JIMMA UNVERSITY

COLLEGE OF SOCIAL SCIENCE AND HUMANITIES

DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

IMPACT OF RESETTLEMENT SCHEME ON FOREST COVER AND ITS IMPLICATIONS ON CONSERVATION IN GUMAY DISTRICT OF JIMMA ZONE

By

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JIMMA, ETHIOPIA

Declaration, Confirmation, Approval and evaluation

Research Title: -Impact of Resettlement Scheme on Vegetation Cover and Its Implications on Conservation in Gumay District of JimmaZone

Declaration

I, the undersigned, declare that this Thesis is my original work, not presented for any degree in any Universities, and that all the sources used for it are duly acknowledged.

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Confirmation and Approval

This Thesis has been submitted for examination with my approval as a thesis advisor.

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Abstract

The purpose of this study was to assess the impact of resettlement scheme on vegetation cover and its implications on conservation in Gumay district of Jimma zone. The study utilized both primary and secondary data which are qualitative and quantitative in their nature. Through multistage sampling procedure, a total of 286 households were selected from the sample Kebeles of Gumay district. Data collected from 94 sampled households, Questionnaire was distributed to the sample respondents and key informants were interviewed. The collected data were analyzed quantitatively and qualitatively. The results showed that plenty of natural forests have been cut down and there are dramatic changes of climate. People cut the forest trees so as to get farm land, for charcoal and fuel wood. The settlers didn't get any training on how to keep the forest trees. In addition they were hunting animals which are the natural beauty of the area. The study concludes that agricultural sector alone cannot be relied upon as the core activity for rural households and as a means of reducing poverty, achieving food security and improving livelihoods in the study area. Thus, the researchers recommend that a comprehensive development plan that enhances successful livelihood diversification is found to be imperative and most urgent. Policies and actions directed towards improving livelihood of the resettlers' communities should focus on expanding rural infrastructures, enhancing awareness creation activities and cooperation of stakeholders to bring sustainable livelihood outcome in the area.

LIST OF ACRONYMS

CSA: Central Statics Agency

EFAP: Ethiopian Forestry Action Program

EIA: Environmental Impact Assessment

GIS: Geographic Information System

LU/LC: Land Use Land Cover

MORD: Ministry of Rural Development

NGO: Non-Governmental Organization

SNNPR: South Nations Nationalities and People Republic

UNHCR: United Nations Higher Commissioner for Refugees

WHO: World Health Organization of the United Nation

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CHAPTERONE
INTRODUCTION

1.1 Background of the Study

Ethiopia has experiences of population resettlement since 1960s either spontaneous or planned. More than half million people were resettled by the Derg government mostly to the lowland areas of western and southern parts of the country in response to the 1984/85 famine (Dessalegn 2003b).Most of the resettles were from northern highland areas where the land has been supporting relatively higher population nor long period of time and experienced serious environmental degradation. This situation coupled with the recurrent drought caused famine and food insecurity .The population resettlement was planned to ensure food security by moving the affected community to presumably more fertile areas with less population density and to relieve the population pressure in the affected areas. This resettlement program was criticized for its large social and environmental impacts involved during it implementation.

Resettlement is a phenomenon of population relocation from one geographical environment to the other either in a planned or spontaneous manner where adaptations to various system soccer(Woube 2005). It is driven by a range of push and pulls factors at area of origin and destination respectively (Tafesse 2007).

The major push factors include development projects, natural disasters(drought, food, earthquake), war, food insecurity and environmental degradation; while the pull factors include availability of unutilized land,good economic opportunities and conducive environment(Alemu 2015; Tafesse 2009; Tan 2008).

Across the world, resettlement schemes have been undertaken for various purposes. They are often supposed to facilitate the implementation of arural development policy(Evrardand Goudineau

2004). As noted by Stellmacher and Eguavoen (2011), resettlement initiatives have been employed by many African governments as a response for the mismatch of population numbers and environmental conditions. Likewise, Ethiopia has a long tradition of resettling people from drought prone and degraded areas to sparsely populated and less exploited corners of the country (Pankhurst2009). In the country, there have been population resettlement

practices during Imperial, Dergand EPRDF led governments (Mulugeta 2009; Rahmato 2003).Literature revealed that population pressures, extreme land degradation in the highland areas, land fragmentation, rampant unemployment, food insecurity, recurrent drought, poverty and famine has aggravated resettlement programs in Ethiopia since the Imperial period (Belay 2004; Tadesse 2009; Yonasetal. 2013;ZelekeandMberengwa2012).

Resettlement has been considered as a viable development strategy to bring a lasting solution to the continual impoverishment and destitution of Ethiopian rural communities (Temesgen2010). Despite of this fact, sources showed that resettlement can result in multifaceted impacts on the socio economic condition of the resettled communities as well as on environmental resources of the receiving areas (Dejene2003;Getahun et al.2017;Tan and Yao 2006;Vanclay 2017;Wilson2019). Global studies on resettlement-environment interactions provide mixed outcomes.

In some cases, despite population growth following resettlement, limited environmental degradation was observed; while in other cases, resettlement was associated with deforestation and degradation of the environment (Lemenihetal.2014). Poorly plan needs resettlements chime have adverse effects on bio-physical resources as well as on socio-economic aspects of the people (Woube 2005). In Ethiopia, population relocation causes ecological deterioration and severe resource depletion due to uncontrolled encroachment for settlement and farmland expansions (Berhanuetal. 2016; Wayessaand Nygren 2016). The emerging settlers‟ need of cultivable land and residential area in tensifes the conversion of vegetated lands into cropping, grazing and settlement areas(Mulugeta and Woldesemait 2011).

Most resettlement programs carried out in Ethiopia during the past and present exerts pressure on resources of the environment due to insignificant consideration for resource management, absence of feasibility studies as well as poor consultation with settlers and host communities (Pankhurst and Piguet 2004; Walle et al. 2011; Walo 2012). Tus, resource degradations are common in different resettlement areas of the country (Kassie et al. 2014). Ethiopian government has carried out large scaleintra-regional resettlement programs in four regional states of the country(Amhara,

Oromia, Tigray and SNNPR)in2003to attain food security for 2.2 million chronically food in secure people(Hammond2008).The programs are carried out in different areas of the four regions. Gumay resettlement site is among the sea reas that hosted large number of settlers in Oromia Regional State. Prior to the resettlement program, the area was covered by dense forests, grasslands and woodland vegetation and it has immense potential of vegetation resources. However ,resettlement was undertaken in the area without due consideration of the natural resource eissues. Particularly, the program lacks Environment al Impact Assessment and management plan for the sustainable utilization of the resources. As aresult, large areas which were under forest cover are cleared and converted to other land use/cover types. Besides, deforestation, uncontrolled farmland and settlement expansion, forestfire, unwise use and indiscriminate cutting of trees are the major observable problems in the area. Consequently, there has been vegetation cover dynamics or spatio-temporal vegetation cover change since the execution of population resettlement in the district. There are many studies that have been conducted in Ethiopia regarding resettlement issues.

However, most of these studies were focused on the socio-economic outcomes, planning and implementation process, while the impact of resettlement on natural resources of the environment received little research attention (Adugna2011; Belay2004; Fratkin2014; Pankhurst2005; Woldeselassie2004; Zeleke and Asfaw2014).Similarly, despite the aforementioned problems in Gumay district, less attention has been given on evaluating how the current intra-regional resettlement has impacted on forest resources of the area. The purpose of this study is, therefore, to analyze impact of resettlement scheme on forest cover and its implications for conservation using a combination of GIS and remote sensing techniques as well as socio-economic data to pin point appropriate management intervention strategies in the area.

1.2. Statement of the Problem

Resettlement initiatives have been employed by “many African governments to respond to the mismatch of population numbers and environmental conditions inter alia, to cope with land scapes which could not sufficiently nurture their inhabitants” (Steelmaker and Eguavoen2011:1).In Ethiopia, the majority of the population lives in rural areas and is vulnerable to chronic food in security. This is mainly due to drought, low agricultural output,

high population pressure and deteriorating ecological conditions that lead to severe resource degradation. Agriculture is the main Source of livelihood for over 80 percent of the population. However, its lower contribution to GDP (lessthan 50 percent)reflects the low productivity of the sector(Thomas, Diao andRoy2009:2).

Resettlement has been conceive dasaviable solution to the continual impoverishment and destitution of Ethiopian rural communities. However, it has considerable impacts on natural resources of the environment at

destination areas. This study will be carried out to evaluate

impact of resettlement scheme on vegetation cover and its implications on conservation in Gumay district of Ethiopia The government resettlement programmer document(FDRE2003b:1–

5) states that the new resettlement programmer fully recognized the past mistakes and promised to correct them. However, there is no evidence confirming that these mistakes are avoided and the basic principles set by the government are implemented as planned. It is also not clear whether the programmer was voluntary, well-planned, and whether the host communities were fully consulted. There was no

Evidence whether there settled house holds secured food and improved their live lihoodsona sustainable basis.

Many researchers conducted their studies similar to this title. For instance, Derjew Yilak1 and Daniel Getahun Debelo conducted their research on the title "Impacts of human resettlement on forests of Ethiopia: The case of Chamen-Didhessa Forest in Chewaka district, Ethiopia "the result show that The major causes for the forest cover reduction after the settlement were clearing of forest for farmland expansion, forest burning, cutting of trees for firewood, charcoal production and construction wood and logging. Terefe Zeleke, conducted is thesis with the title 'The Contribution of Rural Resettlement to the Livelihoods of Settlers in Ethiopia: A Case of Essera District Resettlement Schemes in SNNPR. The result indicate that the integrated intervention of all concerned bodies is indispensable to reverse the problems related with resettlement and to enhance the diversification of income sources to settlers to build their livelihood assets in sustainable manner.

Though there are studies on resettlement planning and implementation, to what extent the

resettles developed assets (physical, social, financial, human and natural) and secured their livelihoods is not known.

It seems that the resettlement programmer is affecting the environment negatively because itis easily observed that deforestation, overgrazing of lands, etc. are problems in Ethiopia particularly in the resettlement areas which recur from time to time.

Therefore, this study aims to fill

These knowledge gaps and investigate how the planned resettlement programmer is affecting the live lihoods of resettles in a sustainable way.

1.3. Objectives of the Study

1.3.1. General Objectives

The General objective of this study was, to analyze impact of resettlement scheme on forest cover and its implications for conservation

1.3.2. Specific objectives of the study

In line with the general objective, the following specific objectives were centers of the research.

- To Assess the change of the forest cover in yacht resettlement site
- To identify the main factor of forest clearing in the study area.
- To identify measures under taken by concerned bodies in order to mitigate forest cover change impact of resettlement scheme

1.4. Research Questions

- What are the change happened to the site during pre and post resettlement periods
- What environment al impacts are being occurred in Yachi resettlement site due to there settlement scheme?
- What are the implications of the resettlement program to the study site?

1.5. Significance of the Study

Resettlement programs suffer from non-detailed pre-resettlement survey, in adequate supplies of inputs, and hasty implementation practices. In connection with this the study supposed to have lots of importance for different bodies. Such as:

- the resettlement requires adequate pre- resettlement survey including socio economic and physical survey, particularly, the planning and evaluation of environmental situation.

- The research canal so contribute to minimize the knowledge gap between resettlement as a strategy and resettlement as a practice.
- The resettlement schemes in Ethiopia lacked environmental considerations. Therefore, the outcomes of this study could be used as an important indicator for decision makers to make environmental impact assessment for possible future resettlement programs.

1.6. Scope of the Study

First, this study delineates its scope only to Gumay Woreda, Jimma Zone, from all the kebeles in the Woreda, Yachi kebele was selected. Which is found in south west of the country, and which on the distance of 405 km from Addis Ababa, the capital city of the country Based on the increasing number of resettlement to the kebele, the research discussed the impact of resettlement scheme on forest cover and its implications for conservation. As the study was intended to get an in-depth assessing the causes of the result, it cannot be recommended to other kebeles.

1.7. Organization of the study

The total presentation of the thesis includes five separate but connected chapters including this introductory chapter which gives background information about the study. The Second chapter introduces the study in the context of existing literature on the impact of resettlement scheme on vegetation cover and its implications on conservation. It explain show the objectives can be achieved using remote sensing as a tool along with the major procedures and software required. It also includes a review of several studies done in the areas along with important findings and gaps of knowledge that need further research, which further guides us to formulate the purpose of the study and central questions to be answered. The Third chapter describes the biophysical characteristics of the study area, sources and methods in collection of primary and secondary data, major approaches followed during analysis of both spatial and socio-economic data. Chapter Four presents the core findings of the study derived from analysis of all available data and discusses the major findings of the study with reference to existing knowledge, and relates them to the objectives, central questions and overall framework of the study. Finally, chapter Five presents concluding remarks and implications of the major findings in addressing prevailing challenges in the target areas and also presents issues for further research.

CHAPTER TWO

2 REVIEW OF RELATED LITERATURE

2.1. The Definitions and concepts of resettlement

Different authors define resettlement in different ways. Therefore, in this paper the definition of "Resettlement" is the movement of people from areas where there is no existing factors that are suitable for smooth maintenance of life to areas presumed to be endowed with potentials that could provide opportunities for the same end (Kassahun, 2000). As it is indicated in the same source the destination of resettlement is to areas with under-utilized agricultural potential, and movement could take place either as a result of planned/organized intervention or spontaneously.

Mengistu (2005) defined resettlement as the process by which individuals or group of people leaves spontaneously or un spontaneously their original settlement sites to resettle in new areas where they can begin new trends of life by adapting themselves to the biophysical, social and administratively stems of the new environment. Resettlement is becoming attractive as a way out of pressing problems caused by food shortage, land fragmentation, population pressure, rampant unemployment, marginality of land and decline in productivity(Chambers,1969).

Therefore, resettlement is a complex process that involves complicated combination of social, economic and political factors that renders the outcomes. The process involves a range of factors with constructing and contradictory view often resulted in tensions and conflict among the resettles and host community on natural resource use. Let alone improving the economic conditions of the displaced population, the past and different sources of literature explained resettlement is costly and risky activity which often fail store full social and economic cost of the resettlement (Pankhurst, 2004).

Resettlement could be classified into four types within two main categories. The first category isnon-planned resettlements comprising spontan eousre settlement and emergency or forced resettlement. The second category is planned resettlements which comprise voluntary and involuntary resettlements (Mengistu, 2005).Usually, planned resettlements are those initiated and /or supported by governments and aid agencies.

Planned resettlement projects have been undertaken with aim of relieving population pressure and promoting land consolidation and sound agriculture in areas of high population density(World Bank, 1978 as cited in Descaling, 2003a). It may be undertaken as a form of compensation for displaced populations whose lands have been utilized for development projects such as dams, national parks, etc (Colson,1971ascitedin Descaling, 2003a). Similarly, settlements have frequently been planned to rehabilitate populations that have been adversely affected by natural disasters unfavorable climatic conditions and/or political conflict (Dessalegn, 2003a). Others call these displaced people because of natural calamities as environmental refugees.

However, for this study two important types of resettlements were convenient. These are voluntary and induced-voluntary resettlements: Voluntary resettlement: occurs when the migrants have the power to make informed and free relocation decisions and the willingness to leave their original place. Induced-voluntary: movement takes place when people leave their home place to resettle elsewhere due to deliberate acts of inducements coming from outside agencies. Although the migrants may maintain decision-making power, the facts on the basis of which their decisions are made are provided and analyzed by other agencies

Spontaneous resettlements are those resettlement types that are accomplished by desperate movement of people from place of origin because of push factors (land scarcity, recurrent drought, loss of productivity due to land degradation) to new settlement areas with better potential to sustain life/pull factors (availability of un colonized and productive land)(Mengistu,2005).

2.2. Resettlement experience of Africa

The African continent is the scene of massive population resettlement processes of all types, including painful involuntary displacements of people. Currently, however, Africa's most important forced displacements are not those caused by development programs, but those triggered by social and political causes such as civil wars, ethnic, racial and/or religious persecutions, or by natural causes such as droughts and famines. These result in millions of refugees - either "international refugees" who cross international borders to find protection, shelter and food in another country, or "internal refugees" who still remain within the borders of their countries but have abandoned their houses and lands.

Displaced populations are not only themselves deprived of normal livelihood and pushed to the limits of poverty and starvation, but often represent an enormous burden on the host populations, thus compounding the complexity of the displacement-triggered problems.

They may lower the hosts' standards of living and tend to rapidly deplete the natural resources of the areas of refuge (Cernea, 1993). In Africa, planned resettlement has been tried in countries as diverse as Kenya, Tanzania, Sudan, Ghana, Senegal, Burkina Faso, Egypt, and Ethiopia. While several of these schemes did in fact improve the wellbeing of participants, in general terms these efforts have fallen short of expectations. The expectations themselves may have been unrealistically high in many cases, given the resources available.

2.3. Ethiopian resettlement experience

a) Resettlement during the imperial period

As it is the case in different place in the world, people have been gradually and spontaneously drifting from stressful to more congenial areas in Ethiopia in search of better natural resources, security and hospitality. State-sponsored population resettlement schemes have grown in importance in the past forty years in Ethiopia. Resettlement schemes during the Imperial Period involved only 20,000 households (Feleke, 2004). In imperial times, resettlement became part of government planning from 1966 with establishment of the Ministry of Land Reform and Administration (Feleke, 2004).

Following this event, thousands of settlers were moved to several dozen schemes, mainly set up on the initiative of local governors, missionaries or NGOs. The type of settlers varied, and included urban unemployed, pastoralists, ex-soldiers and famine victims. The projects were set up with ambitious economic, social and political objectives: to deal with famine, provide land to the landless, increase agricultural production, introduce new technologies, establish cooperatives, remove urban unemployed, stop charcoal burning, settle pastoralists and shifting agriculturalists, form defense on the Somali border and repatriate refugees.

Regarding planned resettlement, however, Ethiopia has begun to practice population relocation most notably since 1958 when the Imperial Government (1930-1974) established the first known planned resettlement scheme in the present day SNNP Regional State (Cernea; 2000). The first planned settlement scheme in the country was the Abella and Belle settlements, later on called the Welayita Agricultural Development Unit (WADU), started in 1958, aimed at resettling

'surplus' population from overcrowded Welayita high lands and subsequent other similar areas to bring under cultivated lowland area in Sidamo region that were in only marginal use for hunting and grazing and to which there was no strong traditional claims (Cernea, 2000).

It was also designed to achieve specific and limited objectives. At that time, state-sponsored-resettlement was largely undertaken to promote two objectives though failed to meet any. The first of these was to rationalize land use on government owned land and thus raise state revenue. The second was to provide additional resources for the hard pressed northern peasantry by relocating them to the southern regions. However, the results were generally poor. The schemes failed and most settlers left the project. This was because of inadequate planning, inappropriate settler selection, inadequate budgetary support, and inexperienced planning and executive staffs (Pankhurst &Piguet, 2004).

b) Resettlement during the derg regime

It was during the Military Government (Derg) (1974-1991) that intensive and widespread resettlement schemes took place in Ethiopian history. Derg argued that the major objective of the program was to promote economic development and improve the living standards of the rural people. Specifically it aimed to ease the tension of farmland scarcity in central and northern parts of the country, combat drought, avert famine, and increase agricultural productivity. Initially, it insisted the resettlement program as purely voluntary and only a mechanism to organize the haphazardly drifting population in huge quantities from overworked and drought-stricken areas to more fertile and sparsely populated ones. However, practically the implementation of the program seemed to have the characteristics of forced or compulsory-voluntary relocation. Derg implemented it forcefully and even on quota bases without the consent of the potential resettlers (Ofcansky; 2002).

Similarly, the military government of Ethiopia resettled more than half a million settlers because of the incidence of famine in 1984/85 mainly from the North, notably Wello, Tigray and Shewa, to areas to the west, especially Wellega, Kafa, Illubabor and Gojjam. Though the resettlement was intended to be voluntary and a large proportion of settlers were famine-victims, targets were turned into quotas, food-aid was used as a trap, and coercion and victimization became common place. Two kinds of planned settlements were set up: large-scale 'conventional' mechanized collectives in the lowlands on the western border, and small-scale 'integrated' settlements in the highlands, reliant on ox-plough cultivation. (Ofcansky ; 2002).

Then, the government set in motion a resettlement policy that was initially designed to relocate 1.5 million people from areas in the north most severely affected by drought and famine to areas in the west and south that had experienced adequate rainfall. The government claimed that it was carrying out the program for humanitarian reasons, contending that it would remove the people from exhausted and unproductive land and place them in settlements with rich agricultural potential.

In addition, the government argued that the new settlements would greatly facilitate efforts to provide social services. However, practically the implementation of the program seemed to have the characteristics of forced or compulsory-voluntary relocation. Derg implemented it forcefully and even on quota bases without the consent of the potential resettles (Ofcansky&LaVerle, 2002).Gebre (2004) clearly indicates the forceful mass dislocation practices to the extent of compelling the potential resettles from market places and farms and sending them off collectively to the new areas where they had no prior information.

At the new areas, (for example, *Beles* Resettlement Scheme) they had been deprived of their basic human rights, such as freedom of movement and social gatherings, thinking that the resettles may get away. The then government viewed resettlement program as a way out of the pressing problem of famine. It was proposed that the food security crisis would be addressed in a durable way through a dual strategy of relieving population pressure in the highlands, which were perceived as chronically drought prone, over populated and environmentally degraded, and, on the other hand, of making lowland areas, which were perceived to be fertile, under-populated, under-exploited and more productive.

c) RESETTLEMENT during EPRDF government

Regarding the current government-sponsored resettlement situation in Ethiopia, the Federal Democratic Republic of Ethiopia (FDRE) was initially reluctant to consider resettlement as a viable option for development (Alula, 2009). However, the occurrence of a severe drought in the early 2000s and the resultant food security crises has initiated the government to launch intra-regional resettlement (also known as access to improved land) program.

The EPRDF government also planned for resettlement program to relocate 2.2 million people in response to the drought and famine occurred in 2000/01. The objective of the scheme remains similar to that of the Derg i.e. ensuring food security. The resettlement scheme planned recently by EPRDF government is believed to involve minimum environmental impacts contrary to past

resettlement programs. (Alula, 2009).

It seemed that planned resettlement was suspended in the years following the downfall of the Derg regime. However, the EPRDF government appears to be increasingly enthusiastic and in favor of launching planned resettlement schemes during 2002/03. The plan envisages relocating over 2 million people within 3 years' time. The basic assumptions behind the current resettlement program remain similar to those made during previous periods. But the later program is essentially different from the preceding ones in the following respects (Kassahun, 2003: Feleke, 2004).It would be based on free consent and willingness of resettles and it would be implemented at intra-regional level there by ruling out possibilities of massive movement from one region to another, resettles retain their land use rights and other immovable properties in the original home villages for about 3 years after being relocated and resettles can return to their original villages for good whenever they have change of mind.

According to (MORD, 2003), the initiation of the voluntary intra-regional resettlement (access to improved land) rests on four major pillars that are important to avoid problems: those are, the program should be based on voluntary option of the potential settlers, the availability of underutilized land. The survey conducted shows a total of 1.million ha.of land is available in Amahara, Oromia, Tigray and SNNP regions, Consultation with the host communities. The regional governments have to hold discussions with host communities on the necessity of the program and lastly proper preparation before implementation of the program. The minimum infrastructure set in the plan should be in place before moving people.

The document further states the government initiated a pilot resettlement program during 2000/01. This was carried out in response to the disparate movement of people to forests and national parks from hard-hit areas. Accordingly 45,000 households were resettled voluntarily in Amhara, Oromia and Tigray regions in the year 2002/03. This pilot project motivated the government to plan and implement large-scale resettlement program. (Kassahun, 2003; Feleke, 2004).

The main objective of the program at its commencement was to enable up to 440, 000 desperate and chronically, food insecure rural households attain food security in the cost of slightly over 2 million US Dollar (FDRE, 2003). It has then become key components of development strategy documents such as the Federal Food Security Strategy (2002), Sustainable Development and Poverty Reduction Program (MoFED, 2006), Rural Development Policy and Strategy (MoFED,

2010), New Coalition for Food Security Program (FDRE, 2004), Plan for Accelerated and Sustained Development to End Poverty, (MoFED, 2006) and Growth and Transformation Plan (MoFED, 2010).

d) Resettlement in Oromia Regional State

Like other regions, chronic and frequent food shortage of varying degree is becoming prevalent at different times and provoked large-scale state-organized resettlements programs. Among the zones found in the region Borena, Eastern and southeastern part of Bale, East and West Hararge, North and Eastern extremes of Arsi, some parts of North Shewa and some pocket areas of Rift valley of Eastern Shewa are affected by food insecurity problems. 44 *Woredas* found in these areas were identified as severely food insecure areas and nominated for various development interventions, resettlement among others, as part of Regional Food Security Program (ONRG, 2001).

The pre-settlement feasibility study identified Illubabor and West Wellega zones of Oromia Regional State as potential areas for resettlement. The two zones have eight potential resettlement sites with total of 23,700 ha. Chewaqa resettlement site is not among the sites for which feasibility study was carried out. According to official reports of MORD, (2003) about 100,000 people were planned to be resettled in the Region to areas where population density is relatively low and unutilized land is available.

2.4. Impacts of resettlement in Ethiopia

The large scale resettlement program during the Derg regime has been criticized for a number of problems. First, consultation between policy makers, implementers, the resettles and the host population was minimal. Second, high handedness in implementing plans entailed resettlements often quelled through coercive methods, which thus undermined possibilities for commitment. Third, the resource and socio-economic support necessary for encouraging the chances of meeting the stated targets were not optimally united and disorganization and confusion was the result (Kassahun, 2003). In general, impact of resettlement could be classified in to two major categories-social and environmental impacts.

2.4.1. Social Impacts of Resettlement

Many studies have been carried out concerning the social impacts of resettlement in Ethiopia. Resettlement can cause many social impacts, especially if the ethnic and cultural composition of the resettles is heterogeneous. Wolde-selassie (2004) reported that the impacts of resettlement in Metekel

carried out in 1980s involved several social impacts. Primarily, the scheme disintegrated the resettlers' social institutions and organizations, which bind their infinite web of relations and interactions in manifold. The author also stated that resettlement program disrupted the resettlers' production systems and impoverished their livelihood. As a result uncertainties and confusions may happen until painful adaptive adjustments may occur to the new environment. Resettlement can also bring about break-up of families. The 1980s resettlement in Ethiopia caused many families to be broken. The schemes were carried out in lowland areas where the climate is completely different from their original homeland. As a result they experienced difficulties since the new climate is less hospitable that led to excessive mortality due to diseases. They were also suffering from increased control to prevent escape. Village to village travel was only possible through pass letters obtained from village authorities. The scheme has also taken away traditional resources of the indigenous host communities that affected their livelihood because their lives are mainly based on shifting cultivation, hunting, fishing and honey collection, Similarly, Descaling (2003b) reported that settlers experienced hardships due to changes in environment and diet. They were also subjected to lowland diseases such as malaria and trypanosomiasis. Therefore, the scheme claimed the lives of many peoples. In larger settlements settlers resented imposed collectivization. Although in some cases partnerships were formed with local people, in many areas settlers faced hostile relations with indigenous inhabitants. Ahmed (2005) reported that the host community particularly the youth started to develop negative attitudes as they view resettles as competitors over the use of natural resources.

2.4.2. Environmental Impact of resettlement

Planners sought to justify resettlement on the grounds that it would provide lasting solutions to the problem of food insecurity of the affected households. In fact, even if most settlers had remained in the resettlement areas, the removal of an overall average of 3% of the population in 1980s in the north would have had a negligible effect on reducing population pressure because the resettles abandoned the scheme and returned to their home areas. Resettlement was also claimed to provide a more rational use of available land, by readjusting man-land ratios. However, this assumption rested on the myth of vast underutilized lands. Different source indicate that resettlement schemes in Ethiopia, both planned and spontaneous, involved environmental impacts.

Accordingly, Descaling (2003b) reported that government sponsored resettlement programs that were carried out during 1984/85 involved considerable environmental damage by clearing large areas of vegetation to build homesteads, to acquire farmland, and to construct access roads. He also indicated that the scheme failed to adapt farming practices to agro-ecological conditions of the lowlands, and

as a consequence the environmental damage involved was quite considerable. Likewise, spontaneous resettlement/migration of people from drought-hit areas of Hararghe and Arsi zones to Bale zone of Oromia Regional State may have also caused environmental damage to the new area. The reasons for their migration first and foremost results from years of cumulative effects and sufferings from gradual and consistent natural resource degradation in their home areas and secondly triggered and initiated by recurrent drought conditions that made their livelihood conditions to be below subsistence which allowed them neither survival nor livelihood improvements.

In other words: for most of the people who decided to leave their homes in Hararghe and Arsi lowlands, the conditions did not leave them with any other alternative or option. The migration was intensified in May 2002 and most of the resettles have settled in Mana Hangatu, Berbere and Gololcha *woredas* of Bale Zone. Some parts of these areas fall in Bale mountains National Park and the impact on the wildlife and their habitat was considerable. Until the end of October 2002, 20,093 people were registered by the respective *woredas*. The number could be more because the flow of people arriving continued despite the regional government trial to stop these

migratory movements (Dechassa, 2002). The Government claims that such disparate movement of peoples initiated the pilot resettlement projects after which large scale resettlement schemes were planned to organize such movements.

2.5. Conceptualizing Resettlement versus Environment and Climate Change

According to UNHCR (1993), the reared four core causes of hum and is placement worldwide. The sear political instability, economic tension, ethnic conflict, and environmental stress In this section, a brief discussion will be made nonissue related to environmental stress and climate change seeing that the case of resettles under investigation in this study mostly relate to these matters Globally, environmental degradation and climate change has caused population displacement since time in memorial. Historically, people have had to leave their habitual residence because the environment has been worn-out and the change of climatic condition overtime has disastrously influenced their lively hoods.

Likewise, the adverse consequences of environment and climate change appear to be among the vital causes of food insecurity and resultant human displacement in Ethiopian history. People in Ethiopia have gradually and spontaneously deserted stressful environments and drifted to more secure are ass in time immemorial. Even presently, some physical environments are changing in to unfavorable circumstances making human population more

vulnerable to socio –economic and environmental stresses that in turn resulting massive population displacement like the resettles under investigation in this study.

The concept of environmental evacuee was firstly described by Essam El-Hinnawi (1985), cited in Bates (2002),as:"…those people who have been forced to leave their traditional habitat temporally or permanently because of a marked environmental disruption(natural and/or triggered by people) that jeopardize their existence and/or seriously affected the quality of their life." Bates (2002)criticizes the above El-Hinnawi's account for not providing generic criteria to distinguish those people migrating due to environmental issues and those due to other reasons. Moreover, Bates rebukes El-Hinna wifor not specifying differences between types of environmentally displaced peoples. Consequently, he proposed three classification so environment-induced resettlements, based on the characteristics of basic causes of displacement. These are disaster-induced, expropriation-induced and deterioration-induced displacements. Bates' proposal could be considered as a crucial theoretical framework against which case studies, like that of *Non no* resettlement schemes could be measured up.

2.6. The Current Approach to Resettlement in Ethiopia

As clearly discussed here in before, the Federal Democratic Republic of Ethiopia embarked on planned intra-regional resettlement programin2003under four major pillars(voluntarism, availability of underutilized land, consent with the host and resettle community, and preparation at receiving areas)and numerous nice-looking(good-looking)guiding principles (FDRE,2003).Moreover, the program targets only relatively impoverished resource-poor small-holder rural households who are 'entirely volunteer' to resettle somewhere in their respective region without any external pressure or manipulative mechanisms. Some academia (Desalegn, 2004; Alula, 2009),however, argue that the current resettlement scheme is rather devious, costly, wasteful, hastily undertaken, and lacks public consultation.

In order to make the resettlement scheme fair, free and triumphant, Resettlement Task Force was setat all administrative levels to accomplish everything related to resettlement schemes. At all levels the heads of administration chair the committees. Additionally, technical committees were formed at different levels responsible for the assessment of the technical a spects of planning and implementation. Intensive awareness creation activities are required to be

accomplished both in the sending and receiving areas to orient and convince both the resettlers and hosts about the worth in ess of the program. The expense of the program is covered by the Ethiopian government

Alone as donors are reluctant in funding the program in fear of the possible human and environmental crises.

2.7. Population Growth versus Resource Use

In Ethiopia, population pressure is inducing, the clearing of forests for agriculture and other purposes, and the attendant accelerated soil erosion, is gradually destroying the soil resource(Hurni, 1990). This is because natural forests are the main sources of wood for fuel, construction and industry, even though plantation forestry is also increasingly becoming important. It is clear that increasing population is causing environmental changes in the country in general and in the Yachi resettlement site in particular.

The trend of shifting from natural forest cover in to farmland was considered as a result of resettlement in the study area. This is because of majority of population dependent on agriculture rather than other economic activities or sectors.

2.8. Studies on the Environmental Impacts of Resettlement in Ethiopia

The 1984/85 resettlement program engender massive destruction of the country's forest resources and introduced intensive highland agricultural techniques in areas which have delicate soils calling for low population densities and the practice of shifting agriculture .In this connection, it is interesting to note that the government's effort to tackle the problems of land scarcity, famine, and ecological degradation in the highlands has resulted in the spread of these problems to regions which were previously unaffected (Cohen and Isaksson, 1988; Dessalegn,1988;Getachew,1989;Mengistu, 1999; Wolde-Selassie, 2002; Dessalegn, 2003; Alemneh, 1990; Teketel, 1998; Gebre, 2003ascitedonKassa, 2004).

According to Mekuria (2005), who studied Shomba and Michity resettlement areas in Kafa Zone, demonstrated that the general land use/land cover change patterns decreased dramatically in vegetation cover (especially the natural forest and the wooded grassland), while area cover of cultivated land and settlements have progressively increased between 1967 and 1987 in both areas. This shows that some major socioeconomic changes had taken place between 1967 and 1987 that altered the LULC of the in this areas.

Spontaneous resettlement/migration of people from drought-hit areas of Hararghe and Arsi zones to Bale zone of Oromia Regional State have also caused environmental damage to the resettlementnareasinrecentyears.TheresettlerswererelocatedinManaHangatu,BerbereandGololcha woredas of Bale Zone in which some parts of fall in Bale mountains National Park and the impact on the wildlife and their habitat was also considerable (Dechassa,2002).

The current resettlement programs launched during2002/03were suspected of environmental damages. The resettlement was experiencing extensive destruction of woody plants by small holder farmers for house construction and agriculture, consumption and selling of fuel woods (Getachew,2005). Assefa(2005), as cited on Berhanu (2007), also investigated that ,the recent resettlement programs conducted in different parts of the country may have involved environmental damages despite differences in scale which includes huge loss of natural forests with great impact on sustainability of the environment contrary to what has been set out in the implementation manual of the scheme.

Similarly, the reset lament program has resulted in large damage to the natural forest of the resettlement areas as well as the killing and fleeing of wild animals. About 5613.7 hectares of forestland in Haro Tatessa resettlement site was removed due to the resettlement program. The study also states that some of the damages caused on forest and wild animals are not easily reversible, even may lead to extinction of some species(Ahmed,2005).The Woodland in Chewaka resettlement area in Bedele Woreda of Illubabor zone hass hrunk by 42.4 percent after the resettlement of people (Berhanu, 2007)

2.9The historical background of resettlement in Ethiopia

As it could the case elsewhere in the world, people have been gradually and spontaneously drifting from stressful to more congenial areas in Ethiopia in search of better natural resources, security and hospitality since time immemorial. The drift had been from the north to the south to less populated areas (Federal Democratic Republic of Ethiopia (FDRE), 2004). Regarding planned resettlement, however, Ethiopia has begun to practice population relocation most notably since 1958 when the Imperial Government (1930-1974) established the first known planned resettlement scheme in the present day SNNP Regional State (Cernea, 2000; Gebre, 2004/09; Fosse, 2006).

Resettlement schemes during the Imperial Period involved only 20,000 households (Feleke, 2004). It was also designed to achieve specific and limited objectives. At that time, state

sponsored-resettlement was largely undertaken to promote two objectives though failed to meet any. The first of these was to rationalize land use on government owned land and thus raise state revenue. The second was to provide additional resources for the hard pressed northern peasantry by relocating them to the southern regions. However, the results were generally poor. The schemes failed and most settlers left the project. This was because of inadequate planning, inappropriate settler selection, inadequate budgetary support, and inexperienced planning and executive staffs (Pankhurst &Piguet, 2004).

It was during the Military Government (Derg) (1974- 1991) that intensive and widespread resettlement schemes took place in Ethiopian history. Derg argued that the major objective of the program was to promote economic development and improve the living standards of the rural people. Specifically, it aimed to ease the tension of farmland scarcity in central and northern parts of the country, combat drought, avert famine, and increase agricultural productivity. Initially, it insisted the resettlement program as purely voluntary and only a mechanism to organize the haphazardly drifting population in huge quantities from overworked and drought-stricken areas to more fertile and sparsely populated ones. However, practically the implementation of the program seemed to have the characteristics of forced or compulsory-voluntary relocation. Derg implemented it forcefully and even on quota bases without the consent of the potential resettlers (Ofcansky&LaVerle, 2002). Gebre (2004) clearly indicates the forceful mass dislocation practices to the extent of compelling the potential resettlers from market places and farms and sending them off collectively to the new areas where they had no prior information. At the new areas, (for example, Beles Resettlement Scheme) they had been deprived of their basic human rights, such as freedom of movement and social gatherings, thinking that the resettles may get away.

Derg resettled 38,8l8 households by l976 in 88 resettlement sites. By l982, there were 112 planned resettlement center inhabited by more than 120,000 resettlers. During the ten-year development plan period (1984-1994), Derg planned to relocate 115,000 peoples. Two months later, however, the government revised its plan and announced to resettle about 300,000 famine victim households (equivalent to 1.5 million peoples) from the most severely affected northern parts of the country to areas in west and southwest that had adequate resources and rainfall (Getachew, 1989; Gebre, 2009). One should note here to what extent it was haphazard and hasty. Of this, the government managed to resettle about 600,000 people (Mberu, 2006), Alula (2009)

says 627,000 people, as of 1986 to three settlement areas. More than 250,000 displaces went to Wollega; about l50, 000 were resettled in Gambela, and over 100,000 resettlers went to Pawe (Gebre, 2004 says 82,000) in the present day Benishangul-Gumuz National Regional State. In addition, another 78,000 resettlers went to Kafa, Shewa, and West Gonder (Ministry of Agriculture and Rural Development /MoARD/, 2009).

2.9.1 Policy Issues

The environmental policy of Ethiopia recognizes control and monitoring tool and ensuring Environmental Impact Assessment in development programs of the country. Other supportive legislations such as Environmental Impact Assessment proclamation no 299/2002 states that "... no person shall commence implementation. of any project that requires environmental impact assessment as determined in the directive..." without providing EIA document to the pertinent agency and getting permit. The country also approved CBD (Conservation of Bio-Diversity) to sustainably manage and utilize biological resources.

As the efforts to control deforestation in Ethiopia is concerned, the Forestry Conservation, Development and Utilization Proclamation number94of 1994 is the current policy statement that governs the management and conservation of forests in the country(EFAP, 1994). The proclamation states that sustainable utilization of the country forest resource is possible through the participation of people and benefits sharing by the concerned communities. The proclamation recognizes three types of ownership: state forests, regional forests and private forests. Additional issues such as formulation of land use and forest policies are also important to consider since the country lacks such policies to enforce the proclamations. Therefore the effort of conserving and sustainable utilization of the resources is difficult without policy frameworks to enforce the proclamations.

According to environmental impact assessment (EIA) Proclamation No. 299/2002 development projects or public instruments (policies, programs, and plans)have to be subjected to EIA scrutiny. It means that EIA is a legal requirement for development projects and public instruments to be implemented. Accordingly, MORD (2003) states that Environmental protection Authority is responsible to carry out Environmental impact Assessment of the recent resettlement program before implementation to minimize the environmental impacts encountered during the last resettlement programs.

Environmental Impact Assessment (EIA) is the process to identify and evaluate the likely

environmental impacts of proposed project, new program, plan or policy taking in to account inter related socio-economic, cultural and health impacts, both beneficial and adverse. EIA has the ultimate objective of providing decision-makers with an indication of the likely consequences of their decisions. The resettlement programs carried out in 2002/2003 are based on field reports of short term feasibility studies despite MORD, (2003) states that the Federal environmental Protection Authority should carry out EIA.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Description of the Study Area Location

The study area is located in the northwestern direction from Jimma town at a distance of 75 kilometre and 405 kilometre from Addis Ababa. The Gumay Woreda is bodered by Gera in the South, Sentema in wesst The study area is located in the northwestern direction from Jimma town at distance of 75kilometre and, Gomma in the East and Dembi Woreda in the north.

The astronomical location of Gumay woreda is found between 7° 56′ 30″ N-8° 17′ 0″ N latitude and 36° 31′ 0″ E-36° 43′ 0″ E longitude.

A survey of the land shows that Gumay woreda has an istimated area of 44,125hectar of which 11,655hectar of cultivable land 4451hectar of pasture,5925 hectars of forest land,11,023 hectars were under annual crop and about 10,271hectars were swampy and 900hectars were an usable.

Gumay woreda has 91km of weather road, with an average road density of 25.3km per 1000 kilometre square(Gumay woreda Tourism Bureau,2016).

Climate The total area of the woreda is 44,225hectars of land, among that 27% flat,70%slop and 3% mountains. The altitude of Gumay woreda ranges from 1,450metres to2,280metre a.m,s.l. This woreda experiences kola and woina dega climatic conditions. The mean annual rain fall of the area ranges from 1100mm to 2200mm and annual average temperature ranges from 17 to 20 centgrade (Gumay woreda Tourism Bureau,2016).

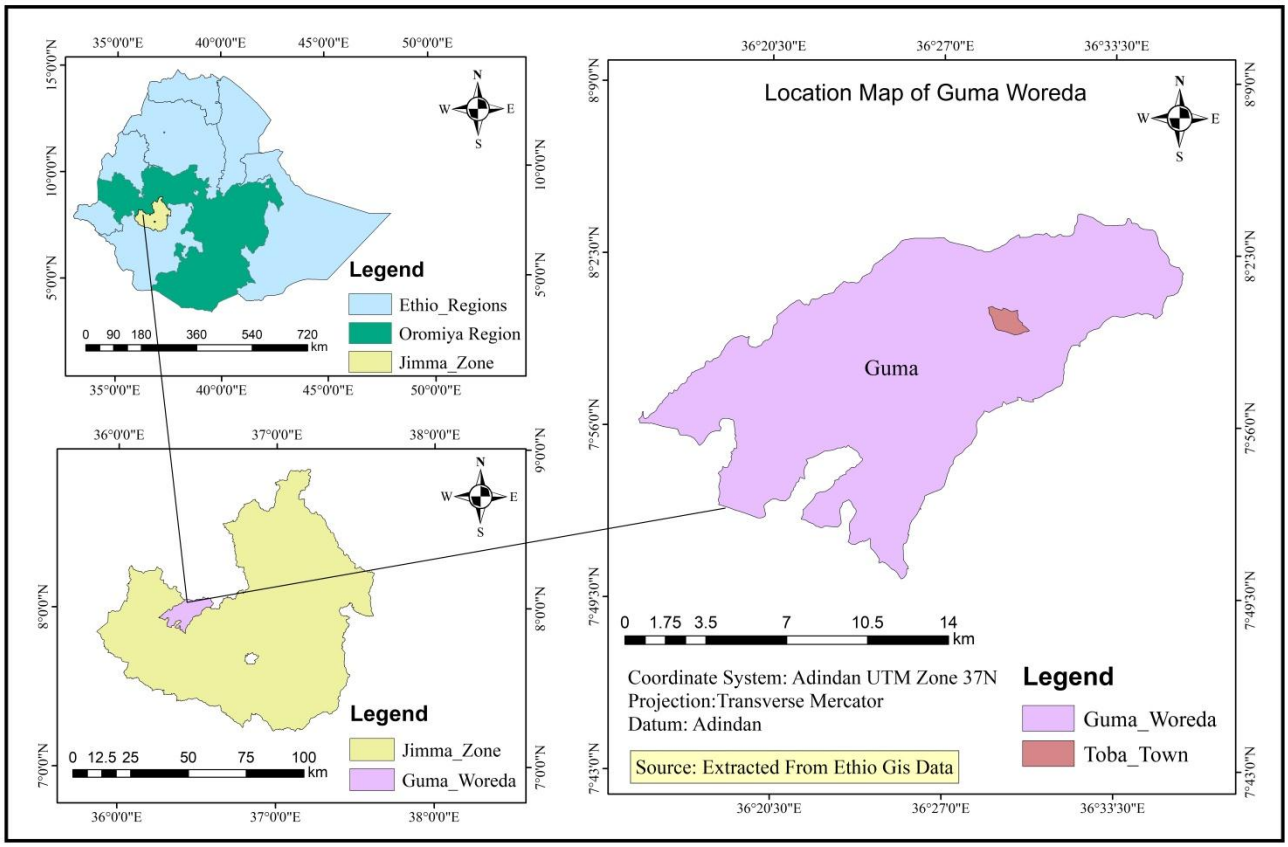
Economic Activity

The Oromia regional government considers Gumay woreda is a ‘’surplus crop producing district’ in which the cultivation of crops like Maize, Teff, Coffee, chat, barley and wheat are mainly produced and livestock’s such as cattle, sheep and poultry production can be takes place(Gumay woreda Tourism Bureau,2016).

Demography

According to the current statistical population survey report of 2010,Gumay woreda has an

estimated total population of 75,490 of which 37,784(50.1%) men and 37,706706(49.9%) were women. The religions of inhabitants were muslim, orthodox, protestant, catholic and others. The ethnic group of Gumay woreda, there are Oromo, Amhara, Gurage, Tigre and Kaficho. The majority of inhabitants were speak Afan Oromo and Oromo People are the dominant in Gumay woreda (Gumay Woreda, Tourism Bureau,2016).



Figaru1: Location map of the study area

3.2. Study Design

Kothari (2006) argues that research designer paste researcher plan in advance of the methods tube adopted for collecting the relevant data and techniques to be used during analysis. Depending on the nature and objectives of the problem to be studied and the means of obtaining information are the most important factors to choose the appropriate research design. Regardingtheselectionoftheresearchdesign,Kothari(2006:33),andBrownandDowling(1998:37) noted that, if the major emphasis of the study is on discovery of ideas and insights the appropriate research design is found to be exploratory (experimental) while if the purpose of

the study is on the accurate description of situation the appropriate research designs descriptive.

Taking the objectives of the research and the problem of the research into account, the mixed (both qualitative and quantitative) approaches, the methods which are appropriate to investigate the two pound discussion were used.

3.3. Sources of Data and Type

In order to accomplish this research properly, primary and secondary sources of data were used I generating valuable and relevant data. The primary sources of data were obtained through questionaries' which are open and close ended. Secondary source data were collected from officially published and unpublished materials.

In this research study both quantitative and qualitative data were employed. The quantitative data type has been from the targeted sample through the use of questionary. Similarly the qualitative data type were gathered using the data collection instruments. These were observation and by interviewing the individual for supplementing the information gathered using questioner.

3.4. Population and Sampling Procedures

Dormyel (2007), defines population as those units for which the findings of the survey are meant. From a statistical point of view, the term "population" refers to the total of items about which information is desired. The attributes that are the object of study are referred to as characteristics and the units possessing the mare called as elementary units. The aggregate of such units is generally described as population (Kothari,2004).Accordingly ,through multistage sampling procedure, a total of 94 households were selected from Yachi Kebele of Gumay district using random sampling method. According to Cochran's, if the population of study is small in number. We can calculate the sample size by using this equation:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

There for in the study N is the population size

n is sample size $n_0$is Cochran's sample size recommendation There for we would calculate our sample size

138.30000 .

1+138.3-1

286

=138.3

1.48

=93.44

=94

Therefore, 94 house holders will take part in the thesis to give their opinion or to react to the questions prepared for them.

3.5. Methods and Instrument of Data Collection

Descriptive research method was used for this study. The research utilized both quantitative and qualitative method to clarify concepts, characteristics, description, counts and measures to demonstrate implications of the issue under question. Data presented in the study are obtained from primary sources of data directly from respondents using questionaries' interviews and through observation. The secondary source of data were obtained from various literatures, journals. research papers, reviews and other sources which review on issues connected with impact of resettlement scheme on forest covers.

Qualitative and quantitative methods of data collection were used to generate information through interview, observation and questionaries' The questionaries' were prepared in English and then translated to local language Oromo version for the data collection to be easy.

3.6. Data Analysis

Analysis of data is a process of editing, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggestion, conclusions, and supporting decision making (Adèr,2008).To analysis the impact of resettlement scheme on vegetation cover and its implications for conservation, the data collected will be analyzed using two types of analysis, namely descriptive statistics and inferential statistics.

- **Qualitative Data Analysis:** Data gathered through qualitative data tools were analyzed through discussion under major thematic areas, after the necessary pre-analysis task such as recording, transcribing and coding remade.
- **Quantitative data Analysis**: The quantitative data will be analyzed using descriptive statistics by the help of Statistical Package for Social Science (SPSS). As a result, the percentage, frequency table and line graphs were generated to analyze and describe data that facilitate discussions of cases

3.6. Ethical Considerations

The researcher relayed all the necessary information pertaining to the research including the nature, purpose and usefulness, procedures, confidentiality (no names were required when filling the study tool) and the protection of anonymity as well as the voluntary nature of participation to the participants was guaranteed.

This study‘s population consisted of vulnerable subjects and therefore the researcher adhered to the following ethical principles throughout the process:

- **Confidentiality:** Participants were informed that confidentiality would be maintained.
- **Privacy:** The researcher also informed participants that information collected would be kept safely and secured at the Graduate School and would be discarded after five years and would only be used for completion of Post Graduate study purposes only.
- **Consent**: The researcher obtained an informed consent from individuals when completing the data-collection tool.
- **Equity and Justice:** Participants were informed that treatment and inclusion of participants in the research and research results would be distributed equally and with fairness.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

Table 4.1: Respondents by age classes and sex

Age classes	Males	Females	Total (%)	%
Less than 34	7	5	12	**12.77**
34 to 47	23	7	30	**31.91**
48 to 65	45	2	47	**50**
65 and above	4	1	5	**5.319**
Total	79	15	94	**100**

Source: Questionnaire 2022

Under table 4.1 above the demographic characteristics of the respondents (age classes and sex) is discussed. With regard to age 12(12.77%) of the respondents are less than 34 years of age whereas 30(31.91%) and 47(50%) of the respondents are aged between 47 to 47 and 48 to 65 respectively. The majority of the respondents are between the ages of 48 to 65. The remaining 5(5.31%) of the respondents are above 65 years.

4.1. Respondents by main sources of household energy

Table 4.1 Respondents by main sources of household energy

Main source of household energy	Frequency	%
Fuel wood & Charcoal	78	82.97
Crop residue	5	5.32
Solar	6	6.38
Electricity	5	5.32
Total	94	100

Source**: Field survey of the study area (2022)**

Majority of respondents 78(82.98%) %) used fuel wood and charcoal for cooking in their homes. Thus, woodlands are a major source of household energy requirement for cooking. The application of such non-renewable resource for household use contributes greatly to the debilitating effects of limited woodland resources in the sample Kebeles as well as the Woreda as a whole. Moreover, use of fuel wood as a source of energy has a negative impact on the forest resource the area. Tesfaye (2004) in his study stated that, a sizable proportion of the forest cover

had been lost due to the continuous process of migration and resettlement in eastern wellega. Ahmed (2005) also showed that about 4613.7 hectares of woodland have been destroyed in Haro Tatessa resettlement site in Oromiya regional state.

Table 4.3.. Major indigenous trees cut by the resettlers from Yachi Efo forest of Gumay Woreda

Plants' name	**Reason for cutting**
Makkaniisa	House construction, Timber (logging
Laaftoo	House construction, firewood and charcoal preparation
Qararoo	Timber (logging), farm utensil, firewood and house construction
Qilxuu	House construction, firewood and charcoal preparation
Waddeessa	Timber (logging), farm utensil, firewood and house construction
Goosuu	House construction, firewood and charcoal preparation
Birbirsa	Firewood, House construction

4.2. Data Analysis of Questionnaire

Table 4.4.Questionnaire Analysis

	Item				
		Yes		No	
		Freq	%	Freq	%
	Do you use fire to clear and prepare farmland?	81	86.17	13	13.82
	Do you practice soil conservation measures?	21	22.34	73	77.65
	Do you have the right of acquiring another area of land for farming if the fertility of the land that you currently own depleted?	37	39.36	57	60.63
	Do you plant trees around homestead and farmland?	27	28.72	67	71.27
	Do you practice hunting of wild animals?	55	58.51	39	41.48
	Is the crop yield producing enough for consumption throughout the year?	66	70.21	28	29.78
	Do you produce charcoal and lumber?	71	75.53	23	24.46

Under item one of the above table the respondents were asked to react to if they use fire to clear and prepare farmland. The majority 81(86.17%) replied ‘yes’ while the other 13(13.96%) replied ‘no’. From these we can conclude that the majority of the settlers are cutting and burning forest trees. This consequently exposes the area for deforestation.

Under item two of the same table the respondents were asked if they practice soil conservation measures. The majority of them 73(77.65) replied ‘No’ whereas the remaining 21(22.34%) responded ‘yes’. This indicates that natural conservation is not being exercised in the area where the settlers live.

If or whether they have the right of acquiring another area of land for farming if the fertility of the land that you currently own depleted was the third item the respondents were reacted to. The majority 57(60.63%) replied ‘no’ while the remaining 37(39.36%) responded ‘Yes’.

Under the same table, on item 4 the respondents were asked to react to whether they plant trees around homestead and farmland.27(28.72%) replied ‘yes’ whereas the majority 67(71.27) respond ‘No’ . Here it is very frightening that planting trees which help them for many things did not get attention and they don’t have the practice. This leads to climate change and loss of rain and drought.

The researcher also asked them if they practice hunting of wild animals.55 (58.51%) of the respondents replied ‘yes’ while the remaining 39(41.48%) reply ‘No’ It is better to appreciate that those taking part in hunting animals are almost in number with those who are not hunting. If a little advice is given the research hopes that the percent become down.

If the crop yields producing enough for consumption throughout the year is the sixth item all the respondents reacted to. Accordingly, 66(70.21%) of the respondents replied ‘yes’ while 28(29.78%) sai ‘No’. The researcher think that unable to produce food which is enough for a year expose the settlers to burn forest trees and make Fuel wood & Charcoal to get money. Under the final item they were asked to react to if they produce charcoal and lumber.71 (75.53%) of them replied ‘yes’ whereas the remaining 23(24.46%) answered ‘No’. This is also frightening still the majority of the settlers are cutting and burning of forest trees so as to produce charcoal and lumber. If government bodies make a decision this indirectly expose the area for drought.

1.	What additional source of income other than agricultural crops do you have?										
		Lumbering		Fuel wood		Selling labor		Honey production		Others	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
		26	27.65	18	19.14	43	45.74	4	4.25	3	3.19

Under the above table they were asked what additional source of income other than agricultural crops you have. Accordingly 26(27.65%) of them responded that their additional income is lumbering while 18(19.14%) replied as their additional income is fuel wood. These two types of income, lumbering and fuel wood directly connected with cutting and burning of forest trees. The majority, 43(45.74%) and 4(4.25%) replied selling labor and honey production respectively. The remaining 3(3.19%) responded other.

2.	Why do you hunt animals?										
		For flesh/food		Skin and hides		Ivory		Culture		Others	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq	%
		73	77.65	5	5.31	3	3.19	11	11.70	2	2.12

Under the table above the respondents were reacted to the item which deals with why they hunt wild animals.73 (77.65%) of them responded that they hunt wild animals for their flesh food whereas 5(5.31%) replied as they hunt animals for the purpose of skin and hides. 3(3.19%) replied that they hunt wild animals for their ivory whereas 11(11.70%) replied they hunt animals because hunting animals is their culture. The remaining 2(2.12%) replied for other purpose.

3	What is your source of firewood?										
		Natural forest		Cow dung		Agricultural crop residues		Plantation			
		Freq	%	Freq	%	Freq	%	Fre.	%	Freq	%
		54	57.44	22	23.40	9	9.57	7	7.44	2	2.12

The table above deals with their source of firewood. Accordingly 54(57.44%) replied that their source of firewood is natural forest while 22(23.40%) replied cow dung. 9(9.57%) of the respondents replied that their source of firewood is agricultural crop residues while 7(7.44%) reply plantation. The remaining 2(2.12%) replied other.

4.	What is your source of construction wood						
		Natural forest		Plantation		**Other**	
		Freq	%	Freq	%	Freq	%
		78	82.97	13	13.82	3	3.19

The sample respondents also asked their source of construction wood. Majority of the respondents 78(82.97%) replied natural forest whereas 13(13.82%) reply plantation. Only 3(3.19%) replied other like stone. Like the source of firewood, for construction wood many forest trees are being damaged.

4.3. Discussion of Key Informant Interview Analysis

The forest area of the study area started to change into agricultural land since above three-decade years ago. This is because of increasing the demand of resettlers, investor and state farms for getting additional agricultural and increasing the number of resttlers population. Due to this, the natural forest cover of the study area is shrinking from time to time. They also respond that the low productivity of traditional method of farming demands extensive lands. The farmers in the study area are extending the farmlands to the fragile woodland ecosystem in an attempt to meet

the increasing demand for food. The one uncontrolled population growth and subsequent increase in demand for food to support the surplus population could contribute to further deforestation. When they prepare their farmland for crop, they used different method. Most respondents described that hand clearing (cutting) is the major means for the clearing of woodland vegetation.

It is obvious that the effects of loss of natural forests, woodlands and vegetation cover through deforestation results in soil erosion, which is one of the most threatening environmental problems in the rural farming communities. Despite these entire burdens on the woodland of the area, the effort made to replace the fast growing deforestation is minimum or non-existent.

For all these what they said is witness that these changes are happened after they started living in the area. For first time when they reached there the area was rounded by thick forest trees and different plants of species under it. It is not hidden from the resettles that the change has a direct impact on

their life although they didn't start taking any measurement.

According to the analysis of their interview they complain that all these happen due to their life is depended on the wood. They said that they use the forest to prepare farmland; they cut and burn the forest trees to prepare charcoal which they sell to get income and to get house fuel. Connecting to this they said that there are species of plants and animal those are endangered from the area.

4.4. Factors for Forest cover change in Gumay district

In this study the major the factors attributed to the change of forest cover in the Gumay Woreda were listed and discussed in detail hereunder.

I. Resettlement and population growth

When the number of population increases environmental resources are affected. Particularly, in rural areas where livelihood of the people depends on the natural resources. In Gumay district, resettlement and population growth is identified as one of the major drivers of vegetation cover change. Population density of the district also increased from time to time. Hence, the district is experiencing rapid population growth and high population density which induces increased demand for resources and exacerbates the rate of resource depletion in the area.

II. Farmland and settlement expansion

In the study area, evidence from local informants indicated that there was no settlement and cultivated land before they arrived the area. However, cultivated lands and built-up areas have been drastically increased with a concomitant shrinkage in the area coverage of woodlands, forests and grasslands after resettlement program in the area. The interviewer indicated that settlers are clearing forest resources to expand their farm plots for cereal crops (maize, rice, sorghum) and cash crop production/Chat plantation .Thus, farmland intensification and settlement expansion has depleted forest cover of the area.

III. Deforestation

As the majority of the settlers used fuel wood and charcoal as the major sources of energy, plenty of forest trees were destroyed due to lack of alternative energy sources, The interviewer participants mentioned that the landless and jobless youths of the district were engaged in fuel wood extraction and charcoal production for sale to fulfill their livelihood requirements which resulted in the depletion of forest cover in the area.

IV. Unwise utilization and low management practices

Evidence obtained from sample households revealed that lack of a sense of ownership, absence of alternative employment opportunity to generate additional income as well as lack of awareness about the long term effects of resource degradations were the major factors responsible for the low performance of conservation activities. This shows high dependence of resettlers' livelihood on agriculture has destructed the forests and woodlands of the area to expand farmlands. The result of focus group discussions showed that forest resources are openly accessed by local communities and there is lack of ownership rights (tenure security) for the residents which affect their utilization and management decisions. Furthermore, they mentioned that there is weak institutional setup and lack of coordination among various stakeholders to mobilize local community participation for sustainable management of the resources. In the area, absence of land use plan is characterized by uncontrolled encroachment into vegetated lands for settlement and agriculture. Hence, population pressures compounded with few conservation efforts jeopardized the sustainability of forest resources of the area

V. Forest fire

As it can be seen from the study result, the local people set fire on the forests and woodlands of the area to expand agricultural lands. In the questionnaire and from the key interviewer replied

that land clearing for cultivation is the main cause of forest fire in the area, Discussions with natural resource expertise of the district confirmed that forest fire that occurs frequently in the study area damages a large area of forest cover every year to expand farm plots.

4.5. Implications on Forest resource conservation

Changes in natural land covers are inevitable phenomenon mainly due to human–environment interactions that involve various implications. These implications could be positive (convey of desirable change to protect and regain forest cover) and negative (undesirable changes). In this regard, massive population resettlement coupled with socioeconomic activities of the resettlers' has exacerbated the depletion and dynamics of forest cover in Gumay district. Consequently, resettlement scheme has threatened and posed great damage on forest resources of the area. This implies unless appropriate and immediate conservation measures are undertaken, the remaining forest resources of the district could disappear within a few years. Thus, the findings from this study have implications for sustainable conservation and utilization of the remaining forest resources. First, the dependency of the local people on the remaining forest resources should be minimized by promoting the use of alternative energy sources that are environment friendly as well as through livelihood diversification activities. Second, to reduce the potential impacts on forest resources of the area, resettlement program should be closely monitored and regularly re-evaluated by concerned stakeholders. Third, afforestation and reforestation program should be done by the government in collaboration with other concerned bodies. Fourth, mobilizing local community participation by enhancing awareness raising program, strengthening coordination and collaborative works among different stakeholders are important for sustainable forest resource management of the area. Furthermore, developing proper land use plan and limiting population growth through family planning are found to be imperative to conserve and protect the remaining forest resources of the district.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The greatest impact of humans on their natural surrounding is the use of land for agriculture, forestry and settlement which was directly influencing natural resources. When the number of population increasing, carrying capacity of the land is decreasing. Therefore, increasing population growth and decreasing carrying capacity of land forced people to leave the original place and to settle on another less populated area in the world, particularly in Ethiopia. There is a long history of resettlement in Ethiopia, especially the spontaneous form of resettlement, from the Northern part of the country to the Southern part.

The current study depicts that the forest cover of Gumay Woreda resettlement site has been reduced considerably due to different human activities. This may lead to removal of topsoil by erosion causing loss of fertility and consequently loss of productivity. This is in line with Mekuria (2005) that states resettlement in forest regions cause considerable damage of natural resource base. This implies that the threats to forest cover becomes threat to achievement of the objective of the resettlement program i.e. achievement of food security. The amount of available water in the ground water table can be depleted since the rainfall water that recharges ground water aquifer is lost through runoff. Dagnachew et al. (2003) states that clearance of vegetation cover leads to change in hydrological cycle and depletion of ground water. The depletion of ground water has an implication on the future development of potable water for domestic uses.

The result of the study shows that there are no conservation measures initiated in the area. This may have resulted from failure to deliver appropriate education to the settlers by concerned bodies. MORD (2003) and EPA (2004) on the other hand state that special care should be given to fragile environments and appropriate conservation measures should be in place to insure the sustainability of the environment. The woodlands can be considered as fragile environment with little potential to endure human interferences. So special care should be in place to ensure the sustainability of the environment Despite this fact the scheme failed to ensure any conservation measures in the area. It also failed to back up the settlers with appropriate technical knowledge so that they will be aware of environmental problems and take appropriate conservation measures. The only conservation measure in the area is scattered trees on farmland left for different purposes. Most of the trees left on farmland are not for agro-forestry purposes but they

are to be cut down after some time according to the responses from the farmers. Some trees found on farmlands whose barks are removed (girdled) to kill them could confirm this.

5.2. Conclusion

The study analyzed the rural livelihood strategies adopted by resettlers' households and major determinant factors that influence the choice of livelihood diversification strategies in Gumay district of Ethiopia. It was found that agriculture is the main economic activity and basis of livelihoods for the rural households of the study area. The farming system is predominantly rain-fed, traditional, subsistence oriented and it is mixed crop–livestock production. The uncontrolled population growth coupled with smaller farm size, rainfall dependency, erratic rainfall pattern and low return from farming activities has forced the resettles' households to pursue different income generating activities for their survival and livelihood improvement as well as to cope with the challenges of their livelihoods. The survey results revealed that agriculture access to credit service, agricultural training, total annual income and household sizes were the major determinants of livelihood diversification strategies. Moreover, it was found that lack of infrastructural development, road and transportation problems, poor rural–urban linkage, absence of technical support from concerned bodies, farmland scarcity, lack of working capital, limited access to credit facilities, lack of access to market, inadequate skill training and lack of awareness as well as poor coordination and collaboration among different stakeholders are constraints to livelihood diversification in the area. The study concludes that agricultural sector alone cannot be relied upon as the core activity for rural households and as a means of reducing poverty, achieving food security and improving livelihood in the study area.

5.3 Recommendation

Depending on the results of this study the following points were put forward as recommendation.

- Awareness raising activities should be conducted about conservation of forests and proper utilization of other national resources in a sustainable and environmentally friendly manner.
- Encouraging the community to implement agro forestry practices by planting trees in the farm and homesteads.
- Trainings should be provided to development agents and extension workers concerning ecosystem service; thereby support communities' awareness by woreda's agricultural office
- Assisting farmers by giving them agricultural inputs and new farming technics to enhance high crop yield from a small plot of land by agricultural office .
- Reforestation activities should be launched in deforested and degraded areas by actively involving the settlers by agricultural office .

Reference

Alemu B, Garedew E, EshetuZ,KassaH(2015)Landuseandlandcoverchangesandassociateddriving forces in north western lowlands of Ethiopia. Int Res J AgricSci Soil Sci 5(1):28–44AndersonJR(1976)Alanduseandlandcoverclassificationsystemforusewithremotesensor data,vol964.USGovernmentPrintingOffice,Washington,DC

Asmamaw LB, Mohammed AA, Lulseged TD (2011) Land use/cover dynamics and their effects in the Geradocatchment, northeastern Ethiopia. Int J Environ Stud 68(6):883–900

BerhanuG(2007)Theimpact of resettlement on woodland vegetation: the case of Chewakare settlement area, Southwestern Ethiopia .Addis Ababa University, Addis Ababa

Berhanu Y, Negatu L, Beyene F, Angassa A (2016) Impact of resettlement on vegetation status and rangel and condition in southwestern Ethiopia. Afr J Agric Res 11(7):533–542

CentralStatisticalAgencyofEthiopia(CSA)(2013)StatisticalabstractofEthiopia.CentralStatisticalAgencyof Ethiopia, Addis Ababa

Congalton RG, Green K (2009) Assessing the accuracy of remotely sensed data: principles andpractices,2ndedn. Taylor &Francis, Baco Raton

Dejene A (2003) Integrated natural resources management to enhance food security. The case forcommunity-basedapproachesinEthiopia.Environmentandnaturalresourcesworkingpaper,16

Evrard O, Goudineau Y (2004) Planned resettlement, unexpected migrations and cultural trauma inLaos.DevChange35(5):937–962. https://doi.org/1 0.1111/j.1467-7660.2004.00387.x

Gashaw T, Bantider A, Mahari A (2014) Evaluations of land use/land cover changes and land degradation in Dera District, Ethiopia: GIS and remote sensing based analysis. Int J SciRes EnvironSci 2:199–208. https ://doi.

Gebrehiwot SG, Taye A, Bishop K (2010) Forest cover and stream flow in a headwater of the BlueNile:complementingobservationaldataanalysiswithcommunityperception.Ambio39(4):284–294

Gebrelibanos T,A ssenM (2015)Land use/landcover dynamics and their driving forces intheHirmi watershed and its adjacent agro-ecosystem, highlands of Northern Ethiopia. J LandUseSci 10(1):81–94

Getahun K, Poesen J, Rompaey AV (2017) Impacts of resettlement programs on deforestation ofmoistevergreenAfromontaneforestsinsouthwestEthiopia.MtResDev37(4):474–486

Hammond L (2008) Strategies of invisibilization: how Ethiopia‟s resettlement programme hides the poorest of thepoor. JR efugee Stud 21(4):517–536.https ://doi.org/10.1093/jrs/fen041

Jaleta M, Yohannes M, Tolera A, Haile M, Yesufe A, Geberehiwot K, Teferi M (2011) Impact of resettlement on the livelihood, food security and natural resource utilization in Ethiopia. DrylandsCoordinationGroupReportNo.65

Kassie G, Kassa H, Padoch C, Abebaw D, Limenih M, Teka W (2014) Resource entitlement andwelfareamongresettlersinthedryforestfrontiersofNorthwesternEthiopia.JRuralCommunityDev 9(2):81–102

Kidane Y, Stahlmann R, Beierkuhnlein C (2012) Vegetation dynamics, and land use and land cover change in the Bale Mountains, Ethiopia. Environ Monit Assess 184(12):7473–7489

Kindu M, Schneider T, Teketay D, Knoke T (2013) Land use/cover change analysis using object-basedclassificationapproachinMunessa-ShashemenelandscapeoftheEthiopianhighlands.Remote Sens5:2411–2435. https ://doi.org/10.3390/rs505 2411

Lemenih M, Kassa H, Kassie GT, Abebaw D, Teka W (2014) Resettlement and woodlandmanagementproblemsandoptions:acasestudyfromnorthwesternEthiopia.LandDegradDev 25(4):305–318.https ://doi. org/10.1002/ldr.2136

MollaMB(2015)Landuse/landcoverdynamicsinthecentralriftvalleyRegionofEthiopia:thecaseofArsiNegele District. Afr JA gricRes 10(5):434–449

Mulugeta MT (2009) Challenges and opportunities of voluntary resettlement schemes in Ethiopia: acase from Jiru Gamachu resettlement village, Nonno District, Central Ethiopia. J Sustain DevAfr 11(3):83–102

Shiferaw A, Singh KL (2011) Evaluating the land use and land cover dynamics in BorenaWoreda South Wollo Highlands, Ethiopia. EJBE 2(1)

TadesseA(2009)ThedynamicsofresettlementwithreferencetotheEthiopianexperienceIreland. Kimmage Development Studies Centre, Kimmage Manor

Tafesse T (2007) The migration environment and conflict nexus in Ethiopia. A case study of Amharamigrant–settler in East Wollegazone. OSSEEA, Addis Ababa

Tafesse T (2009) The predicaments of Amhara migrant-settlers in east Wollega zone, Ethiopia. In:Ege S, Aspen H, Teferra B, Bekele S (eds) Proceedings of the 16th international conference of Ethiopian studies. Trondheim: Norway; pp 851–866

Tesfaye S, Guyassa E, Raj AJ, Birhane E, Wondim GT (2014) Land use and land cover change, andwoodyvegetationdiversityinhumandrivenlandscapeofGilgelTekezeCatchment,NorthernEthiopia.Int JForest Res. https://doi.org/10.1155/2014/61424 9

Tolessa T, Dechassa C, Simane B, Alamerew B, Kidane M (2019) Land use/land cover dynamics inresponse to various drivingforcesin Didessasubbasin, Ethiopia. Geo Journal 1:14

Vanclay F (2017) Project-induced displacement and resettlement: from impoverishment risks to an opportunity for development? Impact Assess Project Apprais 35(1):3–21. https ://doi.org/10.1080/14615517.2017.1278671

WaloMT(2012)Contradictionsbetweenrhetoricandpractice:thecaseofintra-regionalresettlementprogrammein northern Ethiopia. J SustainDev Afr14(2):41–62

Woldeselassie A (2004) Impact of resettlement in beles valley, Metekel. In: Pankhurst A, PiguetF(eds) People, space and the state: migration, resettlement and displacement in Ethiopia. Addis Ababa University,Addis Ababa, pp 76–91

Woube M (2005) Effects of resettlement schemes on the biophysical and human environments: the case of the Gambela Region, Ethiopia. Universal Publishers, California

Yonas B, Beyene F, Negatu L, Angassa A (2013) Influence of resettlement on pastoral land use andlocallivelihoodsinsouthwest Ethiopia. Trop Subtrop Agro-ecosyst 16(1):103–117

Zeleke T, Asfaw M (2014) The contribution of rural resettlement to the livelihoods of settlers inEthiopia: a case of Essera District resettlement schemes in SNNPR. Pub Pol Admin Res4(5):2225-0972

Zeleke T, Mberengwa I (2012) Resettlement and sustainable food security: a comparative study ofinter-zonal and intra-zonal resettlement schemes and host communities in Dawuro zone,SouthernNations,NationalitiesandPeoplesRegion,Ethiopia.JSustainDevAfr14(2):152 0–5509

APPENDIX A: QUESTIONNAIRE

1. Do you use fire to clear and prepare farmland?
2. If yes, what fire management techniques do you use to control fire damage tonatural forest?
3. What additional source of income other than agricultural crops do you have?
   (A) Pit sawing/lumbering (2)
   (B) Fuel wood (3)
   (C) Selling labor (4)
   (D) Honey production (5)
   (E) Others (specify)_____
4. Do you practice soil conservation measures?
   (A) Yes (1)
   (B) No (2)
5. If yes, what are they?
   (A) Terracing (1)
   (B) Leaving scattered trees on farm land (2)
   (C) Cut off drains and water ways (3)
   (D) Cut and carry system (4)
   (E) Others (specify)_____
6. Do you have the right of acquiring another area of land for farming if the fertility of the land that you currently own depleted?
   (A) Yes (1)
   (B) No (2)
7. Do you practice hunting of wild animals?
   (A) Yes (1)
   (B) No (2)
8. If yes, for what purpose?
   (A) For flesh/food (1)
   (B) Skin and hides (2)
   (C) Ivory (3)
   (D) Culture (4)
   (E) Others (specify)_____

9. If no, why?
   (A) No wild games 9(1)
   (B) For conservation of wildlife (2)
   (C) No experience of hunting (3)
   (D) Others (specify)_____
10. What is your source of firewood?
   (A) Natural forest (1)
   (B) Cow dung (2)
   (C) Agricultural crop residues (3)
   (D) Plantation (4)
   (E) Others (specify)_____
11. Do you plant trees around homestead and farmland?
   (A) Yes (1)
   (B) No (2)
12. If yes, for what purpose?
   (A) Fuel wood (1)
   (B) Construction wood (2)
   (C) Forage (3)
   (D) Shade (4)
13. Others (specify)_____
14. What is your source of construction wood?
   (A) Natural forest (1)
   (B) Plantation (2)
   (C) Others (specify)_____
15. Is the crop yield producing enough for consumption throughout the year?
   (A) Yes (1)
   (B) No (2)
16. Do you produce charcoal and lumber?
   (A) Yes (1)
   (B) No (2)

APPENDIX B: INTERVIEWEE

I. Personal Information

1. Age (A) less than 34 (B) 34 to 47 (C) 48 to 65 (D) 65 and above
2. Sex (A) male (B) female

1. What the land use/land cover of Gumay resettlement site looks like before and after the resettlement scheme in the area?
    - Is there any change on land use land cover after the resettlement program of Gumay district?
    - How can you describe the changes in your own words?
    - What are the indicators? Please mention as much as you can.
2. If there is a change, at what rate one type of land use/land cover is changed to another in pre-and post-resettlement periods in Gumay resettlement site?
3. Do you think that the resettlement have impacted negatively or positively to the area?
    - What are the negative impacts? And
    - What are the positive ones?
4. What is the major source of income for house-holds?
5. Is there any indigenous community before the resettlement program in this area?
    - If there, what is their livelihood strategy?
6. What are land use/ land cover risks (especially, to the water bodies, grass lands, forests, farmlands, wild animals…) after the resettlement is occurred in Gumay site?
7. How is today's coverage of the forest when compared to the conditions before 2005?
   (A) Declined (thinned) B. Increased C. No change
8. According to your knowledge, is severe and rapid forest cover change observed today?
9. On the basis of your knowledge, what are the impacts of Forest cover change on the Area? (Put in order).
10. Are there species of "trees" and wild animals endangered for extinction due to forest cover change from the local area? Please mention if any?
11. What do you think about the possible solution to alleviate the current problem of vegetation cover change and to use forest resources in a sustainable manner?
12. Who is responsible for this risk?
13. How could the changes on land use land cover risks due to resettlement scheme be

mitigated?

14. What is the roll of inhabitants in order to mitigate the risks occurred on the land use/ land cover? *Adapted from Berhanu Geneti Moroda MAY 2007*

APPENDIX I .QUESTIONARIES

1. Lafa Qonnaa qopheessuu fi qulqullessuf Ibidda fayadamteettaa?

2. Deebiin kee gaaffii 2ffaa eeyyee yoo tae ,mala mancauu bosonaa toachuufi ibidda toachuu akkamii fayyadamtee?

3. Midhaaniinalamaddagaliiakkamiiqabdaa?

A.Woyyaa dhahuu (2) B. midhaan bobaaa(3) C.trade (4) D.Honey production(5)

4. Mala dhiqama biyyee fayyadamteettaa?

A. Eeyyee(1) B.miti(2)

5. Yoo Eeeyyeen tae maal fai?

A.dalga qotuu(1)

B.lafa qonnaa irratti mukkeen faffacaasanii dhiisuu(2)

C.daandii lolaa yookiin bishaanii cufuu(3)

D.mala kutuu fi baachuu (4)

E.kan biraa----------

6. Osoo laftikee Oomishaaf mijataa hintaanee mirga lafa biraa argachuuq abdaa?

A.Eeyyeen(1) B.miti(2)

7. Adamoo gootee beektaa?

A. Eeyyeen (1) B.miti(2)

8. Yoo eeyyeen tae maaliif?

A. fooniif ykn nyaataaf(1)

B. gogaa fi kalleef (2)

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C. ilkaan Arbaaf(3)

D.Aadaaf(4)

E.kanbiraa----------

9. Yoomiti tae maaliif?

A. bineensonni bosonaa dhabamuu(1)

B. bineensotaa bosonaa kunuunsuuf(2)

C. Muuxannoo adamoo dhabuu(3)

D. kan biraa yoo jiraate---------

10. Maddi muka qoraanii kee maali?

A.bosona uumamaaa(1)

B. faltii loonii(2)

C. buaa midhaan qonnaa(3)

D. biqilaa

E. kan biraa----------

11. Naannoo manaa fi lafa qonnaa irratti biqilaa dhaabdeettaa?

A. Eeyyee B.miti

12.Yoo eeyeen tae maaliif?

A. qoraaniif(1)

B. ijaarsaaf(2)

C. nyaataaf(3)

D. gaaddisaaf(4)

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E.kanbiraa

13.Maddi muka ijaarsaa kee maali?

A. bosona(1)

B. biqiloota(2)

C. nyaataaf(3)

D. gaaddisa(4)

14.midhaan oomishame nyaata waggaa guutuuf gahaadha?

A. Eeyeen(1) B.miti(2)

15.Cilee fi xaawlaa niibaaftaa?

A. Eeyyeen(1) B. Miti(2)