



Scientific Research and Reviews (ISSN:2638-3500)



Environmental History of the Ayu Guagusa Woreda during Twentieth Century

Bogale Aligaiz Agalu

Department of History, Injibara

ABSTRACT

The study of the relationship between humans and nature in the past is Environmental history. Environmental history was well-known as a new discipline in the 1977 at the American society. Its study in Africa lies in its emphasis on colonial capitalism and imperialism as environmental contexts and processes. The study in Africa was the results of colonialism because of the environmental degradation and prolonged to multi-faced environmental problem. Study in Ethiopia was ignored due to the emphasis of studies for political centers and political elites. Likewise other part of Ethiopia, the environmental history in Ayu Guagusa District was not well studied.

Ayu Guagusa woreda was positioned in the Awi Administrative Zone, Northwest Ethiopia. The district populated by ethnically diverse. The diverse peoples produced the maize, pepper corn, wheat, téff, Dagussa, barely and bean through practice of traditional agricultural system. Following land reform since 1975, the government formed Peasant association in the study area. Then, the villagization, resettlement and other programs were also introduced by the socialist government to instruct the ideology into the rural peasant. The programs negatively resulted soil degradation in the district. This land degradation rehabilitated by measures such as reforestation, afforestation, gave awareness for the local peoples, terracing, crop rotation, animal manure and counter plough in the district.

Keywords: Environmental History, Ayu Guagusa Woreda, Villagization, Peasant Associations.

*Correspondence to Author:

Bogale Aligaiz Agalu

Department of History, Injibara

How to cite this article:

Bogale Aligaiz Agalu. Environmental History of the Ayu Guagusa Woreda during Twentieth Century. Scientific Research and Reviews, 2022, 15:127.

 **eSciPub**
eSciPub LLC, Houston, TX USA.
Website: <http://escipub.com/>

Geographical Setting and Historical Background

General idea on Environmental History in Ethiopia

Environmental history is the study of the relationship between humans and nature in the past (Nienhuis, 2008:1) ^[23]. According to Pawson and Christensen (2015) ^[26], it deals with the relations between environmental ideas and materiality. Environmental history was institutionalized as a new discipline in the early 1970's. The American society for environmental history was established in 1977 to serve as a first scientific society (Padua, 2010:81) ^[25]. This discipline was expected to explain different processes of changes on both the natural environment and the social environment that affect the relationship between humans and nature. In addition, the impact of different changes of the natural environment against society was also evaluated by the study of environmental history (Hughes, 2001:4) ^[16]. He stated that the three levels on which environmental history proceeds. Those were to understand nature and its changes, investigates human economic and social organization and their effects on the environment and the third studies the expression of human thoughts, feelings and intuitions about all aspects of the environment (*Ibid*, 2008:321) ^[23]. The two significant characteristics of the environmental history were the transnational or global, nature of the field and its relationship to science. Certainly environmental history resonates with the national perspective depending on the study area and scholarly community according to Carruthers (2011) ^[11].

Environmental history has the most important uses. The first use was thinking like a historian. All human history has a natural context, all environmental knowledge was culturally constructed and historically contingent including our own and historical wisdom usually comes in the form of parables were thinking as historian. Ground for hope was the second use of

environmental history. Environmental history have been the great virtue that they remind of people of the immense human power to alter and find meaning in the natural world and the even more immense power of nature to respond (Cronon, 1993:12-19) ^[12]. In order to applied historical knowledge to the pressing environmental issues of the day, the study of environmental history could timely and relevant to contemporary environmental issues (Mulvihill et al., 2001:612) ^[22].

A key feature of African environmental historiography lies in its emphasis on colonial capitalism and imperialism as environmental contexts and processes. African environmental history has been dominated by analyses of the colonial experience and its legacies. Colonialism in Africa was susceptible to environmental degradation and perpetuated to multi-faced environmental problem noted by the Kwashirai. The new environmental history has in certain respects run in parallel with trends in African history because it shared many well-established Africanist moral concerns and perspectives. Essentially corrective and anti-colonial approaches were perspectives which emphasized African initiative in the face of European conquest and capitalist exploitation. It has been intellectually more agreeable for Africanists to reintroduce environmental issues within this framework (Beinart, 2000:270) ^[10]. Most parts of Africa, particularly East Africa, today touchingly represent a primary crisis region. Famine, over population, disease and the loss of non-abundant wildlife habitats were among the central problems of the region. The introduction of environmental history renewed historical studies in Africa in the 1980s with emerging researchers such as James C. McCann (1997) ^[23].

Therefore, environmental history gives more emphasis for the study of the interrelationships between humans and nature through time. And, the research result of this sub-discipline would be a launch pad to prepared different

environmental plans. Environmental history was the most ignored sub-discipline in Ethiopian historiography. This was partly due to the emphasis of several historical studies for political centers and political elites. Nonetheless, even different new teams of the history discipline became the focus of various researchers on Ethiopian history; the issue of environmental history was still untouched (Bahru, 2008, pp. 28-31) [8]. In addition, the emergence of environmental history as a sub-discipline of the history subject was a recent phenomenon (Williams, 1994, pp. 4-6) [28]. Therefore, similar to other parts of Ethiopia, the environmental history of Northwest Ethiopia in general and Ayu Guagusa District in particular was not studied efficiently. However, although not comprehensive enough various scholars from different disciplines have been attempted to write the environmental history of the northern west of Ethiopia. In regard to Ayu Guagusa District, there were some studies in various issues of environment from different disciplines.

Geographical Setting of Ayu Guagusa Woreda

Ayu Gugusa Woreda was found in the Amhara Regional State, in Awi administrative Zone. It was one of the tenth districts of the zone. The district was the part of the Ankesha Guagusa woreda before 2018. The district split from the Ankesha Guagusa woreda in the 2018. It was predominantly inhabited by Awi (Agaw) ethnic group, who belonged to the central Cushitic speaking peoples. Azena Town is the center of the woreda. The woreda contains 20 kebeles. The altitude range varies from 160.0m to 200m meters above sea level. The average annual temperature ranges from 17.5-22.5°C and the average annual rainfall varies from 1500 to 2000mm, 85% of which falls during the rainy season from mid-May to mid-September (Ayu Guagusa Administrative office, 2020) [3].

Climatically, has three zones namely *Qolla* (20%), *Woina dega* (75%) and *Dega* (5%). The

District has 66% of the landscape being plateau, 28% mountainous, 3 % valley, marshy 2% and 1 % water bodies. Much of the land in the study area was fertile and there were three major types of soil. According to the Agricultural and development office, Brown soil was the predominant soil type in the woreda constituting 75%. The second most abundantly found soil type was red soil (15%) followed by black soil (10%). Red and Brown soils were characterized by easy workability, susceptible to be washed out and relatively better drained. This soil type was most suited to crops like maize, coffee, finger millet, wheat and red pepper. Depending on crop type it requires an average plough of six times which at times can extend to twelve times. It has higher weed infestation and shows relatively better response to fertilizer application. Black soil on the other hand demands heavy working but has been low drainage and most found on gentle sloping areas and foot hills. It has been low weed infestation but it was highly susceptible to water logging. Lands with this soil type were mainly used for grazing lands. Black soil showed little response to fertilizer application. *Teff* was most suited crop for black soil. *Noug* and finger millet also give better productivity. But, usually maize failed in the black soil ((Mikias, 2007:56; Ayu Gugagusa woreda rural administration and land Use office, 2012) [6,21].

Soil type and characteristics of the area depended on the topographical features. The soil that was found in flat or almost flat topography was black or black-brown in color with a high clay content and deep profile that crack severely in the dry season and became elastic and water logged in the wet season, making the area difficult for agricultural purposes. The soils of raised and falling slopes were mostly red in color was highly preferred by farmers and it was used for agriculture. This soil fertility attracted different ethnic groups that speak variety of languages (Ayu Gugagusa

woreda rural administration and land Use office, 2012) [6].

Peopling of the District

Ayu Guagusa was the broad populated woreda by the different ethnic groups. These ethnic groups that settled in the study area were the Agew which covers 78 %, the speakers of Amharic are 21% and 1% are the speakers of Gumuzenga. The wereda has a total population of 133,783 of which 64,849 were males and 68,934 were females (*Ibid*). In the study area, three religions, namely Christianity, Islam and

traditional beliefs were practiced. Ethnic groups, who inhabit in the Ayu Guagusa woreda associated themselves with one of these religions. Most of the peoples settled in the woreda followed orthodox Christianity which covers 90%. The spontaneous settlers that settled at Ayu, Ehudet and Yenebera kebeles were Muslims which covers 9% and the Gumuz People who inhabited in the kebeles of Ambara and sainte on the other hand, practiced their own traditional beliefs which accounts 1%(Ayu Guagusa Woreda Cultural Tourism Office,2011) [3].

Table: 1. Land physiographic and soils of Ayu Guagusa Woreda

Topography	%	Soil type	%
Plateau(Flat land)	60	Red soil	15
Mountains	28	Brown soil	75
Valley	3	Black soil	10
Marshy	2		
Water bodies	1		

Source: Ayu Guagusa Woreda Agricultural and development (2011).

According to the Getnet(2016) [14], the economy of the woreda was based on mixed agriculture of the subsistence type, including livestock husbandry and the cultivation of the staples *teff*, wheat, maize and pulses. The crop production and livestock farming were the main sources of livelihood of farmers in the district. They were the dominant farming system. Crop production was important to get feed (crop residue) for animals, in turn; livestock production was an important means of draft power and organic manure. The woreda was well known by its production of Maize (30%), Pepper corn (27.6%), Wheat (14%) and *Teff* (12%). *Dagussa*, Barely and Bean were additional crop productions of the woreda. As a result, Ayu Guagusa was recognized as one of the productive areas in the

Awi zone (Ayu Guagusa Woreda Agricultural and Development office, 2011) [4]. Animal rearing was also practiced mixed with crop cultivation in the district. Domestic animals such as cattle, goat, sheep, donkey, chicken and bees were kept on traditional basis. This subsector provided the community with milk, butter, hides and skins, honey and traction and transportation powers (*Ibid*).

Methodology

This article has employed based on both primary and secondary sources. Unstructured interview was acquired data from key informants, who have remarkable knowledge about the environment of the Ayu Guagusa Woreda. The secondary sources were collected from

periodicals, document analysis, Thesis dissertations, internet sources and other reports. Data collected through this method would be carefully examined, cross-checked, interpreted and analyzed to give meaningful justifications for the study.

Results and Discussions

Traditional Agriculture and its Impact on Environment in Ayu Guagusa Woreda

Traditional Agricultural System and its Impacts on the Study Area

Ethiopian agriculture remained backward, using traditional methods and techniques that remained unchanged for centuries. United Nation Environment Program defined traditional agriculture as farming practice, which mainly relies on indigenous and traditional knowledge that was based on farming practices used for several generations. Historical evidences consistently demonstrated that, ox-plow agriculture was the oldest economic sector first took root in the northern highlands, which was practiced for thousands of years and became economic culture of the Semitic and Cushitic speakers. It was used as driving force or drawn by yoke of oxen brake but does not invert it prepared in order to break the soil on the surface of the earth in the northern farming system (Azeze, 2013:27) [7].

George Lip Sky also described that plowing was the farming system done with woodland instrument tipped with steel point pulled by oxen or humans. Therefore, "agriculture history should be a subset of a much broader environmental history which reconstructs human interaction with the physical environment" highland vegetation covers. The ox-plow complex has brought significant change under the influence of the plow generally in northern highland including Gojjam. Farmers in Ayu Guagusa woreda practiced a mixed farming system combining grain production and livestock rearing in the small and fragmented plow land. Increasing population size in a given area stimulates more intensive land use to fulfill the

ever increasing demand for food (Ayu Guagusa Woreda Agricultural and Development office, 2011) [4]. As already obtained information from the office, traditional agricultural system was generally characterized by environmentally costly, subsistence, limited scope for farm mechanization, low productivity and excessive extraction of soil nutrients.

Agricultural Potentials and Major Crop Production in Ayu Guagusa Woreda and its Mode of Production

The Awi zone particularly in the Ayu Guagusa woreda and Gojjam in general has the three agro-climatic zones that enabled to produce surplus production from the different cereal crops (Azeze, 2013:31; Agricultural and Development office, 2011) [4,7]. Due to various climatic conditions, Ayu Guagusa woreda was the home of many crop types such as maize, pepper corn, wheat, *teff*, *Dagussa*, barely and bean. Crop production was the major agricultural activity in the woreda. It was entirely rain fed except locality few localities where small scale water harvesting and irrigation practices have been recently introduced by the office of Agricultural Development in the Ambala areas. Rain fed crops mainly produced under – low input level remain to have stagnated production with further decreasing trend. Farmers were supported by agricultural extension to improve the productivity and household income. Development agents who have diploma level profession were giving extension services in their respective sites. In the district, there was only one main rainy season (Ayu Guagusa Woreda Agricultural and Development office, 2011) [3].

Maize was the most principal cereal crop which was dominantly produced in Gojjam in general and Ayu Guagusa woreda, Awi Administrative zone in particular. It has been high productivity level compared to all other crops grown in the study area. Recently the price has improved. In maize-based farming system the maize stalks serve important role of livestock feed and fuel-

wood. The enterprise commands high labor and input use. Weeding was the most labor demanding agronomic practice of all (Mikias, 2007:51) ^[21]. According to McCann and Gezachew, maize was not endemic to Ethiopia. It arrived in Ethiopia especially in northern parts of the country in the late sixteenth or early seventeenth century from Portugal. There were no reports of extensive cultivation before 1805. It grows as a garden vegetable not as a farm grain. It was grown as a farm crop in the early twentieth century. Maize was the common principal produce both in *qolla* and *weyna dega* agro-ecological zone. It was long cycle crop sown early from *karmet*. It appeared to require the more even distribution of rainfall throughout the *balg* and *Karmet* season. There was strong correlation between the *balg* rainfall distribution and maize production. According to the 2011 Woreda information, maize production covered 30% of the cereal crop production.

The second most principal cash crop in the district was pepper corn which covers 27 %. Pepper plays a principal role in the diet to make *watt*. It was also significant items in the country's export and generating foreign currency for the overall economic developments of the country. Pepper was the dominant crop highly practiced by the use of hired labor (Informants: Kulacha, Tamarie). Payments for services rendered can be in cash or in kind. The price paid showed high variation. At peak seasons it reached up to 150 Birr/day. Also, use of communal labor has been an important role. Usually families that have lineage and households living close by exchange family labor especially at high times of land preparation, harvesting and processing of outputs. Kebeles like Ambala, Ehudet and yenebara were the dominant Pepper corn growing areas with the influence of urban market (Ayu Guagusa Woreda Agricultural and Development office, 2011) ^[4]

The other important food crop in the district was *Teff*. *Teff* accounts nearly half percent of the cereal production in Gojjam. *Teff* was easily

adoptable to various attitudes and climate. Peasants produce *teff* either for commercial or consumption purposes. White *teff* was usually produced by peasants for sale and red *teff* was produced for consumption purpose. White *teff* was very expensive than red *teff*. The typical characteristic of *teff* was that it was adaptable to both hot temperate and very chilling conditions (Azeze, 2013:29) ^[7]. Therefore, Ayu Guagusa was suitable for *teff* production because of the existence of all three agro-climatic zones. *Teff* accounts 12% of the total cereal production from the cultivated land. This could be explained by the fact that *teff* was the staple food in the district (Ayu Guagusa Woreda Agricultural and Development office, 2011) ^[3].

Barley was preferred as it was used for many food and local beverages like *injera*, *kita*, *kolo* and *Tela* that produced in the study area. It accounts 14% compared with crops produced in the woreda. It was less demanding in respect to management as compared to *teff*. The straw can be used for animal feed. In some parts of the woreda, Barely was cultivated under irrigation and hence it play important role of supplementing food availability through allowing early harvest. Additionally, wheat, bean and *dagussa* were cereal crops produced in the district (Mikias, 2007:51; Ayu Guagusa Woreda Agricultural and Development office, 2011) ^[3,21].

The Major Problems of Crop Production in the District

In Ethiopia, Agricultural development was hindered by many factors; among these lands degradation was threatening the overall sustainability of agricultural production of the country (Azeze, 2013:33) ^[7]. Farming activity in the study area challenged by various constraints having direct impact on productivity. There were different pests, disease (root roch, Ascohyta Blight and Wilt), snow, unseasonal rainfall and problems of infrastructures were the major causes which were constraints in Ayu Guagusa district according to the informants obtained from the Agricultural and Development office of

the woreda. Some of the common pests in the study area include stalk bore and *African bollworm*. Stalk borer /*busseolafusca*/, locally also known as *etsi* (Awngi- the language of Awi ethnic group) and *Ageda Korkur* (Amharic- the national language of Ethiopia) was a field pest which mainly infests maize during the growth of the shoots, (i.e., in July and August) and on their maturity time, (i.e., October). In addition to maize it also occasionally infests sugarcane and finger-millet in the lowland parts of the study area. African Bollworm (*Helicoverpa armigera*), locally known as *etsi* (Awngi) and *Til* (Amharic) was a field pest which infests crops such as pepper corn, maize, finger-millet, *teff* and wheat (Alene, 2014:488) ^[2]. Apart from the pests already cited, there were also diseases that highly affect the growth of shoots of crops in the study area. These include Wileet, root roch and Ascohyta blight which affect the growth of shoots of crops in the study area (Ayu Guagusa Woreda Agriculture and Development office, 2011) ^[3].

Rapid population growth resulted in a chronic shortage of land in the district. The demand for plots of land increased particularly after the land reform in Ayu Guagusa woreda. Unseasonal rainfall was the other major problem affecting the productivity of the area. Untimely rain greatly affected the district of Ayu Guagusa and its neighbors particularly the *teff* producing areas. Traditional agriculture by itself contributes a lot for decline of crop production in the area. Traditional trashing, sowing and transporting, poor storing mechanism, insects like weevil, termites, army worms and rodents especially in the *qolla* agro climatic zone became the major factors that affect agricultural productivity in district (*Ibid*). The expense of fertilizers and the inaccessibility of information about markets and fluctuation of prices could also be taken as other limitations in the study area (Informants: Yenew, Tede, Tadele, Gungol).

No.	Types of crops	Local Name	Scientific Name
1	<i>Téff</i>	<i>Téff</i>	<i>Eragrostis téff</i>
2	Wheat	<i>Sindie</i>	Tritium Valgare
3	Maize	<i>Bekolo</i>	Zea Mays
4	Barley	<i>Gebbs</i>	Hordeum Vulgaris

Sources adopted and modified from Azeze Getenet “The Environmental History of Dajan Woreda in the Tewienth Century” (M.A. Thesis in History, Bahir Dar University, 2013), p . 32; Ayu Guagusa Woreda Agricultural and Development office, 2011) ^[3].

The Mode of production

Ayu Guagusa woreda was one of the most important grain producing areas in the Awi Zone, agriculture was still carried out by using traditional methods: labor intensive and unimproved farm tools. Oxen plow (*maresha*), Sickle, *lameda*, *makofria* and axe were the most important farm implements in the district. Artisans actively participate in producing, repairing and sharpening farming tools.

Makoferia were usually used to dig slopes and unsuitable plots that were not worked by the plow. This tool was mainly used by peasants in *qolla* agro-climatic zone of Ehudet kebele due to two important factors. The first one was difficult terrain and unsuited to plow cultivation. Second, it was an important implement for farmers who have no oxen. The crop was harvested by cutting with sickle. After cutting and threshing, peasants go through the grain using aid *lameda*

(seems like spoon made from wood). This material was used to separate the crop from straw excluding *teff*. Finally, seeds selected before and after harvesting for the following season. The grain productions were stored out door in container called *gottera* and indoor containers called *gotta* (Ayu Guagusa Woreda Agriculture and Development office, 2011) ^[23].

As far as farming practice was concerned, virtually all farm work involves human manual labor. Some the farm activities include plowing, threshing, caring grain from the field to the dwelling areas and threshing floor, multiplying and transferring plants, weeding, mowing and winnowing. Peasants in Auy Guagusa woreda were relatively hard workers. However, it was difficult to estimate annual labor inputs and the relationship between labor input and grain output. The working hours were in general, "from sunrise to sunset especially during the weeding and harvesting seasons." The level of output was strongly related to the amount of labor employed in the production process. Males were more preferable than females in terms of plowing and threshing. Crops were harvested with traditional sickles. The crops were spread on a patch of earth floor known as *Awdma* and threshing was done by letting farm oxen walk around. This mechanism has been two disadvantages: loss of large portion of harvest, labor and oxen power wastage. The oxen tramp many hours a day and men lose lots of energy unnecessarily (Informants: Tedele, Bitew, Shababaw). Family labor was the basis for farming and the amount of family labor was closely related to the number of adult males and females. There was a certain level of division of labor between members of the family. The activities like land preparation, plowing, sowing, harvesting, threshing, winnowing were mostly men's work where as food preparation, fetching water, firewood milking preparation and grinding flour were the duties of women. In addition, women participate in weeding and harvesting to transport harvested crops from field to threshing

field. The major tasks of boys were keeping livestock and protecting crops from wild animals such as monkey, apes and birds. Girls usually helped their mother at home and fetch water. Both boys and girls helped their parents in weeding especially if they were grown up (Informants: Mama, Azele, Embet).

Social organizations have been playing a crucial role in weeding and harvesting crops in a planned manner and consolidate the life of the community in the study area. There were traditional co-operative systems through which farmers render help to each other, which were known as *Wanfel*, *Debo* and *Meqanajo*. The communities also participate in numerous socio-cultural institutions. These socio-cultural institutions were able to establish strong bond among the community of the district in both bad and good times (Azeze, 2013:37; Ayu Guagusa Woreda Agriculture and Development office, 2011) ^[3,7]. *Wanfel* was an arrangement of labor access where by friends or peer groups come together to plow harvest thresh or weed. Having several children was advantageous in summoning more labor. The availability of children's labor particularly in the peak period of cultivation and weeding was crucial for productivity and labor intensive and time consuming activities. Peasants paid great attention to weeding as the yield mostly depends on the intensity of weeding (*Ibid*).

Dabo was the other arrangement usually villagers arranger among themselves for under taking collective endeavors to withstand problems of deficiency of man power in their individually owned farm. Farmers who think for instance that he cannot possibly make his field ready for the sowing of seeds in time may call up the collective help of the whole village. The same was true in weeding. *Debo* was the manifestation of principle of economic production and value of individuals. *Meqanajo* was the other way of collective organization. It was used solely for plowing since some farmers own only one ox. *Meqanajo* was an arrangement

whereby a person who owns a farm ox joined with another person and the pair of farm oxen was used to plough first one farm and then the farm of the partner. However, after the land reform the number of owners of pair of farm oxen has been also increased due to land distribution in Ayu Guagusa Woreda(Informants: Kulacha, Gungol , Shababaw).

Livestock Rearing

The largest livestock population in Africa has been in the Ethiopia. Cattle, sheep, goats, donkey, horses, camel and mule includes under the livestock population. Livestock were important for the economic value of meat, dairy product, wool, hides and skin. They were used as sources of transportation. They were also very important in providing a basis for honor and prestige with the community irrespective of quality and quantity (Azeze, 2013:38) ^[7]. Livestock production was the second important source of income next to the crop production in the study area.

The contribution of animal rearing to the economy was high in terms of draft power, transportation, manure, milk, meat, egg and cash. Oxen were the only means of draft power in the Ayu Guagusa woreda. Threshing and plough unthinkable without the oxen draft power. Peak animal like donkey and horse were used as a means of transportation. Donkey was mostly used to transport crops from *Awdma*, water from the steams and charcoal to the local market. Livestock rearing in the study area was deterioration because of the shortage grazing land (Informants: Kulacha, Gungol, Shababaw; Mikias, 2007:52) ^[21].

The Harshness of Environmental Alteration and Condition in Ayu Guagusa Woreda

The formidable issue in Ethiopia which has been confronted for last several decades was environmental change. This problem appears to have been pronounced in the highland parts of Ethiopia. Inconsistently, there was still a wide spread and adequate fauna and flora in the region. Climate change was one of the

environmental challenges encompassing a diverse mixture of society each with a distinct geographical, cultural, political system and economic status. Climate change might have stronger impact in the tropics than in the temperate climate. The main effect of climate change in agriculture has been experienced through changing cropping patterns; cropping yield, degradation and decline of grazing land. This would hit poor and vulnerable people (Azeze, 2013:48) ^[7]. The main objective of this was chapter to outline the main driving forces that accelerated vulnerability and severity of environmental change in the study area.

Land and Society in the Twentieth century

According to Abiy(2010) ^[1], Land was an area of the earth's surface, the characteristics of which embrace all reasonably stable or predictably cyclic attributes of the biosphere vertically above and below this area including those of the atmosphere, the soil and underlying geology, the hydrology, the plant and animal populations and the results of past and present human activity, to the extent that these attributes exert a significant influence on present and future uses of the land by man. It represents surface and space; it provides food, it filters and stores water and it was a basis for urban and industrial development, leisure and a wide range of social activities. Azeze also viewed land not only as a source of livelihood to the majority of the population but also as a source of political and economic power to all groups who aspire to hold political power in Ethiopia. Pre and post-revolutionary Ethiopia had one of the most complex land tenure systems in the world. Land issues reached a climax stage in Ethiopia particularly after the liberation since 1940s. In the late 1950s, the issue of land tenure began to be discussed among university students. Then, it spread by graduates to all corners of Ethiopia with the slogan "land to the tiller." The land question became the background of Ethiopian revolution after the abortive military coup of the 1960.

The government responded to the growing demand for land reform by appointing a land reform committee. From 1968 to 1973, a legislative draft was prepared for tenancy reform, cadastral survey and progressive income tax. Upon the overthrow of the monarch, the military government (*Derg*) in its land reform proclamation of March 1975, declared land to be the collective property of the people, redistributed land to farmers and abolished the system of tenancy and elite rule. In addition, this proclamation on land reform also created state farms and producer co-operatives to form the basis for development and food self-sufficiency. The process of laying the basis for the implementation of the 1975 land reform was achieved through the formation of Peasant Associations from the village to the national level. The Peasant Associations all peasants in the community above the age of 18 excluding former landlords (Enyew et al., 2014 :14) ^[13].

Peasant Associations were charged with the redistribution of land and to settle land related disputes in their localities in Gojjam in general and Agew Mider *Awaraja* particularly in the study area. Initially, most of them were inexperienced and they needed the support of the *Zemacha* participants (Informants: Kulcha, Gungol, Shbabaw). The first Peasant Associations in the Ayu Guagusa Woreda came into being in 1977 in Kunzina, Wondigi-Wombara, Ayu, Shusa, Shumite, Eysatie, Muchagar and sistu Dembasi kebeles. The member farmers farm their plough equally or without miss the working days. If one member misses the work, the production of missed member was less than the other members (*Ibid*).

The traditional cooperatives in Ayu Guagusa woreda were dated back to the pre-reform period. The people of each locality of the district have used traditional cooperatives to render help to each other or to solve common problems until the present day. In the initial years of the establishments of Peasant Association cooperatives and the implementation of land

redistribution, the peasants of Agew Mider Awaraja particularly Ayu Guagusa woreda those who had formerly been tenants, laborers and poor farmers showed their support to the government. In 1981, they had active participation in the formation of Peasant association cooperatives in their own kebeles (Sistu Dembasi, Shumite, Eysatie). The centers of cooperatives distributed the salt, coffee, soap, sugar, kerosene and Blanket to the members in the study area (*Ibid*). The socialist government also introduced villagization, resettlement and other programs to instruct the ideology, socialism into the rural peasant (*Ibid*).

Viliagization Program during the Military Regime in Ayu Guagusa Woreda

According to Ojulu, villagization refers to the resettlement of people from scattered areas into villages to provide basic social services and infrastructure. It was the concentration of the population in villages as opposed to scattered settlements so as to ensure the distribution of services such as health care and education. The main objective of villagisation was to provide or improve access to basic economic and social services. He defined villagization as the collection of scattered settlement pattern of rural populations into a nucleated form of villages to sustainably supply rural communities with social and economic infrastructures so that they can improve agricultural production and productivity. This program was carried out in Ethiopia during the military regime had multipurpose schemes. Ethiopian villagaization campaign began in late 1985. It was intended to move the majority of the rural population into the new villages in the following year. The central objective was introducing a systematic land use and land recovery program through collective and coordinated effort. It aimed to provide peasants with medical care, educational facilities, electricity, safe drinking water and other social services (Azeze, 2013:61) ^[7].

The Villagaization program was undertaken in Agew Mider Awaraja in general and Ayu Guagua

woreda in particular since 1986. This program mandated by the government agents to convince the local peoples with the possibility of good and improved life in the villages. After discussion with local peoples, it was conducted by recruited men from different kebeles in the study area. Ambaresta, Muchagar, Gurja Kidanmihertie, Gurja Marium, Dembasi Marium, Dembasi Aboa, Dembasi Gabriel, Wondigi - Wombara, Ambala, ChachaKibreta and kuper were the kebeles that villagization scheme took place in the district (Informants: Gungol Tegene, Shabbaw Gabrie, Kulcha Gelay). The program resulted excessive cutting down of trees which caused deforestation due to different activities such as construction of house, kitchen, toilet, an assembly hall, modern grain stores, flour mills, collective shopping, offices, clinics, elementary and senior high schools, fuel and recreational places. In Addition to this, villigization had negative effect from the economic and environmental point of view such as the concentration of people in a new village had contributed to over grazing and soil degradation (land degradation), peasants in the new village did not allowed to grow garden and rearing animal. The contributing factor caused degradation of agricultural land has been the population pressure (*Ibid*).

Land use /Land cover change

Land use and land cover change was dynamic transformation and demarcation of the land function and structure in to different purposes which fits the desires of the community such as agriculture, settlement, infrastructure and grazing. It was a continuous and dynamic change of land structure. As Azeze Getenet stated "land use change played profound role in environment and agricultural problem more than the impact of population growth." According to Azeze, land use change was associated with cause and consequences of land use and land cover change. The change in land cover leads to the change in land use. Population growth was the sole driving force for land use and land cover

change in Ethiopia. The causes of land use/ land cover change could be categorized in to proximate driving forces and underlying driving forces. Proximate (direct) causes were immediate actions of local people in order to fulfill their needs from the use of the land. These causes included agricultural expansion, wood extraction, infrastructure expansion and others that change the physical state of land cover. Land use/ Land cover change has major impacts on biodiversity, earth, climate and hydrology (Abiy, 2010:9) ^[1].

The land tenure system and the political administration also played an important role for the land use patterns of Ayu Guagusa Woreda. Following the downfall of the Derg regime in the 1991 created a period of uncertainty about the future of land rights in Ethiopia. The transitional government of Ethiopia announced the continuation of the land policy of the Derg regime. In 1995, state ownership of land was instituted in Ethiopia's new constitution. The present land policy allowed rural households to hire labor to work on their fields (Azeze, 2013:67) ^[7]. Land leasing, sharecropping and lending of land were legal and widely practiced. However, buying, selling and mortgaging land were still prohibited. The last land redistribution in the Amhara region was declared and undertaken in February 1997. Then, the land certified in Amhara regional state in general and Ayu Guagusa woreda, from the former territory of Ankesha Guagusa woreda in particular in the 2002 (Ayu Guagusa Woreda Land Administration and land use office, 2012) ^[23]. A primary certificate was a land use certificate for the Ayu Guagusa woreda included in the Book of Holding and issued after the registration. The land-using households have received a certificate. Certification was a process of registering land under holding and issuing the certificate as evidence such rights in land were legally secured. The Book of Holding contains the official certificate showing that those named within were the rightful users of the location. In

order to specify the location of the packages even further, the names of the landholders to the north, east, south and west were recorded. The fertility and present use of the land were also described. The Book further lists the responsibilities of the land user, for example to use the land in a sustainable manner. Inside the Book, a precise description of the packages that together constitute the holding of the land user is given, including specifics of the area such as the name of the place where they were changes of land users or changes in the composition of the land holding could also be entered in the book. The ultimate objective of certification was to ensure that holders have long-term holding rights (Enyew et al., 2014 :15; Ayu Guagusa woreda Agricultural and Development Office, 2011) ^[4,13].

Effects of Environmental Degradation and Measures taken to Rehabilitate

Effects of environmental Degradation

The scale at which human activities threaten the natural environment has been increased dramatically in the last three decades. Humans were agents for environmental change. Deforestation and land degradation were impairing the capacity of forests and the land to contribute to food security and to provide other benefits such as fuel wood and fodder in Ethiopia. Ethiopians were facing rapid deforestation and degradation of land resources. The increasing population has resulted in extensive forest clearing for agricultural use, overgrazing and exploitation of existing forests for fuel wood, fodder and construction materials (Badege, 2001:1) ^[9].

Likewise, the major causes of environmental degradation of the Ayu Guagusa woreda in Awi Administrative zone were overgrazing land, deforestation, lack of awareness among the local people, demographic pressure, traditional farming system, wildfire and planting acidic plants such as eucalyptus tree (Ayu Guagusa woreda Rural Administration and Land Use Office, 2012) ^[6]. The critical outcomes of the

environmental degradation and change in the study were deforestation, land degradation, decline of agricultural productivity, crop failure, seasonal migration crisis of fauna and flora, wetland crisis, landslide and flooding, severely decline of biodiversity, soil erosion and insecurity of wildlife (*Ibid*).

Measures Taken to Rehabilitate

Climate change was threatening the lives and livelihood of the rural poor in Ethiopia. Environmental protection system was a very recent phenomenon in Ethiopia historical framework. The Ethiopian rulers follow different principle and patterns of measures regarding the environment beginning from the great famine in the state. From the introduction of Eucalyptus tree from abroad to alleviate shortage of fuel wood in Addis Ababa and its vicinity by Menelik II up to the fall of Derg regime. They were taken different measures such as afforestation and reforestations to conserve soil and forest (Azeze, 2013:83) ^[7]. Agroforestry and social forestry practices, plantation forestry and conservation of the remaining forests were proposed as a strategy for physical recovery. Social and policy issues such as participation of the local people in natural resource management and the existence of clear land and tree tenure policies were critical for the long-term sustainability and expansion of forests in Awi zone particularly in the Ayu Guagusa woreda according to the agriculture and development office.

According to information obtained from office, the rehabilitation measures in the district were reforestation, afforestation, gave awareness for the local peoples, terracing, crop rotation, animal manure and counter plough. Those measures helped to preserve environmental degradation and maintained soil fertility in the district.

Conclusion

Environmental history was the study of the relationship between humans and nature in the past. It was established as a new discipline in the 1977 at the American society for environmental

history. This discipline stated three levels, has two significant characteristics and the most important uses. Its study in Africa lies in its emphasis on colonial capitalism and imperialism as environmental contexts and processes. African environmental history has been dominated by analyses of the colonial experience and its legacies. Environmental degradation and perpetuated to multi-faced environmental problem in the continent was results of colonialism. But, Environmental history was the most ignored sub-discipline East Africa especially in Ethiopian historiography. This was partly due to the emphasis of several historical studies for political centers and political elites. In similar to other parts of Ethiopia, the environmental history of Northwest Ethiopia in general and Ayu Guagusa District in particular was not studied efficiently.

Ayu Guagusa district located Awi Administrative zone. It has climatically has three zones and populated by ethnically diverse. The diverse peoples in the study area were practiced traditional agricultural system to produce the maize, pepper corn, wheat, *téff*, *Dagussa*, barely and bean. Those agricultural products hindered by pests, disease (root roch, Ascohyta Blight and Wilt) snow, unseasonal rainfall and problems of infrastructures. After the implementation of the 1975 land reform was achieved the formation of Peasant Associations from the village to the national level in Agew-Mider *Awaraja* in general and Ayu Guagusa woreda in particular. Then, the socialist government also introduced villagization, resettlement and other programs to instruct the ideology into the rural peasant.

The Villagization program was begun in Agew Mider *Awaraja* in general and Ayu Guagua woreda in particular since 1986. This program took place in the study area from the kebeles of Ambaresta, Muchagar, Gurja Kidanmihertie, Gurja Marium, Dembasi Marium, Dembasi Aboa, Dembasi Gabriel, Wondigi -Wombara, Ambala, Chacha Kibreta and kuper. This program negatively affected peoples in the

economic and environmental point of view that had contributed to over grazing and soil degradation (land degradation). This land degradation rehabilitate by measures such as reforestation, afforestation, gave awareness for the local peoples, terracing, crop rotation, animal manure and counter plough in the district.

Acknowledgment

In the first place, I would like to express my deepest and heartfelt gratitude to my friend, Sentayhu Belay, PhD. Candidate at Bahir Dar University. He assisted me in giving the comment in my article and relevant information about the publication website. His assistance, support, encouragement and patience are highly appreciated. I am also grateful to my informants especially for farmers, who have patiently shared their ideas with me about the environment of the Ayu Guagusa district.

Conflict interests

The author has no declared any interest of conflicts.

References

- [1]. Abiy Debay. "Land use/Land covers Dynamics and Soil Erosion Risk Analysis, for Sustainable Land Management in North Central Ethiopia: The Case of Antsokia-Gemza Woreda." M.A. Thesis in Environmental Science, Addis Ababa University, 2010.
- [2]. Alemu Alene. "Indigenous Pest Management Mechanisms in Ankesha Guagusa Woreda (District), Northwestern Ethiopia." *International Journal of Innovative Research and Development*, Vol. 3, Issue 5, 2014:488.
- [3]. Ayu Guagusa Woreda. Administrative office, 2020.
- [4]. Agricultural and Development office, 2011.
- [5]. Cultural Tourism Office, 2011.
- [6]. Rural administration and land Use office, 2012.
- [7]. Azeze Getenet. "The environmental History of Dajan Woreda in the twentieth century." M.A. Thesis in History, Bahir Dar University, 2013.
- [8]. Bahru Zewde. *Society, State and History: Selected Essays*. Addis Ababa: Addis Ababa University Press, 2008.
- [9]. Badege Bishaw. "Deforestation and Land Degradation in the Ethiopian Highlands: A strategy for physical Recovery." *Center for*

- African Development Policy Research* Vol.1, No.1, 2009:5-18.
- [10]. Beinart, William. "African History and Environmental History." *African Affairs*, Vol. 99, No. 395, Oxford University Press on behalf of The Royal African Society, 2000:270.
- [11]. Carruthers, Jane. "Environmental History and the History of Biology." *Journal of the History of Biology*, University of South Africa, Pretoria, 2011:6.
- [12]. Cronon, William. "The Uses of Environmental History." *Environmental History Review*, Forest History Society and American Society for Environmental History, Vol.17, No.3, 1993:12-19.
- [13]. Enyew Adgo et al. "Impact of Land Certification on Sustainable Land Resource Management in the Amhara Region, Ethiopia." DCG Report No. 75, 2014, p.14.
- [14]. Getnet Tadele. "Giving Back to the Community: Community Development Projects Implemented by Academics in Ethiopia." *Bridging Gaps and Building Opportunities: Reflections on My Experience of Engaging in Community Development in Azena* Addis Ababa Ethiopia, 2016, p. 55.
- [15]. Gezachew Andarge. "Environmental History of Gozamen Woreda in The Case of Chemoga watershed in the Twentieth Century." M.A Thesis in History, Bahir Dar University, 2012.
- [16]. Hughes, J. Donald. *An Environmental History of the World: Human Kinds Changing Role in the Community of Life*. London: Taylor and Francis Group, 2001.
- [17]. "Three Dimensions of Environmental History." *Environment and History*, Vol. 14, No. 3, August 2008, pp. 319-33.
- [18]. Kwashirai, C.Vimbai. "Environmental History of Africa." *Encyclopedia of Life Support Systems (Eolss)*.
- [19]. Lipsky, Gorge. *Ethiopia Its People Its Society Its Culture*. United State Printed Service: U.S.A, 1962.
- [20]. MacCann, James C. "The Plow-and the Forest: Narratives of Deforestation in Ethiopia 1840-1992," *Journal of Environmental History*, Vol.2, No.2, 1997:138-159.
- [21]. Mikias Amare. "Determinants of Farm Household Fertilizer Application on Teff :A Case Study of Ankesha Woreda of Awi zone, Amhara National Regional State, Ethiopia." M.A. Thesis in Development Studies in Environment and Development, Addis Ababa University, 2007.
- [22]. Mulvihill, Peter R. et al. "A Conceptual Framework for Environmental History in Canada's North." *Environmental History*, Vol.6, No. 4, Oct. 2001, pp. 611-626.
- [23]. Nienhuis, Piet H. *Environmental History of the Rhine – Meuse Delta: An Ecological Story on Evolving Human- Environmental Relations Coping With Climate Change and Sea Level Rise*. Springer, 2008.
- [24]. Ojulu Boka. "The Contributions of Villagization Program to the Lives of Villagers: The Case of GOG WOREDA, Gambella Regional State, Since 2010/11." M.A. Thesis in Social Work, Addis Ababa University, 2017.
- [25]. Padua, Augusto. "The Theoretical Foundations of Environmental History." *Escudos Avocados*, Vol.24, No.68, 2010, p.81
- [26]. Pawson, E & Christensen, Aagaard. "Environmental History." *The International Encyclopedia of Geography: People, the Earth, Environment and Technology*, Wiley Blackwell. Forthcoming, 2015, p.1
- [27]. United Nation Organization Environmental Program towards a Green Economy, (Dec. 2011).
- [28]. Williams, Michael "The Relations of Environmental History and Historical Geography." *Journal of Historical Geography*, Vol.20, No.1, 1994, pp. 3-21.



INFORMANTS

No.	Name of Informants	Sex	Age	Place of Interview	Date of Interview	Remark
1	Azele Workie(Wozero)	F	70	Azena Town	18/7/2012 E.C	She is householder and detailed information about the labor division.
2	Bitew Ayele(Ato)	M	75	Azena Town	18/7/2012 E.C	He is farmer and noted about the mode of production and problems of the crop production in the study area.
3	Emama Belay(Wozero)	F	78	Azena Town	18/7/2012 E.C	She is householder and revealed about the labor of the division.
4	Embet Kassa(Wozero)	F	77	Azena Town	18/7/2012 E.C	She is householder and gives brief information about the labor of division.
5	Gungol Tegene(Ato)	M	82	Azena Town	18/7/2012 E.C	He is trader in the Azena town and vividly reflects about the land and villagization of the Ayu Guagusa woreda.
6	Jember Amero(Ato)	M	76	Azena Town	18/7/2012 E.C	He is farmer and stated clearly about the mode of production and problems of the crop production.
7	Kulacha Galey(Ato)	M	83	Azena Town	18/7/2012 E.C	He is farmer and gives detailed knowledge about the social organization, mode of production and villagization of the Ayu Guagusa woreda.
8	Shabaw Gabrie(Ato)	M	70	Azena Town	18/7/2012 E.C	He is farmer and noted about the land and villagization of the Ayu Guagusa woreda.
9	Tadele Bogale (Ato)	M	73	Azena Town	18/7/2012 E.C	He is Farmer and stated briefly about the mode of production and the problems of the crop production.
10	Tadele Tefer (Ato)	M	70	Azena Town	18/7/2012 E.C	He is farmer and gives detailed information about the mode of production and the problems of crop production.
11	Tamrie Kassahun (Ato)	M	65	Azena Town	18/7/2012 E.C	He is farmer and showed briefly about the agricultural potentials and major crop production in Ayu Guagusa Woreda and its Mode of production.
12	Yenew Tessma(Ato)	M	85	Azena Town	18/7/2012 E.C	He is farmer and has detailed knowledge about the problems of crop production.