

## Impacts of Resettlement on Woodland Resource Utilization in Abobo Wereda, Gambella, Ethiopia

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### Abstract

This study was conducted to assess the impacts of resettlement programme on woodland resource utilization in Abobo wereda. Data collected from 292 sampled households, focus group discussion, key informant interview and field observation were used to identify the underlying causes woodland degradation, use of woodland product by the resettlers and the conservation efforts made by resettlers to minimize woodland degradation in the study area. Due to the effects of resettlers population existing in the study area the natural vegetation covers particularly the forest, woodland and grassland is dwindling in alarming rate in the past three decades. The resettlers use the woodland product for firewood and charcoal, for construction and for preparing their farming tools. The major cause of woodland degradation was rapid expansion of farmland following resettlement, investors, excessive cutting of trees for firewood and construction, forest fire and conversion of woodland to open up crop field. The major conservation effort used by resettlers in the study area was planting trees. But, it is not comparable with the fast rate of deforestation and also the major suggested solutions that used to minimize woodland degradation in the study area were planting trees, providing environmental education, searching other alternative source of energy and setting of strong laws and follow up.

**Keywords:** Resettlement, Environmental impacts, Woodland utilization,

### INTRODUCTION

The nature of agriculture in the history of human kind has led the world to a problem of environmental degradation. This environmental degradation reduces the environmental ability to produce biomass for food, feed and household energy. It also undermines prospects to fight poverty and achieve sustainable development (MOFED, 2006). Environmental degradation is the major problem in Africa Jacobesen,(1997), especially in sub-Saharan Africa a region that has seen untold numbers of internally and extra- territorially displaced person and refuges respectively.

The population density for the country is estimated at 64.6p/kms (NOP, 2004). About 89 percent of the Ethiopian population lives in the central and northern high lands, this comprises only 38 percent of the country. The low lands consisting of 62 percent of the total area carried only 11percent of the population. The majority of the population lives at the highland part where the land situation is highly deteriorated. According to different studies, about 50 percent of the high land area is significantly eroded and 18 percent already lost its potential to further agriculture (Kools and Aynalem, 1988, ECA, 2002).

Historically, Ethiopia has witnessed several waves of migrations that were responsible for the current distribution of population of the country. The geographic distribution of the population is uneven with the considerable regional variation in both size and density. Though the high, area produces about 60 percent of agricultural products, it had permanent food deficit (Dessalegn, 1994). Several populations have moved from this part of the country to the south and southwest. These movement ranges from state sponsored involuntary resettlements to self-sponsored voluntary resettlement. Drought and famine were repeatedly occurred in this country and remains the critical problem. Every year millions of people reported to require immediate food help. The problem of food insecurity forced the government to look after long lasting solutions. Therefore, resettlement was considered as the immediate remedy that could provide a lasting answer. This resettlement program was criticized for its large social and environmental impacts involved during its implementation. Planners could not take in to consideration of the other side effects of resettlement in environmental, socio-economic and cultural setting of the area (Dereje, 2007).

As a result, there were deforestation, overexploitation of forest resources (e.g. fuel wood, timber, and non-timber products), expansion of agricultural lands in to the frontier of forest cover and grazing lands. There are also continuing conflicts between settlers and local people over the forest and grazing land utilization (Dereje, 2007).The resettlement schemes in Ethiopia, which lack environmental considerations in the planning and implementation stages have concentrated on the lowlands like Gambella where resettlers have uncontrolled access to the woodland situations.

Resettlement is the main contributing factor for increased frequency and magnitude of environmental degradation in Gambella region. Before 1984, a few indigenous people in sparsely populated settlements occupied Gambella region. However, between 1984 and 1996, a great number of people from different parts of the country settled in the region.

The impact of resettlement was that more than 140,000, ha, woodland was cleared and large-scale farming

increased in the region in order to meet the needs of the population (Mengistu, 1999; 2005). However, no study has specifically examined the impact of resettlement programme on the woodland resource utilization in Abobo wereda where significant numbers of households are resettled. Therefore, the research was designed to examine how resettlement affects the woodland resource in Abobo wereda, Gambella People’s Regional State.

## MATERIALS AND METHODS

### Description of the study area

The study area, Abobo *Woreda*, is one among the five *Woredas* of Agnwa zone found in Gambella People’s Regional State. It is located 813 Kms southwest of Addis Ababa and 47 Kms south of Gambella (the capital of the region). Geographically, it lies between 07°45’00”– 08°00’ 00” north latitudes and 34°30’00”–34°45’00” east longitudes. The *Woreda* bordered with Gambella zuriya *Woreda* to the north, Etang special *Woreda* to the northwest, Goge *Woreda* to the south, Jikawo and Jore *Woredas* to the west, Mengeshi *Woreda* and Oromiya Regional State to the east. It covers a total area of 361324.58. Km<sup>2</sup> and has 16 rural *Kebele* administration and one urban administration ((AWoFED, 2007; CSA, 2007). The terrain of the *Woreda* can be mostly characterized by vast flat landscape and slightly Plateau to the east. The altitude ranges from 460 to 1650 m.a.s.l. The major water bodies in this *Woreda* include river Alwero and lake Alwero (artificial).The *Woreda* has two agro-climatic zones. These are Woinadega (10%) and Kolla (90%). Accordingly, the mean annual minimum and maximum temperature of the *Woreda* ranges between 18°C and 39°C, respectively. In this area the temperature experiences very hot during the months of February and March and it reaches to 45-47°C. The average annual rainfall ranges between 900-920 mm. and the main rainy season in the *Woreda* is from mid-April to October (NMSA-Gambella branch, 2015)

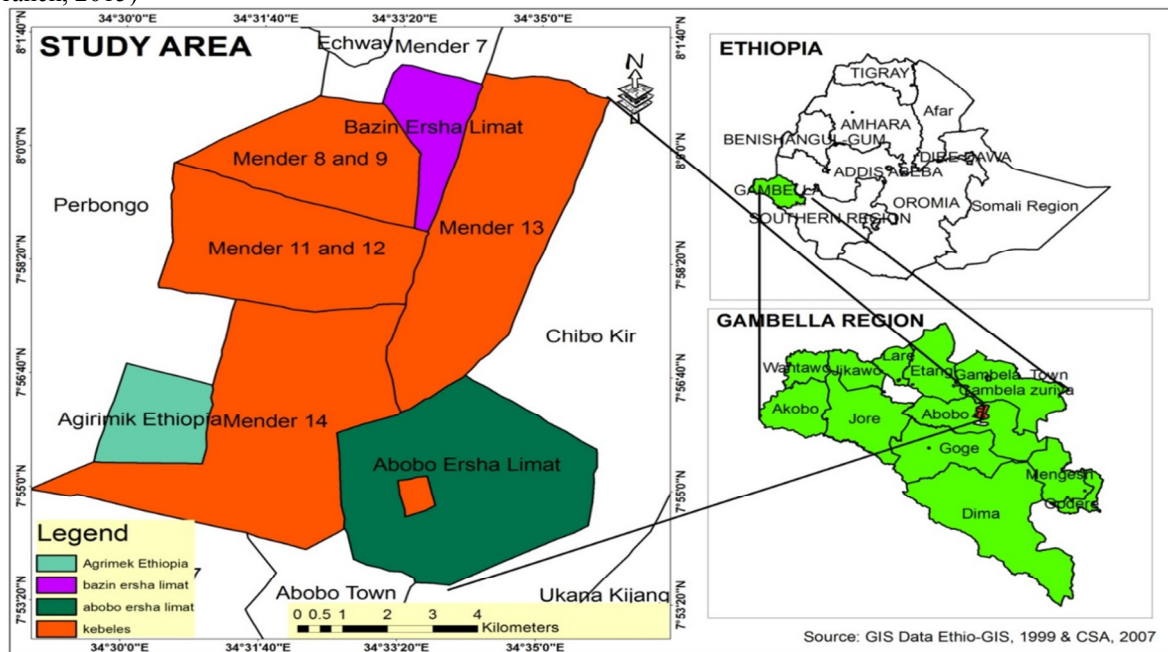


Figure1. Map of the study area (Source: Redrawn from Ethio-GIS data base (1999))

### Methods of data collection, sampling techniques and sample size determination

This study was a mixed research type evolves qualitative and quantitative methods. The design followed in this research is sequential exploratory design. In order to collect relevant data from primary sources, this research used different data collecting instruments. These were Household Survey, interview, focus group discussions and Field Observation.

There are a total of 17 Kebeles in the study area, Abobo Woreda, where as resettlers are found in six Kebeles. Among these six Kebeles, four Kebeles was selected purposely. Namely: *Chobo mender* (8 and 9), *Chobo mender* (13), *Chobo mender* (11 and 12) and *Chobo mender* (14). Those Kebeles are seriously affected by over utilization of woodland resource.

To determine sample size, formula developed by Yamane (1967) was employed. Therefore, 292HHs were included in the study (table1). Random sampling method was used to select respondents.

**Table 1: Selection of sample households (HHs)**

Resettlement site/Kebeles	Total number of HHs (%)	Sampled HHs
Chobo mender 8/9	423(39)	113
Chobo mender 13	247(23)	66
Chobo mender 11/12	220(20)	59
Chobo mender 14	200(18)	54
Total	1090(100)	292

Source: From the offices of sampled Kebeles, (2015).

### Data Analysis

Since the data collected were qualitative and quantitative in nature, this research relied on both quantitative and qualitative data analyses. The data generated from key-informants interview, FGD and field observation were analyzed by using qualitative techniques. Concerning quantitative data, household sample survey data were coded and entered into a computer for analysis, using the computer software SPSS 16.0. Computation of descriptive statistic such as mean, percentages, frequency, pie charts and tables were used to organize, analyze and interpret the result of the study.

## RESULT AND DISCUSSION

### WOODLAND PRODUCT UTILIZATION OF RESETTLERS

#### Woodland product utilization

Woodland product utilization is the process of harvesting, converting and disposing of woodland products and other resources of woodland (Mehta, 1981). It deals with felling of trees, their extraction, processing and manufacturing into various usable commodities. Its scope covers major woodland products such as timber, fuel wood and other minor woodland products such as honey, grasses and so on. Wood is a significant source of energy in both developing and developed countries. It is estimated that about 45 percent of the wood consumed in the world is used for home heating and cooking.

Of the various energy sources, the greater majority is derived from woodland products in the study area. From this fuel-, wood and charcoal are dominantly used forms of energy source. The shortage of wood for fuel is threatening the remaining woodland in the study area. There are also other forms of energy sources such as cow dung and crop residue. According to table, 2 fuel wood and charcoal are predominantly used energy sources for households in rural villages, constituting 96.1 percent of total energy sources. Woodlands play a major role in the social and economic development of many nations in addition to its protective function of the environment. Over 90 percent of the wood consumed in developing countries constitutes fuel wood, which accounts for about 90 percent of total energy consumption (EFAP.1998). Wood for energy currently provides the main role for forestry in the region. Wood provides some 98 percent of all energy consumed in the region and also the 182,350 tons of wood that are consumed annually as fuel are equivalent to 62,900 tons of kerosene valued at approximately birr 245,000 or US\$ 30,600 (WBISPP, 2001).

Most of the inhabitants of the sample Kebeles collect fuel wood for sale at the nearby local market. These people generate income from nearby woodland in several ways. For instance, they sell woodland product such as, fuel wood and charcoal.

**Table 2: Respondents by main sources of household energy:**

Main source of household energy	Frequency	%
Fuel wood & Charcoal	281	96.1
crop residue	11	3.9
Total	292	100.0

Source: Field survey of the study area (2015)

Majority of respondents (96.1%) 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. The following photo (1) shows the accumulation of fuel wood for domestic consumption.



**Photo 1: Clearance of woodland vegetation for energy consumption in mender 14.**

**Table 3: Respondents for materials used for construction.**

Source of Materials used for construction	frequency	%
woodland & savanna grasses	282	96.6
own plantation	10	3.4
Total	292	100.0

**Source:** Field survey of the study area (2015)

About 96.6 percent of the respondents replied that the types of materials they are using for house construction such as woodland and savanna grasses. The remaining 3.4 percent of respondents' are used own plantation for construction of their house respectively. This implying that there is relatively higher consumption of woodlands by resettlers.

**Settlers Awareness of woodland degradation**

According to table 4 84.9 percent of the respondents replied that there was woodland degradation.

**Table 4: Respondents indicating woodland degradation.**

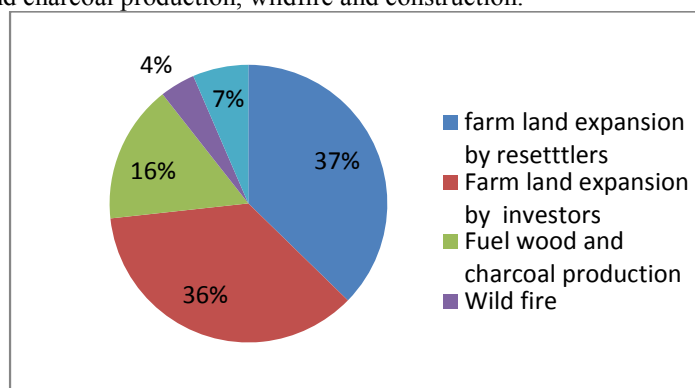
Variables		frequency	%
Occurrence of woodland degradation	Yes	248	84.9
	No	44	15.1
	Total	292	100.0

**Source:** Field survey of the study area (2015)

Nearly all respondents (84.9 %) feel that the dry forests in study area are declining both in size (deforestation) as well as in quality (degradation). The divergent view by the remaining respondents can be attributed to their recent settlement and thus lesser knowledge of the previous woodland situations in the district as some of the respondents came to in the study area during the past 3 years.

**Cause of Wood Land Degradation**

The major cause of woodland degradations were farmland expansion by resettlers, farmland expansion by investors, fuel wood and charcoal production, wildfire and construction.



**Chart 1: The major cause of woodland degradation (Source field survey (2015))**

Among the respondents 37.1 percent replied that there was woodland degradation. Due to farmland

expansion in the study area, 16.1 percent of the respondents said that the cause of woodland degradation was fuel wood and charcoal production whereas 4.1 and 6.5 percent of respondent said that wild fire and construction are the cause of woodland degradation respectively. About 36 percent of respondents said that, the major cause of woodland degradation is due to the existence of investor in the study area. Gambella has been, and still is one of the Regions which has attracted considerable investor attention and has been targeted as focal area for land investments by MOARD as well as other government agencies on account of what is perceived to be its extensive and untapped land and water resources. Domestic investors began to acquire land here even before the investment legislation noted above was issued and before the government had given the green light to large-scale investments. Data from the Region's Investment Commission shows that there are now over fifteen large-scale investors (with holdings of 2000 hectares or more), made up of both domestic and foreign interests, holding 535,000 hectares of land. In addition, there are numerous medium and small-sized investments scattered throughout the Region including the study area, but while there is not much information available on them, the regional investment commission estimated that the total land held by all investors, small and large, may reach 600,000 hectares. There is reason to believe that more land will be handed out to investors here in the months ahead as the Region is said to possess 1.2 million hectares of land suitable for investment (Dessalegn, 2011).

**Table 5: Large-Scale Land Transfers in Abobo wereda.**

No	Investor	Foreign/domestic	Land size( in hectare)	Major crops	Location
1	Alehilegn Worku	Domestic	2,000	Cotton ,sesame	Abobo wereda
2	Bazel	Domestic	10,000	Cotton, sesame	Abobo wereda
3	Fiker PLC	Domestic	2,000	Cotton , sesame	Abobo wereda
4	Hussen Abera	Domestic	2,000	Sesame	Abobo wereda
5	Mulukene Azene	Domestic	2,000	Cotton , sesame	Abobo wereda
6	Saudi Star	Saudi Arabia	139,000	Rice, soya	Abobo.gog,jore wereda
7	Solomon Kebede	Domestic	3,000	Cotton , sesame	Abobo wereda

*Source:* Gambella Investment Commission, MOARD, local press reports

*NOTE:* \*Large-Scale means 2000 hectares or more

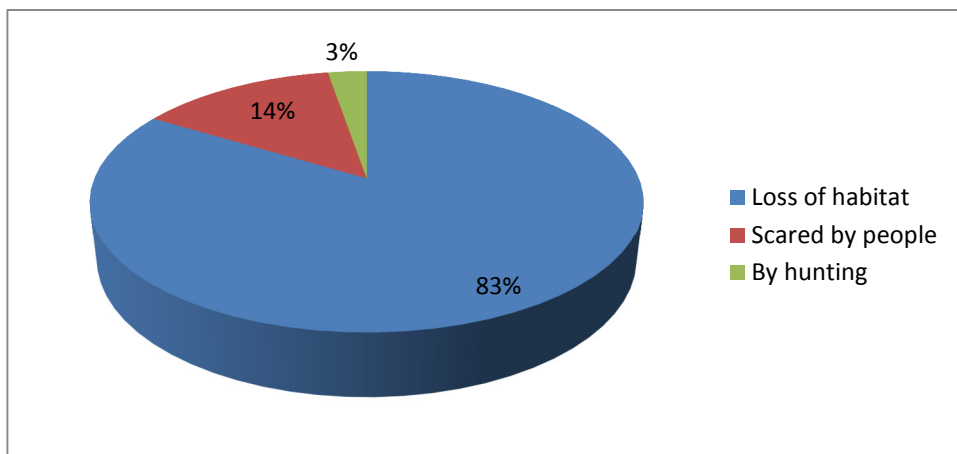
Table 5 showed that the investors in Abobo wereda own more than 100,000 ha, of land. They got these lands from the government. However, previously the land was covered by woodland vegetation. The main interest of the large projects is growing high value export commodities such as rice, soya beans and other pulses, and sesame; bio-fuel plants such as palm-oil trees are also attracting a good deal of interest. Some investors are planning to grow maize as a second or third crop but this is largely for bio-fuel purposes rather than as food for the local market. Except for two companies, all other investors have a lease period of 50 years, and almost all have been committed to pay a rental fee of 30 to 35 *Birr* (less than two USD) per hectare per year (depending on the use of irrigation water). Many of the small investors are engaged in growing oil seeds, cotton, maize, peanuts and fruit trees (Dessalegn, 2011).

According to Abate (2010), the study area has been experiencing vegetation degradation processes under the stress induced by both climate change and increased human activities. Forest cover change is triggered by various factors that undermine the forest cover potential and its productivity that leads to irreversible deterioration. Besides, forest cover change is the direct reflection of the dynamics of socio-economic development. Likewise, several factors stimulated by the activity of man are responsible for massive conversion of forest cover land into other land cover and land use units, All the factors of deforestation such as the prevalence of various types of agricultural activities, fire wood and charcoal production, cutting trees to fulfill the demand of constructional materials, settlement expansion and income generation are directly or indirectly related to population growth (Abate, 2011).

#### **Destruction of wood land and wildlife resource**

One of the most important "hidden treasures" of Gambella is its diverse wildlife. There is an immense wildlife migration that takes place seasonally between Gambella and the Sudan, and experts believe that this is the second largest wildlife migration in the world, after that of the Serengeti in east Africa, The major animal species are the white eared kob, Nile lechwe, hartebeest, roan antelope, giraffe, buffalo, warthog, waterbuck, and elephant. There is also a diversity of birdlife along the rivers and in the wetlands (Dessalegn Rahmato, 2011).

With regards to the reasons for the loss of wild animals most of (83.6%) respondents said that wild animals were lost in the study area due to the loss of their habitats, 13.7 percent of respondents stated that wild animals were lost. Because, most wild animals are scared of humans hence they cannot co-exist with them. The remaining 2.7 percent of the respondents said that hunting is the major reason for the loss of wild animals (chart 2).



**Chart 2: The cause of wild animals' destruction (Source field survey (2015))**

Helena (2007) argued that the chewaka resettlement area is endowed with different species of vegetation and biodiversity. Even in the first phase resettlement, resettlers were astonished and narrated they made with lions and antelopes while constructing houses and collecting firewood for their domestic consumption. At present, the number of wild animals has decreased due to the expansion of Agriculture. Ruwanza (2007) argued that the main cause for wild animal loss is the introduction of agriculture after resettlement. At the same time, Ruwanza (2007) argued that the increased loss of habitat will results in many wild animals being lost. According to Kirby (2003), wild animals usually suffer whenever human beings are introduced in areas where the wild animals leave. At most, the wild animals are forced to leave to other areas since they fail to co-exist with human beings. According to IUCN (2003), a habitat is a place where a plant or an animal naturally lives. This habitat loss is the main cause of species loss in less developed countries. The main causes of habitat loss include deforestation and agriculture. The clearing of land for agricultural purpose has caused a lot of habitat loss in the tropical forest. Similarly, Dejene (2011) argued that currently, due to destruction of habitat most of the wild animals have already disappeared from the area.

With regards to the current location of wildlife about 44.5 percent of respondents Said that I do not know where as 35.3% of respondents said that they were might be migrated here to Gambella national park and the remaining 20.2 %of the respondents said that, they were might be migrated to Sudan. The study areas wild life resources are under major threats from woodland destruction. The cause of this destruction were (1) destruction of high forest from the uncontrolled expansion of small scale agriculture, (2) destruction of wood land and grassland through the development of large scale rain-fed agriculture and (3) destruction of wood land through the collection of fuel and construction wood (WBISPP, 2001).

**Table 6: The distribution of respondents' for current location of wild animals.**

Variables	frequency	%	
Present location of wild animals	I don't know	130	44.5
	They may be migrated to Gambella national park	103	35.3
	They may be migrated to Sudan.	59	20.2
	Total	292	100.0

**Source:** Field survey of the study area (2015)

Forestlands are by far the real cause for the destruction of wild animals in Ethiopia. Therefore, the loss of bio-diversity should be seen from the angles of loss of both fauna and flora (Hiruny, 2007).If we are losing forests, we are losing not only the environmental and livelihood gains but also the sheer bio-diversities that existed and preserved around us for so many years (Mayo,1994).

Generally, in the study area due to the existence of woodland degradation, the wildlife also existed under destruction. Those things were the effects of resettlement, state farms and farmland expansion through investors.

#### **Agriculture and woodland area**

The native People, earliest of the District, were primarily hunters and gatherers until very recently. They practice shifting cultivation to grow small amount of staple crops. They believe that their traditional land use system has had negligible impact on the forests, and large-scale deforestation is associated with the arrival of settlers from the highlands during the last four decades. Following resettlement, crop farming and animal husbandry expanded. The annual rate of cropland expansion between 1972 and 2007 was 0.49 per cent or 1855.3 ha per year (Emrie and Tarekegn, 2010).

**Table 7: The distribution of respondents by Mechanisms of obtaining additional Agricultural land**

Variables		frequency	%
Mechanism of land acquisition.	By clearing woodland vegetation by their own.	257	88.0
	From government	35	12.0
	Total	292	100.0

**Source:** Field survey of the study area (2015)

One can easily infer from table 7 that about 88 percent of respondents obtain additional farm land through clearing woodland vegetation area by their own and change it into agricultural land where as 12.0 percent of respondents were obtain additional farmland from the government. According to the respondents, the government also given woodland area for us to clear woodland vegetation and change it in to agricultural land. Because, before three decade years ago the area was covered by woodland vegetation.

The vegetation 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 resttler population. Tamrat (2010) similarly argued that Large cleared and vegetation areas by resettlers to be used for agriculture are common observable phenomenon in Abobo resettlement area; due to this, the natural vegetation 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 following photo shows that the land previously under woodland and ready to use for farming purpose.



**Photo 2: Clearance of woodland vegetation for agricultural purposes in mender 14 Agricultural land and method of clearing woodland vegetation.**

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.

**Table 8: Distribution of respondents means of clearing woodland vegetation.**

Variables		Frequency	%
Means of clearing woodland for cultivation	Fire	39	13.4
	Hand clearing (cutting)	250	85.6
	Cultivation between trees	3	1.0
	Total	292	100.0

**Source:** Field survey of the study area (2015)

Around 13.4 percent of respondents replied that the farmers were used fire for the preparation of their land for cultivated different crop. In addition to these, some respondents said that using fire for preparing farmland was the cause for wild fire (forest fire) in the study area. Unless, they were manage it. Whereas 85.6 percent of the respondents said that, “we used hand clearing for preparing our farm land”. According to the respondents, they cleared woodland vegetation, before cultivating crops on their farmland. The remaining 1.0 percent of respondents said that they were cultivating between trees.



Photo: 3 photo capture during field observation at mender 14.

### Conservation Efforts and Wood Land Management

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. Although the household survey indicates (Table 8), that 65.4 percent of the respondents have a practice of planting forest tree plants to replace the cutting. Farmers tree planting and management are essential not only for the product and service they provide but also the bio diversity they embrace for the sustainability of the ecosystem as whole (Neggalign,2013).

**Table 9: The distribution of respondents' for practice of planting trees**

Variables		frequency	%
Plantation of tree seedlings.	Yes	191	65.4
	No	101	34.6
	Total	292	100.0

Source: Field survey of the study area (2015)

**Table 10: Respondents' practice of replacing seedlings per year**

Variables		frequency	%
Seedling trees	5-10	226	77.4
	10-20	30	10.3
	above 100	6	2.1
	Nothing	30	10.3
	Total	292	100.0

Source: Field survey of the study area (2015)

Note----- they were planted around their farmland.

From table 10 we can understand that, although there are some attempts to replace the cutting of trees through establishing of nursery sites to distribute tree seedlings, it is not comparable with the fast rate of deforestation. About 77.4 percent of them planted less than or equal to 10 seedlings per household, 2.1 percent of households planted less than or equal to 20 seedling per household, 10.3 percent of the household planted above 100 seedling per household and the remaining 10.3 percent said that we didn't planting seedling to replace the cutting. Given the lower rates of adaptation of planted seedlings in a year, the existing practice of planting trees is not comparable with the fast rate of deforestation of the woodland in the area. The increasing rate of woodland destruction after resettlement program enhanced soil erosion that was almost anon- significant phenomenon in the area before resettlement.

**Table 11: Distribution of Respondents suggestion for minimizing woodland degradation**

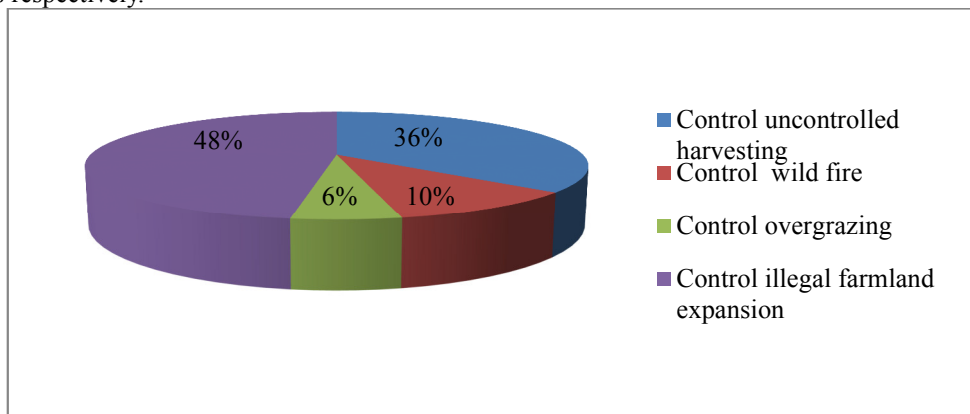
Variables		Frequency	%
Suggested solution for minimizing woodland degradation.	planting trees	185	63.4
	providing environmental education	43	14.7
	setting strong laws and follow up	30	10.3
	limiting family size	4	1.4
	searching other source of energy	30	10.3
	Total	292	100.0

Source: Field survey of the study area (2015)

Regarding to minimize woodland degradation, about 63.4% of respondents said that planting trees are the



major suggested solution for minimizing woodland degradation, providing environmental education was the suggested solution for minimizing woodland degradation which also indicated by about 14.7% of the respondents. Attainable strong laws and continuous follow up by 10.3 % of respondents. Those who said limiting family size and searching another source of domestic energy a solution of woodland degradation constitute 1.4 % and 10.3% respectively.



**Chart 3: Methods of woodland management (Source field survey (2015))**

In the survey, it was also attempted to assess how the wood land is managed and controlled, about 36 percent of the sampled households said that control uncontrolled harvesting was the good method of woodland management, 10.6 percent of respondents said that control wild fire is the best method of woodland management where as 5.8 percent of respondents said that control over grazing is good method of woodland management. In addition, the remaining 47.6 percent of respondents said that controlling illegal farmland expansion is the best method for woodland management. Furthermore, all households included in the survey are aware of the adverse effect of unwise and over utilization of woodland resources. Hence, due attention should be given to slow down the ever increasing depletion of the woodland in the short run and to reverse the ecological degradation in the long run so as to ensure sustainable utilization and development of natural resources. Dejene (2011) argued that now a day there is a way of controlling illegal resettler by looking their identification card. If their identification card is out of that wereda, the resettlers will stay in prison and finally, they are forced to return their original home.

According to the discussion made with the experts of the environmental protection authority no significant measure was taken before and after resettlement programme. The EIA documents and guide lines recommend that before undertaking any resettlement projects in any circumstance EIA should be done but the resettlement programme of the region and the study area in particular was under gone without EIA. Therefore, it has significant adverse effect on the environment and sustainable development of the area. All settlers including the local leaders have the farmland from the woodland. On the other hand, to replace the deforested areas for agriculture and fuel wood consumption they practice to replant seedlings. However, deforestation is much higher than replanting trees in the area. The reasons for these problems, according to the local administrators are absence of alternative means of energy and lack of awareness about environment and sustainable development.

In spite of these problems on the ecosystem, the attempt to manage and control the situation from the concerned government organization is relatively weak and lack integrated approach for sustainable ecological development. Resettlement fostered the degradation of the Ethiopian rainforest in south-western Ethiopia not only due to the increase of the population and their demand for land but the weakening of an institutional framework that promoted relatively effective and sustainable forest management systems beforehand (Dr. Till Stellmacher and Dr. Irit Eguavoen,2011).

## CONCLUSION AND RECOMMENDATIONS

Due to the effects of resettlers' population, investors and state farms existing in the study area the natural vegetation covers particularly the forest, woodland and grassland is dwindling in alarming rate in the past three decades. The resettlers use the woodland product for firewood, charcoal, for construction and for preparing their farming tools. Based on survey conducted the PA leaders point out that the agricultural activity has been increasing during recent periods due to population increment in the study area. They said the inhabitants were forced to clear forest, woodland and grassland in order to sustain their lives.

The major cause of woodland degradation was rapid expansion of farmland following resettlers, investors and state farms, excessive cutting of trees for firewood and construction, forest fire and conversation of woodland to crop field. The major conservation efforts used by resettlers in the study area were planting trees. But, it is not comparable with the fast rate of deforestation and also the major suggested solutions that used to

minimize woodland degradation in the study area were planting trees, providing environmental education, searching other alternative source of energy and setting of strong laws and follow up. Therefore the following recommendations are also forwarded:

1. Reforestation activity should be promoted in deforested and degraded areas by involving the local peoples and resettlers.
2. The wereda and the Kebeles administrators should to stop further illegal resettlers and farmland expansion in the study area. Because; these are the major cause of woodland degradation of the study area.
3. Agro forestry practices need to be promoted to reduce the burden on the natural environment improves the livelihood of the native people. The agro forestry practice includes planting trees and crops in home gardens should be implemented.
4. Resttlers use fire to prepare their farmland without any management. Using such types Method is not good for the nearby ecosystem. Therefore, the farmer should use at least fire management system. Because, these may the cause for wildfire/woodland degradation.

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