional basis through conservation wood lands use of conservation technologies.
- improve extension capacity especial with respect to sustainable land management.
- develop diversified rural enterprise in the context of an enhanced pattern of local and regional markets.
- Wood land protection and improved productivity of the livestock sector.
- greater participation of local farmers in the identification of local land degradation issues and their remediation .[Berry,2003]

2.6 DEFINITION OF TERM

Agriculture; it is the livelihood of rural farmers as the sources of job.

-Erosion; it is the removal of material or soil by the agent of water and wind.

-Land; it is the surface feature of the earth that lives all living organism.

-Land degradation; it is the decline of soil fertility on the surface of the earth.

-community; it is a group of people who live in the some areas [such as a city, town, of neighborhood]

-Biodiversity; the existence of many different kinds of plants and animals in an environment.

-Deforestation; the act or result of cutting down or burning all the trees in an area.

-Over population; a situation in which too many people or animals live in a certain area-Ameliorate; it is to make or something such as a problem better, less painful.

CHAPTER THREE

3. DESCRIPTIONS OF THE STUDY AREA AND RESEARCH METHODOLOGY

3.1 DESCRIPTION OF THE STUDY AREA

The study was conducted in oromia region in south west shewa zone woliso woreda special in lemman ayetu keble. South West Shewa zone is one of the zone of the Oromia region in Ethiopia .This zone takes its name from the kingdom or former province of Shewa ,between 2002 and 2005 ,south west shewa zone that contain 13 woreda .Among those woliso woreda is one of the woreda which found south west shewa zone. Woliso woreda which is 114 kilometers far from Addis Ababa. It has latitude and longitudes 8 degree 32N and 37degee 58E with an elevation of 2063 meters above sea level . This woreda was established in 1927 . Is with woreda those are 37 keble are there.Among those the lemman ayyetu keble is one of the keble which found in woliso woreda. The researcher were selected only one keble namely lemman ayetu keble.According to the Ethiopia census of statistical authority, (2007) the total population of lemman ayetu keble are 1122 from this 534 are male and 588 are female (CSA,2007).The major economic activity is this study area is depend on agricultural sector such like,teff,wheat,inset and different kinds of vegetable .By now the keble is serving as a sent of woliso woreda and south west Shewa zone administration (CSA, 2007).

3.2 RESEARCH METHODOLOGY

Research methods are the specific procedure, tools or techniques of gathering and analyzing data. In this study the researcher would be applies as descriptive research design by using a mix(qualitative and quantitative) research approach, and the source data we would be used both primary and secondary .The major primary source of data are obtaining through observation,questionnaire, and interview from selecting community in study area, and the major secondary of data is obtain from written document likes ,books,magazines,articles,journals. Internets, and woliso woreda rural development office.

3.2.1 RESEARCH APPROACH

In this study are researcher were be used a mixes(qualitative and quantitative)research approach .The rationale behind using the combination of both quantitative and qualitative research techniques is to give information and to the finding solution for the problem from the different perspective.

3.2.2 RESEARCH DESIGN

The study would be descriptive research design. to used understanding the cause and consequences of land degradation in woliso woreda in lemman ayetu keble. The study is presented by using qualitative and quantitative techniques .Data collected through questionnaire and descriptive analyses are applied .Tabulation and analyzing by using percentage ,qualitative data also describe the content analysis.

3.3 DATA SOURCE AND DATA COLLECTION TOOLS

3.3.1 DATA SOURCES

The sources of data for research has been contain both primary and secondary sources .The major primary sources of data were collected information from study area by form of questioner observation, and interview. The secondary data was collected from articles, journals, and woliso Administration woreda.

3.4 .METHODY OF DATA COLLECTION

3.4.1 FIELD OBSERVATION

To assess how land degradation affects, the researchers would observe those cause and consequences of land degradation of the study area. While, conducting observation,

The researchers was visit how land degradation created .Therefore the researcher was go personally and observe the cause and consequences of land degradation of the study area to gather data for the study and inform interview carried out with public official and community s during field observation.

3.4.2 QUESTIONNAIRE

The questionnaire is distribution to 38 persons selected from lemman ayyetu Keble of woliso woreda. To get reliable information ,from those in the study area ,the questionnaire are prepared in English and translate in to afaan Oromo language and translate in to English to maintain the consistency .The questionnaires are open and closed ended question prepared by the researchers. The open and closed ended questionnaire focuses on the challenges and problem regarding with the land degradation .Both open and closed questionnaire because closed question limit the ideas forwarded by the respondents open ended questionnaires are extremely usefully for seeking opinions attitude and perception.

3.4.3 FOCUSED GROUP DISCUSION

Focused group discussion is use as a means of triangulation with questionnaire data collection method. focus group discussion would be conducted in the study Keble participants being selected through purposive sampling . The focus group discussion having three participants was conduct with the elders, development agents, and Keble administrative.

3.5 SAMPLE AND SAMPLING STRATEGY

In this study we would be used both probability and non-probability sampling techniques, from probability sampling, research would be used simple random sampling. because simple random sampling reduce bias by giving equal chance to target population to be include the sample .from

non-probability sampling researcher would be used purposive sampling because by considering the financial and time constraint .In our study area of woliso woreda there are 37 keble in this keble the researcher would be selected only one keble named lemman ayetu keble and almost all Keble in woliso woreda have the same feature to get relevant information researcher

purposively .In lemman ayyetu keble there are 1122 people there, among these 538 male and 584 female. The researcher was selected the sample of 38 respondents.

3.6 METHOD OF DATA ANALYSIS

3.6.1.Quantitative data analysis

Both quantitative and qualitative data analysis techniques would be used in this study. The quantitative data analysis is a tabulating, interpreting and summarizing empirical and numerical data for the purpose of describing the data obtaining from the samples respondents.

3.6.2 Qualitative data analysis

In qualitative data analysis coding data is very important in order to discover what is important and what is to be learned, and deciding what to tell others qualitatively. The researcher was used a qualitative data analysis tools of open coding and selective coding to present and analyze the collected qualitative data. In qualitative data analysis is the process of examining the raw qualitative data which has in the form of words, sentences, or paragraph and assigning codes

.3.7 ETHICAL CONSIDERATION

Before data collection, we ask consent from concern's body .In this case, a formal letter from wolkite university particular from department of governance and development studies would be given and can show the letter concerned body .The development of trusting relation and creating

confidential between the researcher and concerned body would be very crucial .So ethical issue would be very important specially when gather data in order to get required information

CHAPTER FOUR

4. DATA PRESENT AND DISCUSION

4.1 Introduction

This chapter present and discuss the finding of the study.The study was to an assessment cause and consequences of land degradation ,a case of south west shewa zone ,woliso woreda in lemman ayetu keble.The analysis of the data collected and its interpretation was in relation to the objective and research question of the study.Data present includes personal profile of the respondents,the main cause of land degradation ,consequences of land degradation,and methods to reduce of land degradation.

4.2 Data presentation and analysis the respondent practices

This chapter deals with presentation analysis and interpretation of the collected data ,Based on the methodology state,data were collected from respondents of lemman ayetu keble .As indicated on the 3 third chapter of the paper the data were collected by using questionnaire and by interview with the concerned parties.A total of 38 questioners were distributed to farmers .out of 38 ,38 were answered and returned by the respondent in the word 100% are returned.The question summarized ,tabulated and analysised are present.

4.2 Demographics and characteristics of the respondents

This section those contain the demographics and characteristics of the respondents such as,sex distribution,age distribution,educational status,marital status,religions status and occupation status of the respondents.

Table 4.1 sex distribution of the respondent

No	Items	No of respondents	percentage
1	Male	28	74%
2	Female	10	26%
3	Total	38	100

Source :own survey 2019

As indicated the in above table 4.2.1 is 28(74%) of the respondents are male the the remaining 10(26%) of the respondents are females .This show that the proportion of males respondents is higher as compare to the number of female respondent.As we seen most the respondent in this the study area are male 28(78%).

Table 4.2 Age distribution of the respondents

Age	No of respondent	percentage
20-25	8	8%
25-30	12	32%
30-35	16	42%
Above 40	7	18%
Total	38	100%

Source;own survey 2019

As in the above table 4.2.2 show that the age lies between 20-15 age are 8(8%) , age lies between 25-30 is 12(32%) , age lies between 30-35 is16(42%) and the age above 40 year is 7(18%).As we seen on the table the we can understand to the most respondents lies between the of 30-35 age.As in the above table that indicate to the most respondent who found age between 30-35 are know about the cause and consequences about land degradation in this study area.

Table4.3 occupation of the respondents

No	Items	No of respondents	Parentage
1	farmers	28	74%
2	Merchants	2	4%
3	Gov employees	4	11%
4	students	4	11%
5	Total	38	100%

Source :own survey 2019

According to in above table 4.2.3 the farmers are 28(74%) of the respondents are farmers ,2(4%) of the respondents were merchant, 4(11%) of the respondents were Government employment, and 4(11%) of the respondents were student .on this table we can understand to the most respondent the study area is dominated by farmers.The most household living in this study area are depend on agriculture sector 28(74%) .and the lowest household living in this study area are merchant 2(4%)

Table 4.4 Education status of the respondents

Education level	No of respondents	percentage
Elementary	7	18%
High school	18	48%

Diploma	7	18%
Degree	6	16%
Total	38	100%

Source:own survey 2019

According to in above table 4.2.4 show that 7(18%)of the respondent were elementary,18(48%) of the respondents were high school,7(18%) of the respondent were diploma,6(16%) respondent are degree.As we seen in the above table the most respondents in this study area were by the education level were high school who can read and write18 (48%) ,and the lowest respondent in this study area by education level are who have degree certificate 6(16%).

Table 4.5 religious of respondents

Items	No of respondents	percentage
Orthodox	11	29%
Protestant	18	47%
Muslim	25	13%
Other	4	11%
Total	38	100%

Source :own survey 2019

According to in above table 4.2.5 show that 11(29%) of the respondents are orthodox 18(,47%) of the respondent were protestant ,25(13%) of the respondents were Muslim and 4(11%) of the respondents were other religious.On this table we can understand to the most respondents in this study area were follow protestant religious 18(47%) and the lowest respondents were follows other religious4(11%).

Table 4.6 marital status of respondents

Items	No of respondents	percentage
Single	8	21%
Married	24	63%
Divorce	6	16%
Total	38	100%

Source:own survey 2019

According to in the above table 4.2.6 show that 8(21%) of the respondents were single,24(63%) of the respondents were married,and 6(16%)of the respondents were divorced.On this table we understand the most respondent in this study area is dominant marital status is married 24(63%) and the lowest is divorced 6(16%).

4.3 The cause and consequences of land degradation analysis

Under this section that discuss and analysis the main cause and consequences of land degradation .The main the cause of land degradation is as respondents were said both human and natural cause .The human causes of land degradation are,over cultivation,desertification,over grazing,and absences of land management policies.and the natural cause of land degradation is high amount of rainfall and volcanoes.

4.3.1 The cause of land degradation.

Table 4.7 the main cause of land degradation

What the main Cause of land degradation?	No of respondents	percentage
Continuous cultivation	6	16%
Fragmentation of land	4	10%
Inappropriate land use	10	26%

Over population	18	48%
Total	38	100%

Source :own survey 2019

As it indicate the above table 4.3 indicate the main causes of land degradation information on respondents 6(16%) of the respondents answered continuous cultivation ,4(10%)of the respondent were said that fragmentation of land ,10(26%) of the respondents were said inappropriate land use, and 18(48%) of the respondents were said the main cause of land degradation are over population . According to the majority of respondents we collected information about the main cause of land degradation are over population. Generally among these respondents were 18(48%) number of the respondents responded the main cause of land degradation is over population.

4.3.2 Effects of land degradation

This section that was explain or to identify about the effect of land degradation .land degradation is has effects on both living things and non living things.special the effects of land degradation is loss of biodiversity,decreasing capacity of land and decline water quality.

Table 4.8 the effects of land degradation

What the consequences of land degradation?	Number of respondent	percentage
Low productivity	21	55%
Food insecurity	2	5%
Loss of livestock	4	11%
Poverty	11	29%
Total	38	100

Source: own survey 2019

As it indicate the above table 4.4 show that regarding to the effects of land degradation 21(55%) of the respondents were responded low productivity, 2(5%) of the respondents were responded food insecurity,4(11%) of the respondents are responded were loss of livestock, and 11(29%) of the respondents were responded poverty. According to above table show that regarding on the effects of land degradation the majority of sample respondents were responded are low productivity. As we understanding to get information on the respondents the low of productivity are main consequences of land degradation.The other idea that gained from the interviewed

people was said the consequences of land degradation is loss of biodiversity,destruction of structure, and decreasing the GDP of country.

4.3.3 Rate of land degradation

The rate of land degradation are different from place to place .special where the large number of population are found in one area, the rate of the land degradation are extreme.and where the forest are not appropriate, the rate of land degradation is smoothly.

Table 4.9 the rates of land degradation

What the rates of land degradation?	Number of respondent	percentage
Extreme	5	14%
Medium	18	47%
Smoothly	15	39%
No	0	0
Total	38	100

Source: own survey 2019

As it indicated the above table 4.5 show that regarding on rate of land degradation in this study area is ,5(14%) of the respondents were responded extreme,18(47%) of the respondents were responded medium, 115(39%) of the respondents were responded smoothly, and 0(0%) of the respondents were responded .Generally on this table we understanding the rate of land degradation in woliso woreda in lemman ayetu keble is medium according to the respondents information.

4.3.4 Methods to reduce land degradation

Under this section that was discuss on the methods to reduce of land degradation .those are many methods to reduce or decreasing the problem of land degradation,such like terracing,follow land area,and established land management policies.

Table 4.10 the method of reduce land degradation

What the Method to reduce land degradation?	Number of respondent	percentage
Afforestation	13	34%
Control over population	17	45%

Terracing	6	16%
Appropriate land use system	2	5%
Total	38	100

Source: own survey 2019

As it indicated the above table 4.6 show that regarding on the methods to reduce land degradation ,13(34%) of the respondents were responded afforestation ,17(45%) of the respondents were responded control over population,6(16%) of the respondents were responded terracing,2(5%) of the respondents were responded appropriate land use system.As from in above table the most respondents were responded the most important or method to reduce land degradation is control over population 17(45%).Generally we can understanding to on the respondents information control over population is the most methods to reduce land degradation.The other methods to reduce land degradation from the idea of interviewed are planting tree,follow land,and use crop rotation are the other methods of reduce land degradation.

4.3.5 Effects of land degradation on human beings

Table 4.11 effect of land degradation

What is the effects of land degradation ?	Number of respondent	percentage
Health insecurity	7	18%
Migration	14	37%
Low economic	9	24%
Poverty	8	21%
Total	38%	100

Sources: own survey 2019

As it indicate the above table 4.7 show that on regarding the effects of land degradation on the human beings ,7(18%) of the respondents were responded health insecurity,14(37%) of the respondents were responded leads to migration,9(24%) of the respondents were responded low economic ,and 8(21%) of the respondents were responded leads to poverty.From this the most respondents were responded the land degradation effects on human beings is migration. Generally we understanding to the land degradation special effects human beings leads migration.In addition to as data gathering information from the interviewed person the main

effects of land degradation on human beings is decreasing the standards of life,decreasing population growth and food insecurity.

4.3.6 Impacts of land degradation on natural resources

Table 4.12 impact of land degradation

What the Impact of land degradation?	Number of respondent	percentage
Air pollution	3	8%
Soil erosion	22	58%
Destruction of forest	10	26%
Hungry	3	8%
Total	38	100

Source: own survey 2019

As it indicate the above table 4.8 show that regarding on the impact of land degradation on natural resources ,3(8%) of the respondents were responded air pollution,22(58%) of the respondents were responded soil erosion ,10(26%) of the respondents were responded destruction of forest,3(8%) of the respondents were responded leads to hungry.According to from this above table the most respondents were responded the major impact of land degradation on natural resources leads to soil erosion22(58%).Soil is one of the natural resources ,when the land degradation is created soil erosion also created .so soil erosion is created by land degradation.The other idea that gained from interviewed people said the impact of land degradation on natural resource was decreasing water quality,elimination the capacity of minerals in land and destructive green area.

4.3.7 Cause of land degradation on poverty analysis

Table 4.13 the cause of land degradation on poverty respondent

Item	Number of respondent		percentage
Is land degradation is the cause of poverty?	Yes	35	92%

	No	3	8%
Total		38	

Source:own survey 2019

As it indicate the above table 4.9 show that 35(92%) of the respondents were responded said“YES“and the remaining 3(8%) of the respondents were responded said”NO”.this show that the most respondents was said the land degradation is the cause for poverty in lemman ayetu keble.Because the land degradation is destruction the nutrient of land and which reduce the productive capacity and output.and land degradation is which have a direct impact on the per capital income of the country.In addition to the idea of interviewed people was said land degradation is decreasing the agriculture productive and decreasing capacity of land.so when the agriculture productive is decrease poverty was created .Generally on the above table as indicated and on the idea of interviewed we can understanding to land degradation is cause of poverty.

4.3 Analysis agricultural development agent (DA) response

4.3.1 The main cause of land degradation

According to the data gathered from development agent [DA] , the main cause of land degradation in the study area : over population that leads to land fermentation , over grazing leads to soil erosion ,deforestation(clearance of forest for different purposes such as timber production . fuel building and expansion of farmland) , absence of crop rotation not sufficient soil and water conservation (SWC) management , depletion of fertile soil due to erosion , nature slop highlands to high erosion and absences of policies such like forestation ,reafforestation

4.2.2 Continuous cultivation and over population on land degradation.

Over population leads to continuous cultivation due to fragmentation of land because of population growth increase from time to time. But land is constant due to this cause of land degradation degradation I.e. the land cultivates without rest for long period overpopulation leads to continuous cultivation due to fragmentation of land because of population growth increase from time to time, but land cultivates without rest for long period of time by this cause nutrient of soil is depleted or the continents of the humus soil is reduced.

4.3 The rates of land degradation

The rates of land degradation increase from time to time in the study area. This because of population increment, overgrazing fragmentation of land in a met appropriate use of land and agricultural practices unwise use of irrigation hod large number of livestock population.

Generally the rate of land degradation in lemman ayetu is medium, as information gained from lemman keble representative said the rate of land degradation in this study area are medium.

4.3.3 Factors increase land degradation

According to the data given the export (DA) the land degradation is increasing from time to time of year. This may be due to continuous increment of population growth through time, exploitation of natural resources and poverty. According to the lemman ayetu keble representative said the factors who increase the land degradation are absences of land management polices,absences of follow land, lack of afforestation,and continuous high rainfall.

4.3.4 Mechanism to decrease land degradation

Based on the information gathered from the development agent (DA). The mechanisms to mitigate land degradation are: increasing soil and water conservation (SWC) construction of dams and terraces using sustainable land management system, implementing polices and strategies and afforestation and reforestation programs.

On the top above points the development agent has indicated the following measure should be taken to reduce land degradation. These are giving awareness' about family planning encourage farmers to use organic fertilizers (compost) ,by avoiding overgrazing ,protecting forest use of inter cropping and crop rotation mulching and decomposing residue materials like leave s , grasses etc.

4.3.5 The main consequences of land degradation analysis.

According to the data given by the experts (DA) the consequences of land degradation includes low production loss of soil fertility, loss of livestock population , low economic development , low standard living, poverty, loss of biodiversity etc . are the effects of land degradation. According to the idea of interviewed the woliso woreda agriculture development office low productivity is the main consequences of land degradation in lemman ayetu keble.

CHAPTER FIVE

5. Conclusion and Recommendation

5.1 Conclusion

The research paper has attempted to provide data about causes and consequences of land degradation in woliso woreda especial in lemman ayetu keble.The study include both males and females the respondents with the total number is 38 sample respondent from these 28 are males and 10 are females using direct interview and by using questionnaire with respondent. From the study the major causes of land degradation is population pressure in the study area .

Not only the population pressure rather the numbers of other factors facilitate land degradation activity like, over exploitation of natural resources, expansion of agricultural land, over grazing , deforestation , continuous cultivation, inappropriate land use, fragmentation of land , low awareness about land management and absence of crop rotation . from this finding the researcher can conclude that based on the analysis the major analysis, the major consequences of land degradation is low productivity, food insecurity, poverty, loss of livestock population are consequence of land degradation .

From the finding researcher can also conclude that the major causes and consequences are population pressure and low productivity respectively.

From the major finding to reduce the impacts of land degradation increasing soil and water conservation like construction of dams .planting trees, using terracing, using follow periods, to use continuous land management polices and strategies (like afforestation , reforestation) and to increase awareness of the community about the problems lands and solutions of land degradation in the study area.

5.2 Recommendation

Based on the above conclusion the following possible recommendation has been forwarded by the researchers.

To overcome the causes and consequences of land degradation the following recommendations are forwarded by the researcher.

- To use continuous polices and strategies of land management polices like afforestation, reafforestation.
- To increase the awareness of the community about the problems and solutions of land degradation.
- To conserve soil erosion and water erosion by different techniques like construction of dams , plantation of trees, using terracing using fallow periods.
- Local people to participate in planning implementation and management of land .
- Greater participation of local farmers in the identification of local land degradation issues and their remediation.
- Wood land protection and improved productivity of the livestock.
- Use of inter cropping, crop rotation and mulching by grasses , leaves and straw.
- To control population pressure by using family planning methods like contraceptive.

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APPENDIX

Wolkite university

College of social science and humanity

Department of governance and development studies

- The objective of this questionnaire interview is to gather information on the cause and consequences of land degradation in woliso woreda ,in lemman ayetu keble.
- The required to give reliable information according to listed questionnaire and interview.
- Part:I back ground of information

1.Sex A Male ☐ B.Female ☐

2.Age A.20-25 ☐ B.25-30 ☐ C.30-35 ☐ D.Above 40 ☐

3.Religion A.orthodox ☐ B.Muslim ☐ C.protestant ☐ D.other ☐

4.Marital status A.single ☐ B.married ☐ C.divorced ☐

5.Education status A.elementary ☐ B.high school ☐ C.degree ☐ D.diploma

6.Occupation A.farmer ☐ B.merchant ☐ C.daily labor ☐ D.student ☐

Party:II Questionnaire about cause and consequences of land degradation for respondents.

1.what are the main cause of land degradation?

A. continues cultivation ☐ B. fragmentation of land ☐ C.Inappropriate land use ☐ D. over population ☐

2.what are the main consequences of land degradation?

A .low of productivity ☐ B.food insecurity ☐

C .low livestock ☐ D.poverty ☐

3.what the rate of land degradation in studies area?

A.extreme ☐ B.medium ☐ C.smoothly ☐ D.no ☐

4.how it does decreasing the land degradation ?

A.afforestation ☐ B.control over population ☐ C.terracing ☐ D.appropriate ☐ land use system.

5.what the impacts of land degradation on human beings?

A.health insecurity ☐ B.migration ☐ C.low economic ☐ D.poverty ☐

6.what the effects of land degradation on natural resources?

A. air pollution ☐ B.soil erosion ☐ C.forest destruction ☐

7.is land degradation cause poverty? A.yes ☐ B.no ☐

8. question no 7 if your answer yes how?

……

……..

9.how the over population is cause to land degradation?

……

……..

10.how the continuous cultivation cause to land degradation?

……

……

11.what main factors increase land degradation?

……

……

12.what the consequence of land degradation in this study area?

……

……

……

13.is land degradation decreasing over population? A. yes B.no

If your answer is yes

how……

……

……

14.how does it decreasing land degradation?

……

……

……

……..

Interview

Part :III interview about cause and consequences of land degradation for respondents

1.What the impacts of land degradation on agriculture productivity?

2.How land degradation are affects on natural resources ?

3.What the main cause of land degradation in this studs are?

4.What the main consequences of land degradation ?

5.What the role of community or government on the land degradation?

6.How it does or methods of reduce land degradation?