

Home-Garden Agro-Forestry Practices and Its Contribution to Rural Livelihood in Dawro Zone Essera District

Bekele Tona Amenu
Jimma University, P.O.Box, 307, Jimma, Ethiopia

Abstract

This study was conducted to assess the home garden agro-forestry practices and its contribution to rural livelihood in the Essera district, Dawro zone. Systematic selection technique was used to select a total of 40 households for data collection. Evolution of the home garden agro-forestry practice, its current species composition as well as both economic and environmental contribution of this practice for societies in the study area were assessed. For this study sex status and occupation of the respondent households were studied to know the contribution of the home-garden agro-forestry system in the study area. The study result showed that the population of the study area was benefited from home garden agro-forestry practices. Home garden Agro forestry has potential contribution to enhance the livelihood of the households. Farmers mainly practice home garden agro forestry for economic purpose such as household income, food for consumption, fuel wood etc. The study result also showed that the households give high priority to the development of home garden agro forestry and also the trend of practice is increasing. The study result shows that home garden agro forestry has a lot of contribution to solve livelihood problems of local peoples. Therefore, attention should be given to develop (practice) home garden for environmental contribution in addition to economic purpose.

Keywords: agroforestry, home garden, Essera

1. INTRODUCTION

1.1. Back ground

Agro forestry is a dynamic, ecologically based, natural resource management system that through the integration of trees in farm- and range land diversifies and sustains smallholder production for increased social, economic and environmental benefits (Leakey, 1996).

Land use system and practice in which forest trees, livestock, and arable land (for crops) are integrated on the same unit of land and managed to give yield on sustainable basis either simultaneously or sequentially. It is a practice that is economically sound and culturally compatible. Cultivating trees, agricultural crops and pastures and/or animals in intimate combination with one another spatially or temporally is an ancient practice that farmer have used throughout the world. There are several types of traditional agro forestry practice in different part of our country. Coffee shade based, scattered trees on the farm land, home gardens, woodlots, trees on grazing land, etc. are, same of the known examples of traditional agro forestry practices (Dechasa, 1990).

Nair (2008) report indicates that home garden agro forestry is an age old and time-tested land use approach that makes the best use of nature's goods and services. In tropical region home garden agro forestry practices have been a way of life for century for smallholder farmers (Kumar and Nair, 2004). To this effect home garden agro forestry has been considered as one of the best land use option that helped smallholder farmers to support their family.

These home gardens are evolved either through growing food crops in the forests or establishing tree crop production systems on arable lands (Kumar, 2006). Moreover, the home garden agro forestry systems reflect the wisdom of the traditional culture and ecological knowledge of the local community (Kumar and Nair, 2004; Tangjang and Arunachalam, 2009 as cited by Zerihun et.al, 2011).

Generally, home gardening refers to the cultivation of a small portion of land which may be around the household or within walking distance from the family home gardens can be described as a mixed cropping system that encompasses vegetables, fruits, plantation crops, spices, herbs, ornamental and medicinal plants as well as livestock that can serve as a supplementary source of food and income. Fresco and Westphal specify home gardens as a cropping system composed of soil, crops, weeds, pathogens and insects that converts resource inputs - solar energy, water, nutrients, labor, etc. - into food, feed, fuel, fiber and pharmaceuticals.

The home garden agro ecosystem is one of the major production systems that developed during Ethiopian's early agricultural life. This concept has been developed around the rural setting and subsistence economy under which most home garden existed. The practice of home gardening agro forestry is now being extended to urban setting. These agro forestry systems, developed and nurtured by farmers through generations of innovation and experiment, are often cited as the epitome of sustainability, yet have been long neglected by the scientific community. Today, however, these age-old systems are receiving increasing attention owing to their perceived potential to mitigate environmental problems and providing significant economic gains, as well as food and nutrition (Soumya, 2004).

The significance of home garden agro forestry to rural livelihood is well appreciated throughout the

world. The home garden has been described as an important social and economic unit of rural households, from a diverse and stable supply of economic products and benefits are derived. Plant products harvested from home gardens improve the family food security and potential means of poverty alleviation (Zemedu, 2001).

Nowadays peoples in different areas practice home garden agro forestry as a land use system. This system of land use contributes a lot to improve the livelihood of various peoples in many part of the world.

Therefore, study was carried out to identify and enhance the importance of the system and also to investigate the existing practice and its evolution.

1.2 Statement of the problems

The depletion of forest resources and increasing demand for forest products especially of the rural people who depend on forests for livelihoods have widened the gap between the demand and supply of forest products in Ethiopia.

Finding alternative options to increase the supply of forest products to support rural livelihoods have become a fundamental concern. Home garden Agro forestry seems to have potential to provide options for rural livelihoods for different purpose of social and economic unit of rural households, diverse and stable supply of economic products, and source of income and biodiversity conservation. Ethiopia's current government policy emphasizes on the need to initiate community and agro forestry program to meet livelihood needs of the farming households. With this background this study sought to answer the following question.

Is an agro forestry program in Ethiopia generally as well as in Essera district of Dawro zone specifically, managed by government and NGO, able to deliver the benefits suggested in the literature?

Specifically, did it

- To investigate the evolution of home garden agro forestry practice and assess species composition in home garden agro forestry;
- Give improved livelihood opportunities and Offer poorer households an opportunity to increase income/security;
- Deliver environmental benefits to, and perceived by, the local population.

1.3 Significance of the study

This study can serve as the source of information or reference material for people those who interested to do relative study on this different area for the future. It also helps farmers to practice home garden agro forestry in appropriate ways on their farm land and adjacent to farm land. In particular, appropriate home garden designs for low income families and farm workers, suburban homes, public facilities and parks, and the increasing numbers of rural being constructed on former open rangelands.

Moreover, the information in this material will expand the opportunity for rural livelihood society. Results from this study can effectively create awareness for the community concerning the contribution of rural livelihood on the surrounding environment. Furthermore, land management planners can use this information in their decisions on land use in the study area and to understand the particular choices made by farmers concerning agro forestry practices.

1.4. Objective of the study

1.4.1. General objective

The overall objective of this study is to assess home garden agro forestry and its contribution to rural livelihood.

1.4.2. Specific objectives

- To investigate the evolution of home garden agro forestry practice.
- To assess species composition in home garden agro forestry.
- To assess the benefits of home garden agro forestry for livelihood.

2. LITRATURE REVIEW

2.1. Brief History and Categories of Home-gardens

It is estimated that early attempts to domesticate plants were practiced by sedentary and semi-sedentary families (Hadidi, 1984). Home-gardens are said to have been parts of human subsistence strategies since the Neolithic period (Soleri and Cleveland, 1989) and they played important roles in the process of early plant domestication and continue to be the avenue for introduction and adaptation of new crops. The earliest historical records of gardens are documented from the third millennium BC of the Near East (Brownrigg, 1985). These ancient gardens are said to have been attached to temples, palaces, and even to homes of the common people in their less elaborate forms. Traditional home-gardens (known by various vernacular designations in different cultures, viz., mixed gardens, house gardens, compound farms, kitchen gardens, dooryard gardens and homestead agro forestry) refer to the land surrounding a house on which a mixture of annual and perennial plants are grown together with or without animals and largely managed by the household members for home use or commercial purposes

(Godbole, 1998).

Home-gardens appear to have developed independently in the Indian subcontinent, Indonesia and other parts of South East Asia, the tropical Pacific islands, the Caribbean, and various parts of tropical Latin America and Africa (Brownrigg 1985, Landauer and Brazil, 1990). The last couple of decades have testified an increasing worldwide interest in home-gardens, exposing their potential for sustained subsistence farming and biodiversity conservation (Christanty, 1990; Marten, 1990; Okigbo, 1990;). In recent years tropical home-gardens have attracted much interest as sustainable agricultural systems (Rico-Gray et al., 1990 as cited by Habtamu, 2008).

2.2. Benefits of home garden agro forestry

Home gardens are believed to provide a number of benefits to families, regarding from improving nutrition and providing a source for additional household income, to improving the status of women in the household. Potential environmental benefit of home gardens may be important not only for home gardening households, but for the broader society as well (Mitchell and Hanstad, 2004)

2.3. Economic contribution of home garden agro forestry

Home garden is a part of household livelihood strategy and has gained prominence as a natural asset through which sustainable use of resources, particularly for the livelihood of poor may be achieved. Homestead gardening agro forestry system provides an important contribution to sustainable agricultural production because of their potential to meet economic, social, and ecological conditions for sustainable livelihood.

2.4. Generation of household income

The livelihood benefits of home garden go well beyond those related to subsistence and nutrition. In many cases, the sale of products produced on home gardens significantly improves the families' financial status. Home garden can contribute to household income in several ways. The household may sell the products produced in home garden, including fruits, vegetables, animal products and other valuable materials such as bamboo and wood for construction. Livestock and tree crops produced on home gardens in south western Nigeria accounted for over 60percent of family cash income. In addition to the direct earnings from sale of home garden production, production consumed by the household frees up household earnings from other purchases (Mitchell and Hanstad, 2004).

2.5. Contribution of Home-gardens to Food Availability and Nutrition

In most tropical home-gardens, food production is the first function and role. One major aspect of significant role of food production in home-gardens is to hold up continuous production throughout the year (FAO, 2004b). Most of this production is for home consumption (Christanty, 1990; FAO, 2004b), nevertheless, any marketable surplus can provide a safeguard against crop failure, as well as security for the interval between the harvests of other agricultural crops of the home-garden. The potential benefit obtained from integrating home-gardens into small holder farming system encompass: enhanced food security, income and improved rural employment through additional or off-season production, decreased risk and nutritional improvement by way food diversity, alleviation of seasonal food scarcity, and environmental gains from recycling water and waste nutrients, from shade, dust and erosion control and from maintaining or enhancing local biodiversity (FAO, 2004b). It is also stressed by Vasey (1990) that the ecological complexity of so many home-gardens favors nutritional diversity. The type of crops cultivated and the closeness of the garden to the house and kitchen assure that home-gardens contribute significantly to food security, notably because they are useful sources of micro-nutrients and vitamins, and thus play a critical role in the nutritional balance of human diet (Engels, 2002 as cited by Habtamu, 2008).

Nutrition and food supply are major aspects of home gardens. Food crops are not only widely prevalent (Caron, 1995; Mendez et al., 2001; Vogl et al., 2002), but they also provide a significant portion of the household nutritional requirement in many home gardens around the world. Any failure to provide such sustenance probably arises from ineffective setup, design and implementation of these systems (Immink, 1990). If the home gardens are large enough to plant a sufficient number of tubers or cereals, they can also provide the household's basic food supply. For example, Cuban home gardens are significant as food suppliers, especially because of low-paid alternate employment and minimal food provisions by the government (Wezel and Bender, 2003). Along with the nutritional benefits, home gardens provide potential food security to the householder. Since the diverse mixture of crops is harvested at different times, a constant supply of food in some form or the other is available from these home gardens, at all times of the year. Rural farmers continue to rely on their home gardens to enhance household food security against the risks presented by mono cropping systems. Home gardening contributes to household food security by providing direct access to food that can be harvested, prepared and fed to family members, often on a daily basis. Even very poor, landless or near landless people practice gardening on small patches of homestead land, vacant lots, roadsides or edges of a field, or in containers. Gardening may be done with virtually no economic resources, using locally available planting materials, green

manures, “live” fencing (Soumya, 2004).

Gardens can make an important contribution to food security as an additional food source or by supplying off-season production. In all but the coldest and driest climates, vegetables can be planted and harvested for most of the year. Trees often bear fruit or nuts at different times of the year compared to staple food crops. In tropical climates, papaya (*Carica papaya*) and banana (*Musa paradisiaca* L.) may be harvested almost year round. In subtropical areas, fruits from South America, such as feijoa (*Feijoa sellowiana*) and avocado (*Persea americana*), and from Asia, such as mandarins (*Citrus sinensis*) and jujube (*Ziziphus jujuba*) are harvested from late summer into winter, when few other fruits are available. In dry and temperate areas, relatively non-perishable nuts such as walnut (*Juglans regia*) and cashew (*Anacardium occidentale*) provide useful food and trade items that can be stored at home or sold in markets. Livestock and aquaculture are integral parts of many home garden systems, whether the climate is humid or dry. In a home garden, terrestrial and aquatic animal production can generate high levels of output and income and improve family nutrition while contributing to waste management and water and nutrient recycling. In many countries, animals are a low-cost source of high-value food containing protein, fats and micronutrients. In Latin America, guinea pigs - known locally as *boyes* - are fed on kitchen food scraps supplemented with fresh fodder; in Asia, snails are a protein source that feed on fish pond weeds and kitchen scraps (Tesfaye, 2005).

2.6. Fuel woodlots

Bender, (2003), as cited by Zemedu 2001, farm woodlots have often been promoted to provide firewood, either for domestic consumption or for sale. As far as domestic consumption is concerned, it will sometimes be appropriate for family to plant woodlots on marginal land. However, recent estimates suggest that household firewood needs may be harvested as few as fifty to hundred trees. This is most likely to be true if the trees are scattered around the farm rather than packed in to woodlots, where yields per tree is lower. The growing of firewood for sale will usually be less attractive. Almost everywhere in developing countries, farm-gate prices of firewood are extremely low.

2.7. Environmental benefits of home garden

The ecological association between people and plants in home garden is an ancient one. People and plants thrive in places that have adequate shade, shelter, light, water and nutrition. Home garden can provide environmentally sound opportunities for waste disposal. Composting is commonly used for household wastes including kitchen waste, paper, and other materials. In flood prone areas such as Ganges delta in Bangladesh, home gardens can literally anchor the family home. Plants like taro, coconut, and thatching palms hold the soil together while in undated. Home garden trees adapted to the irregular floods and rich soils, for example palm and durian, continue to provide protection around floating house (Zarihun et al, 2011).

Research conducted by Zemedu (2001) reveals that village with its home gardens is not a merely a dwelling place but also an important agro –ecosystem. It is an integrated unit in which the solar energy is channeled through the plants to animals and man, and matter is cycled and recycled. This cycling and recycling process, together with the layered plant cover, protects the soil of the home garden from exhaustion, leaching and soil erosion. Nutrient recycling is the principal determinant for ecological rationality home garden. Tree roots that penetrated as far as ten meters can bring mineral constituents in to the top soil, while fallen leaves can provide a natural protective mulching cover and bring more humus in to the soil, helping to prevent exhaustion of soils. However it is important for home gardening families not to remove ground litter or engage in excessive weeding of home garden, which can increase the risk of soil erosion.

2.8. Species Composition in home garden agro forestry.

Research conducted by Zemedu and Ayele (1995) reveals that farmers in wondo genet, which is located within Ethiopian rift valley, have been planting trees near and around homestead, along external and internal boundaries to a lesser scale as woodlots. Fruit tree, Coffee, *Cordia Africana* in most cases are planted in the home garden together with *Enset eventricosum*. Food plants (food crops and fruit trees) are the most common species in most home gardens throughout the world. This underscores the fact that food and nutritional security is the primary role of home garden. The rich floristic composition of the home garden has implied maintaining diversity in species, crop types /varieties. Wide array of products used for food (cereals, vegetables, oilseeds, tubers, fruits etc) associated with various spices and condiments that play vital roles in traditional food-making; and others including stimulants, perfumes, and fragrant/aromatic/plant shave key functions in people’s lives. In many parts of Ethiopia, the villagers’ assets are constructed around their home garden resources. Many species (e.g. coffee, korerima, tosign, timiz) occur both in home gardens and natural ecosystem. Some home garden species (e.g. Kesseret, enset, yams) have their wild relatives and kin in wild habitats while many grow in crop fields as well.

3. MATERIALS AND METHODS

3.1. Description of the study area

Dawuro is one of the 13 zones in SNNPR. It is situated 7° 14' North latitude and 37° 05' East longitude. The Zone has 5 districts (*woredas*): Loma, Mareka, Essera, Gena Bosa and Tocha, its capital, is located about 438 kilometers south West of Addis Ababa. Essera and Tocha districts, which were purposefully selected for study, were resettled with inter-zonal and intra-zonal resettlers respectively. Both Essera and Tocha Districts lie in three agro-ecological regions: *Kola* region which is within 500-1500 meters above sea level (masl) and receives 500-1,500 millimeters (mm) of rainfall; *Woyina Dega* within 1501-2500 masl and receives 1281501-2500 mm; and *Dega* at above 2500 masl and receives more than 2500 mm (Zelege.2014).

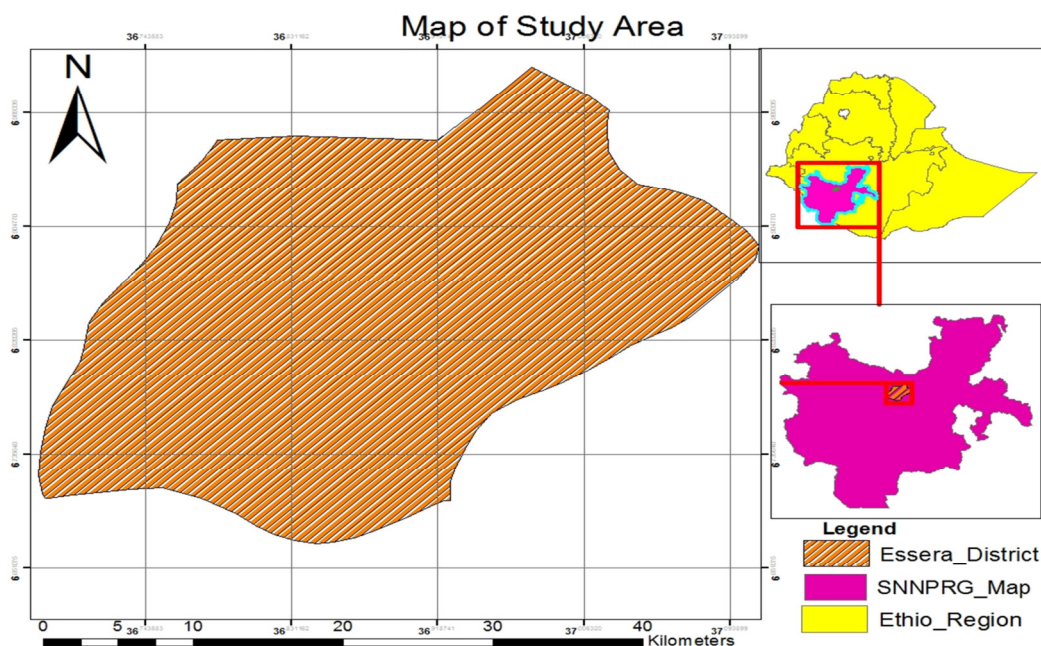


Figure 8 Map of Essera District

3.2. Method of data collection

The data was collected through sample survey method at household level. The information that was collected from secondary sources (about altitude, temperature, annual rainfall, and population status from registered information of Kebele administrative), and primary sources about the benefits of home garden agro forestry practice for livelihood, the species composition and component of home garden, and the evolution of home garden agro forestry was collected through interviewing households with open and closed ended questionnaires, and making small group discussion.

3.3. Sampling technique

The sample was taken through systematic selection technique. Because the sample selection should involve educated, illiterate, sex parts in local area communities those how practices home garden agro forestry. The sample size of the study was 40 households out of 669 households live in the Kebele. The sample was taken from households who practice home garden agro forestry.

3.4. Data analysis

The data was analyzed through descriptive statistical analysis, excel and interpreted and presented by using tables, percent (%) and charts.

4. RESULT AND DISCUSSION

4.1. Households' characteristics

A total of 40 individuals' (households) of which 60% male and the remaining 40% female were involved in the study. Households with different occupation were involved in the study. About 20% farmers, 30% workers, 40% of the respondents were daily labor and about 10% were merchants. In the study respondents with different education level status were included. About 30% of the respondents were illiterate, 40% of them can read and write, and about 30% of the respondents were educated. This states of respondents was shown in the table below.

Table 5 status of respondent on the base of sex, occupation and education levels

Respondents states		No. of respondents	percentages
Sex	Male	24	60%
	Female	16	40%
Households Occupation	Farmers	8	20%
	Workers	12	30%
	Daily labor	16	40%
	Merchants	4	10%
Education levels	Educated	12	30%
	Read and write	16	40%
	Illiterates	12	30%

4.2. Evolution of home garden Agro forestry practices

The study area was previously bare land with no forest (vegetation) cover, Forest (vegetated), and farm lands were population was sparsely settled. The respondents were responding on the coverage of the area differently. From the total household respondents, about 50% of the respondents said that the area was bare land with no forest cover, 17.5% of them said that the area was forest cover, and about 32.5% respondents respond that farm land. This coverage of the area was shown in the figure below.

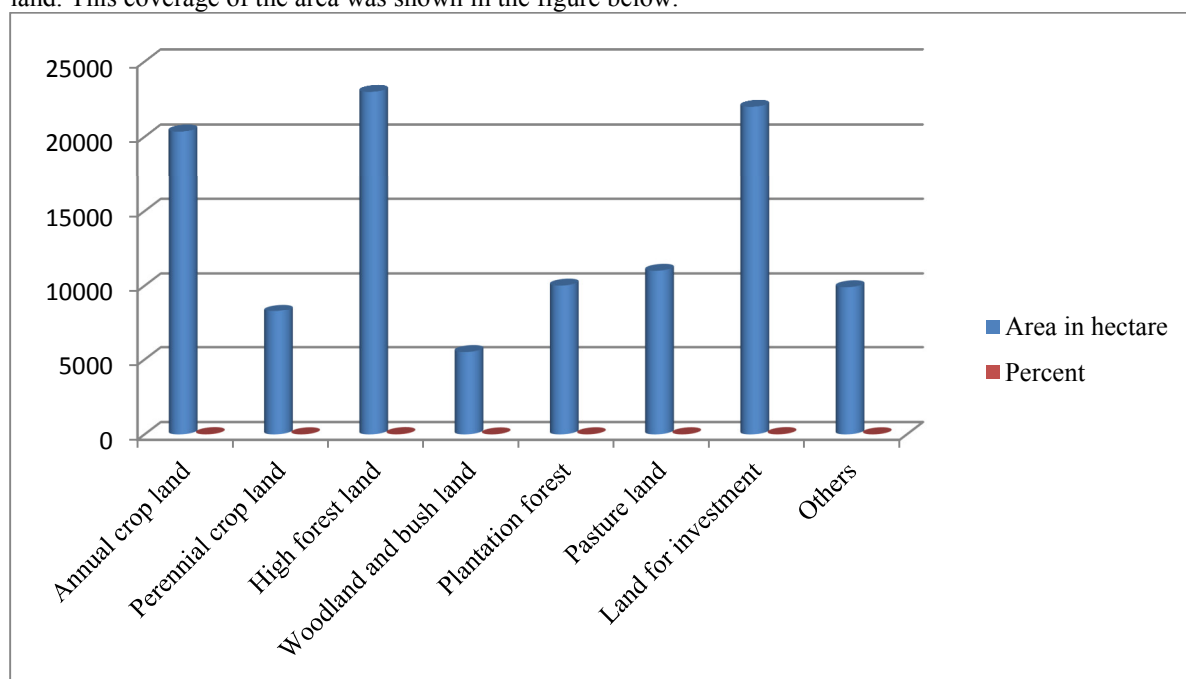


Figure 9 Land use characteristics of Essera District

Source; Survey 2017

Households differ in their time of settlement in the area. Most them started to settle in the area before 15 years ago. As their settlement time varies, the time they started to practice home garden Agro forestry also varies. This trend of variation is shown in the barograph below.

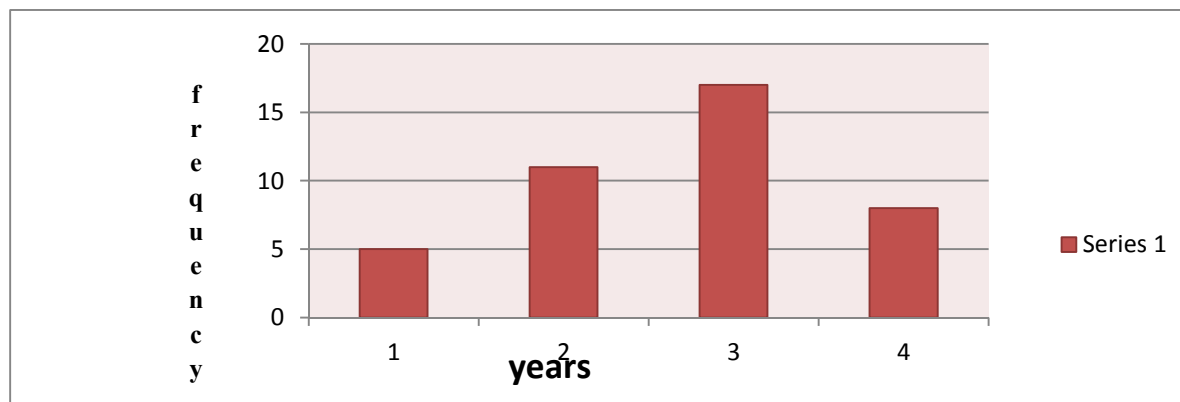


Figure 10 when home garden practices started

Figure above shows that the time of practicing home garden Agro forestry is between 5-20 years. From the interviewed households, about 12.5% started to practice 5 years ago, 27.5% started practicing 10years ago, about 40% started 15 years ago, and about 20% of the respondents started 20 years ago. This shows most of the people in the area started to practice home garden Agro forestry 15 years ago. In the past sparsely settled peoples in the study area was practice different land use around their home stead. Those practices were Agricultural activities like cultivation of maize and wheat, growing of Enset (false banana) and Chat (chata edulis). In addition to this practice, there were some trees like *Podocarpus falcatus* which grown naturally.

In the area some peoples were resident from the beginning of their live while most of the households were immigrant from other areas. As more people come and settled, the area was densely populated. There are some factors which lead to dense occupation:

First, immigration of peoples from other areas and Secondly, consideration of the study area under suburban. As a result shortage of land for Agricultural activity was occurred. Then through time the area was starting to change from farm land to home garden based land use system. This finding agrees with the Soemarwoto and Conway (1992) report that in parts of china, the pressure of high population and limited availability of land and nutrient resources have forced development (innovation) and intensity in closely managed home garden system. To fulfill their different needs and improve their livelihood many people’s started to practice a wide variety (different) types of species such as fruit trees, fuel woods, shade trees and others. As the study shows that home garden was established as a new technology because of farmer’s interest to fulfill their survival needs. The respondents said that the trend of home garden agro forestry practice has been increased.

4.3. Species Composition in the Home garden

Plant species assessment results showed totaling 19 different cultivated species and crops were identified in home garden. The most cultivated (common) species in the home garden were apple, cabbage, coffee, *Cordia africana*, *Enset Ventricosum*, Banana, Chat and *Eucalyptus globulus*. Pineapple, cabbage, *Cordia africana*, *Enset ventricosum*, Banana, Chat and Eucalyptus were found in 25, 55, 4, 28,12,5 and 32% of assessed home garden, respectively. Usually, these species were cultivated in the home garden for consumption and sale. Some species was cultivated for fuel wood and construction. However, the purpose of cultivating (growing) specific species was quite different among households. Majority of the households were cultivating (85%) Pineapple (45%) and Enset (55%) in the home garden for consumption. Chat (45%) was cultivated in the home garden for sale. The assessed home garden has different area from one household to the other. The different contribution of home garden Agro forestry to society was indicated in the table below

Table 6. Plant species and their uses

Major species	Occurrence (%)	Its contribution to society in percent			
		Sale	Consumption	Fuel wood	Construction
Apple	45	75	85	-	-
<i>Podo carpusfalcatus</i>	10	45	-	5	65
Banana	12	45	55	-	-
<i>Eucalyptus globlus</i>	15	20	-	35	35
<i>Cata edulis</i>	5	45	35	-	-
<i>Hagenia abyssinica</i>	5	15	-	12	20
<i>Juniperus procera</i>	15	22	-	35	35
<i>Cordia africana</i>	4	25	-	10	10
<i>Enset ventricosum</i>	55	15	55	-	-

4.4. Benefits of Home garden Agro forestry practices to livelihood

The study showed that home garden provides a lot of benefits for local communities to improve their livelihood. The respondents said that the major benefit they obtain from home garden was economic benefits (contribution). The economic contribution of home garden Agro forestry in the study area were as source of food supplement by direct consumption of the products and sale of Pineapple, and *Cata edulis* was found to help households to purchase grain from local market. The other contribution was sale of products to obtain household income, for fuel wood, construction, and as a shade for coffee. Previous research on the benefits of home garden agro forestry varied considerably. For example, Mitchell and Hanstad, (2004) reported that home garden are believed to provide a number of benefits to families, regarding from improving nutrition and providing a source for additional house hold income. Wezel and Bender (2003) as cited by Soumya (2004) result shows Cuban home gardens are significant as feed suppliers, especially because of low-paid alternate employment and minimal food provisions by the government and also Abebe et, al, (2008) as cited by Zerihun et.al;(2011) reports small holder farmers attained feed security through own production and purchasing from local market.

The households mainly focus on economic contribution; they don't focus on environmental contribution of home garden. Some respondents respond that home garden provide environmental benefits like shade for their livestock and shade to coffee.

This finding agrees with Zerihun *et, al;* (2011) report that home garden can provide different environmental benefits. It can provide environmentally sound opportunities for waste disposal.

The different contribution of home garden Agro forestry was indicated in the table below.

Table: 3. Response of Households towards contribution of home garden

Contribution of home garden	Response	
	frequency	Percentage (%)
For consumption (food supplement)	40	100
Income generation to Households	32	80
Fuel wood	17	42.5
Construction	14	35
Environmental contribution	12	30

The above table shows that home garden Agro forestry contribute various benefits to households. The study result indicated that home garden Agro forestry contribute food for consumption to about 100% households, products to source of income for 80% households, Fuel woods source to 42.5%, as construction purpose to 35 respondents, and environmental benefit to about 30 respondents.

Home garden Agro forestry has high contribution as food for consumption. Some respondents were not sale home garden products to get income because they obtain income from other sources like salary. More than half of the total respondents respond that they was not depend on home garden as a source of fuel wood because they mainly grow fruit trees in their home garden that were used for food and they obtained fuel wood by purchasing from the local market.

5. CONCLUSION

Home garden agro forestry has potential contribution to enhance the livelihood of the households. Farmers mainly practice home garden agro forestry for economic purpose such as household income, food for consumption, fuel wood etc. Most of the households in the study area depend on home garden agro forestry products to fulfill their basic needs or consumption purpose even though they have agricultural land to obtain additional products for their economic growth. Households combine different types of species in their home garden like fruit trees, annual crops (i.e. maize), fuel wood and shade trees etc. The major species in the home garden were Coffee, Pineapple, *Enset eventricosum*, Banana, *Cata edulis* etc. These species were mainly cultivated in their home garden for various uses like consumption, sale, fuel wood and others. The study area was bare land, forest covered and farm land. Local people in the area practice different land use such as Agriculture (Cultivation of maize and wheat), growing of coffee, Enset and Chat around their homestead. Through time as more peoples immigrate and densely occupy the area, this land use was changed to home garden based land use system due to shortage of land for agricultural purpose. To fulfill their different needs and improve their livelihood most of the households started to practice home garden agro forestry 15 years ago with different types of fruit species, fuel wood, shade trees and others. Generally, the study result shows that the households give high priority to the development of home garden agro forestry and also the trend of practice is increasing.

6. RECOMMENDATION

The study result shows that home garden agro forestry has a lot of contribution to solve livelihood problems of local peoples. Households in the area were more initiative to diversify the component and develop home garden agro forestry and also mainly practice for economic purpose with economically important crops.

Therefore:-

- More research should be done on home garden agro forestry.
- Paying due attention to home garden based agro forestry in order to improve the importance of the system.
- Researchers should give attention to provide suitable condition for communities to use improved species for their home garden development.
- Attention should be given to develop (practice) home garden for environmental contribution in addition to economic propose.

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