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Income Generating Activities of Women on Home Garden Farming in Damot Gale District (Woreda) of Wolaita Zone, Southern Ethiopia.

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Abstract
A sample of 200 households and their home gardens were inspected to study the role of women in income generating activities of home garden farming in 10 kebeles of Damot Gale woreda in 2014/2015. 20 households were selected from each kebele. The total selected households were 200, of which 100 (50%) households were male headed, and identified by simple random sampling method and the rest 100 (50%) were female headed households. Data was collected from total 200 households through interview, field observation, conducting discussion with informants, and asking questions. Data from 100 male headed households and from 100 female headed households were collected and used to compare the role of female in income generating activities of home garden farming. Women from female headed households have full right to decide the use of resource, land and they have right to make decision on the use of land and its products. But women from male headed household's donot access land in their own right and at they not only lose their right of access to land, but are also forced to leave their marital homes and return to their places of birth. Culturally, the women are expected to indoor activities and use right of the products but have no decision making power. In general 76 crop species were listed with distinct feature of polycultural agro-system with a universal occurrence of enset (*Ensete ventricosum*) and coffee (*Coffea robusta*). 40 plant species of better price were identified. All plant species of better price were cultivated, cared, controlled and managed by men. Condiments/fragrances were cultivated, cared, controlled and managed by women in both household types and all crop species in female headed households were managed by female. Only 7 (0.03%) women from male headed households responded as they have right to make decision on the product of home gardens. In other round from 100 female headed households' 13 (0.13%) women's home gardens were cared, managed and controlled by their children or relatives. This is due to different factors such as an age case, physical problems, religious influences, financial shortage or social pressure upon the resource owner that inhibit the owner/women from the direct involvement of income generating activities on their home gardens. They could involve directly in income generating activities of home garden. In average, annual return of home garden ranges from birr 800 to 1500 in monetary value besides to home consumption.
Keywords: Damot Gale, Home Garden, Household, Income Generation, Women Activities.

1. INTRODUCTION

Home gardens are ancient and widespread agroforesty systems in the tropical and sub-tropical areas. Home gardening is reported to have first been recorded from the third Millennium B.C. of the Near East (Brownrigg, 1985). The farming system developed through processes of intensification by adopting the strategy of mixing appropriate crops, organic manuring, and diversification of the biotic components, labor intensification and space optimization. They are said to have been components of human subsistence strategies that refer to the land surrounding a house on which a mixture of annual and perennial plants are grown together with or without animals and managed by the house hold members for their uses or commercial purposes. The collection of useful plants and animals around homes have gradually led to small scale plant and animal husbandry, whose continued intensification resulted in the emergence of full scale agriculture in gardens and fields (Zemede Asfaw and Ayele Nigatu, 1995).

Since home gardens are small-scale traditional farming systems practiced around the house, their primary function is for growing various crops for home consumption (Hoyyeepoo, 1990; Rajasekaran and Warren, 1994).

It is the land surrounding a house in all directions close to the house that referred as backyard, front yard, and side yards. They are commonly referred to as back yard gardens, compound farms, Kitchen gardens, and homestead farms, house gardens, mixed gardens, horticulture, dooryard gardens, and the likes in different cultures. The presence of home gardens in different areas of Ethiopia is indicated by different names applied in different cultures of Ethiopia. They are referred to as 'Daaddaa/Emeriyaa' in Dawuro language (Mathewos Agize *et al*., 2013b), 'Yeguaro ersha' in Amharic and 'Eddo' in the Oromo language (Zemede Asfaw, 2004) , 'Daddeegoyo' in Kefa language (Feleke Woldyes, 2000), 'Daniio gade' in Gamo language (Belachew Wassihun *et al*., 2003) and Darkwa in Welayta (Talemos Seta *et al.,* 2013). Very common vernacular equivalent terms for home garden in Wolayta language are Eremya, Darkkuwaa, Daarinchchaa, Santta'aquwaa Sinta, Baasuwa,

Kariya, Soqomuwa or Soxadiya. Referring to the house, the land behind the home is said to be Darkkuwaa, Darinchchaa, Eremiya or Santta'aquwaa (backyard), the land before the house is known as Baasuwaa, Kariya, Dirsappe sobaggaa or Sinttaa (front yard). The side yards of the house are referred to as Soqummuwaa and Soxaddiya. These terms are very common in Wolayta culture and are important to indicate the direction of lands which surround the house. Limited studies have focused on the evolution of home gardens but it has been supposed that they arose from shifting cultivation to overcome resource constraints and to ascertain rights to land resources (Fernandes and Nair, 1990). Humankind apart from the nomadic life, had begun to exploit the surroundings and cultivate plants for food, medicinal and other purposes in home gardens and this helped the process of prehistoric humans (Maheshwari, 1988; Jain, 2000). Plant domestication most likely began around the dwelling of human settlements. The immediate area around the homestead offers increased availability of water, better soil fertility due to organic waste inputs and easier protection of the crop against animals. There is a close relationship between home garden and the culture of the surrounding community. As the process of plant domestication and crop evolution is ongoing it can be expected that continuously new germ plasm will develop. Consequently, home gardens contain unique and rare genetic diversity that has evolved or been developed locally. The facilitated close interactions between humans and plants within a home garden, setting many new crops have been developed in home gardens.

Ethiopia is a country of diverse agro ecologies with a long history of agriculture. It is an important world center of domesticated plants and a primary center of diversification for many important crops (Harlan 1969). The country's rich crop resources that originated through domestication, introduction, and adaptation have traditionally been conserved *in situ* in crop fields and home gardens. Home gardens critical functions in fulfilling community and household needs ranging from food provision and food security to augmenting family nutritional status, ensuring primary healthcare, income generation and fulfilling other utility functions (Zemede Asfaw, 2002).

There is no direct evidence as to when people began the practice of home gardening in Ethiopia. The history of home gardening in Ethiopia is believed to have been linked with the beginning of agriculture in the country, which dates back 5000-7000 years (Ehret 1979, Brandt 1984). In Ethiopia, home gardens come to existence under different modes of initiation, influenced by biotic, abiotic, socio-economic and cultural factors.

Home gardens are microclimates containing high levels of species and genetic diversity within large farming systems. These gardens are not only important sources of food, fodder, fuel, medicines, spices, constructional materials, aromatic species and income sources in many countries in the world, but are also important for in-situ conservation of a wide range of plant genetic resources. They are dynamic systems; their structure, composition, new species and cultivars diversity are influenced by changes in the socio-economic circumstances and cultural values of the households that maintain these gardens. These complex ecosystems close to the house where plants can be closely observed and managed makes it a convenient site for traditional plant experimentation and domestication. Some wild species are continually brought under cultivation in home gardens to renew the vigour of the germplasm for planting in large fields.

The importance of home gardens in the production of food, medicines and other use full products for human beings is widely recognized; consequently, regular attempts to improve the productivity of this widespread agro ecosystem have usually been initiated with specific objectives. They contribute to the improvement of nutritional status of rural and urban families by increasing the production of vegetables, fruits, and spices. This farming system is also an important reservoir of unique genetic diversity.

The main thrust of this study would be to assist women in the sustainable establishment of income generating activities to be undertaken in or near the home. One very striking aspect, related to the traditions of a family as a part of a large community is the key role of women in managing the garden and utilizing its produce, either in her own kitchen or by selling it in the market. Different studies indicate that the greater the amount of income under women's control the greater amount devoted to their children's education, health and nutrition. Generally incomes of women are used for the increase of the well being of the family. However it is essential to guarantee that women will have the control of the resources and the free disposal of them to implement.

The role played by women in agricultural activities varies from region to region and between different ethnic groups within the same region. Such roles are related to the culture of the people concerned. It is generally observed that women play important role in the management of home gardens as well as in the introduction and maintenance of plant diversity. Women are primarily responsible for the daily preparation of food for the family, and decide what to prepare and how to prepare it, so they exert a large influence on the composition and structure of home gardens. Women have also been found to introduce diversity in home gardens by bringing new plant species from their parental home.

Women around the world are more likely to live in poverty - just because they are women. They have less access to land, income and decision-making, all of which keeps them poor. The complexity of forces working against poor women in developing countries is now greater than ever. The traditional socio-cultural constraints that have long limited women's participation in the economy and their access to resources are now

coupled with international issues of debt, structural adjustment programmers' declining terms of trade, and war.

Gender roles, however, also depend on ethnic and cultural background of the community. Gender roles are what men and women do; on the farm, in the household, in the market place etc. It is necessary to actively specific information on how home garden is affected by the roles and responsibilities of both women and men farmers in specific socio-economic and cultural situations. Some of the key questions to achieve this goal include; to whom does the land belong? Who involves in the production? Who has power to decide on the use of home gardens? The greater the expertise and control, a person has over a resource or a production are the greater his or her comparative advantage to make decisions regarding the use of resource or production.

Gender inequality is most evident in access to land. Custom prohibits women from owning land in many countries, and this is true in most parts of Ethiopia for long periods of time. Frequently women have only use rights, mediated by men, and those rights are highly precarious. Landless rural women often depend on common property resources for fuel wood, fodder and food. Without secured land rights, women have limited access to credit - and little incentive - to invest in improved management and conservation practices. Women are more likely to make environmentally sound land management decisions when they have secure ownership and know they can benefit. Despite their reliance on natural resources, women have less access to and control over them than men.

Women manage natural resources daily in their roles as farmers and household providers. Typically, they are responsible for growing subsistence crops, and often have unique knowledge of local crop species. Women are generally the custodians of home garden and devote much of their time in care and management of the home garden. They play an important role in the management of home gardens as well as in the introduction and maintenance of plant diversity. The general tendency is for women to work in the home gardens and produce goods for domestic consumption. However, the aim of an income generating activity is to produce for the market and furthermore it can be called micro or small-scale enterprise, whether it is managed at individual or group level.

Income generating activities offer women the opportunity to join the labor force and to learn necessary, skills for involvement in economic activities. Women involved in small business development generally should have knowledge of the prevailing economic environment and business conditions. But, there does resource own and management conflicts among women and men. This is very common problem in the study area. So, NGOs and other Projects that would provide assistance to small scale income generating enterprises, the emphasis must be on orientating the women from the social welfare perspective and towards the provision of business development services in order to create income generating activities. Alternatively, many development agencies are increasing their emphasis on assisting women to secure income through their own efforts. Such approaches are often categorized as `income-generating activities' and cover initiatives as diverse as small business promotion, cooperative undertakings, job creation schemes, sewing circles, credit and savings groups and youth training programmers. Other types of support affecting women's production are considered complementary to income-generating activities.

Therefore, the findings of this study will indicate the causes of the conflicts, socio-economical, cultural and ethnical factors that bring discrimination between male and female and the factors that will influence the role of women in income generating activities on home garden farming.

The findings of this study were indicated the way how women involved in income generating activities in home gardens near their home. The findings of this study enabled to identify crop types that are grown for household consumption and for market. It raisen the awareness of the women, individually or in group to engage in income generating activities on garden farming, with the support of local government, NGOs and other stockholders through trainings and awareness creation based on the results of this research. The results of this research is also used as first step for further research in Wolaita on home garden farming of women for income generation.

3. Methods and Materials

3.1. Project Area Description

Damot Gale woreda is one of the 12 rural woredas of Wolayta zone. For administration purposes the woreda is divided into 31 rural kebeles and one town administration. The study on income generating activities of women on home garden farming was conducted in 10 kebeles of Damot gale Woreda in Wolaita zone, Southern Nations, Nationalities, and Peoples' Regional State (SNNPRS). The area is found at South Central Ethiopia between 6.4^0-6.9^0N latitude and 37.4^0-37.8^0E longitude and is located at 370 km south of Addis Ababa and 140 km from Hawassa, the capital of the Regional State.

The woreda encloses three agro-climatic zones, high land (Dega), mid land (Woina dega), and low land (kola). The Dega is above 1800masl, and Woina Dega 1500-1800masl. These climatic zones are highly degraded, over cultivated for long periods of time and densely populated with easily erodible landscape. The total population of Damot Gale is estimated to be 158,328 out of which 77,330 male and 80,999 female (2007 census)

and average population density is estimated to be 600 in per square km. Population density is very high in the Dega and Woina Dega areas compared to Kola region (below 1500masl). The Total area of Damot Gale woreda is 24,285.861 ha. Of which 22% is Dega, 49% is Woina Dega and 29% is Kola zone. Maximum and Minimum temperature of the woreda is 24 and 12 degree Celsius respectively. The average annual rainfall ranges from 900mm to 1400mm. From the total area of the woreda 3,232.234 ha, is covered by perennial crops, 15,979.37 ha, is also covered with annual crops. 1,596.5 ha, of land is occupied by vegetation and 2,399.25 ha, of land is used for grazing. The rest 1,078.5 ha, is for other uses like settlement, construction and some of it is highly degraded, rugged, and deforested.

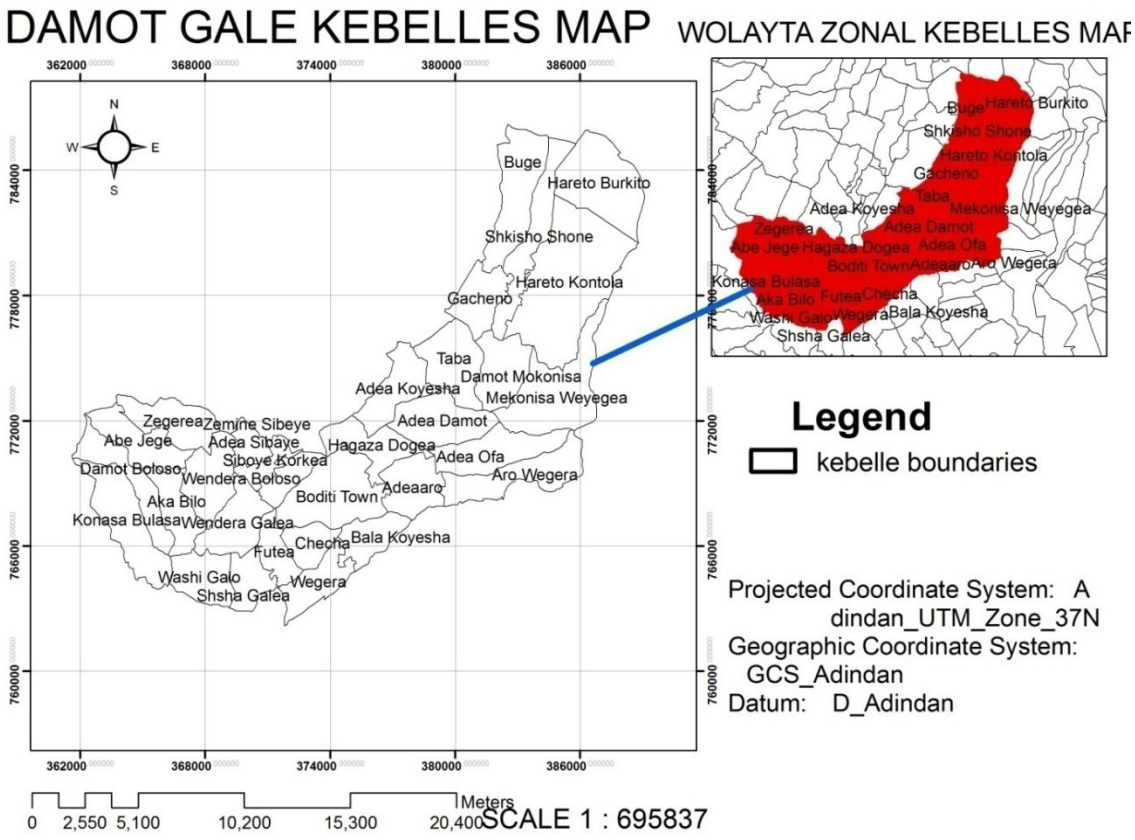

Figure 2 Admnistrative Map of Damot-Gale Woreda

3.2. Data Collection and Data Analysis

A reconnaissance survey was made in December 2014 to select kebeles and home gardens. In this field trip 10 kebeles and from each kebele 20 home gardens were selected by random identification method. The total of 200 households' home gardens were identified for this study of which 100 home gardens were female headed households and selected by purposive selecting method. The rest 100 HGs were male headed households and selected by simple random sampling method. The first field data collection was done in March 2015, and an additional field trip was made for second round data collection in June 2015. Interview-based field work was conducted with the owners of home gardens, who became our informants. Semi-structured interviews were made on plant names, planting practices, plant use systems and other traditional and socio-economic practices. For this study data were collected through field observation, plant specimen collection, herbarium studies, discussion with household members, key informants, administrators, expertises, and elders and admnistration of semi-structured interviews and using data collection formats, questioning elderly garden owners about unique and rare crops and practices, tracing garden crops through market surveys of garden products, seeds and seedlings of garden crops (Zemede Asfaw, 2002).

Plants that were found in and around home gardens and which the community described as useful were listed according to their vernacular names.

Cultural significance of species was estimated as the importance of the role that it plays with in a particular culture. This is usually synonymous with the use of a plant. The more widely or intensively a plant is used, the greater is its cultural significance. The quality of 'uses' was rated and assigned values ranging 1 to 5 according to their general contribution to peoples' livelihood.

Species importance was estimated by use value analysis, uses are categorized into three classes no use, minor use and major use, where use values scores were assigned as 0, 0.05 and 1 respectively (Phillipis, 1996).

A total of 200 home gardens have been surveyed within the study area from 10 kebeles for presence of home gardens and the proportions of different types of crops were analyzed. The occurrence of most frequent crops and their positions within each garden was studied from the detailed data collected. For this study the representative home gardens of women headed households (100 home gardens) were selected by purposive sampling method. The principal components of plant species were analyzed on the qualitative data matrix (presence or absence of crop species in selected home gardens). The constellation of home gardens and crop types were identified.

From the constellation of crop types, which crops are grown for the household consumption and which for the market were identified and the annual average income was calculated in terms of cash and kind. The owners of home gardens were interviewed using data collection formats. The data on presence and absence of the crops in selected home gardens was grouped into their categories and presented using quantitative methods in percent, ratio, and intervals in the form of tables, graphs and charts. The analyzed data was interpreted and discussed. Based on the results of this research useful comments, recommendations and suggestions were given.

4. RESULTS AND DISCUSSION

4.1. Results

4.1.1. Description of plant species in the home gardens of the study area.

A total of 76 plant species representing 30 families were recorded from 200 home gardens from 10 selected kebeles. Of these identified families, *Asteraceae* 8 (10.53%) species, *Euhporbiaceae* 6 (7.89%) species, *Brassicaceae, Mytraceae*, and *Solanaceae* each with 5 (6.58 %) species, Fabaceae, and Lamiaceae, each possesses 4 (5.27%) species, *Araceae, Cuperssaceae, Poaceae, Rosaceae,*and *Rutaceae,* each with 3 (3.95%) species, *Alliaceae, Amaranthaceae, Apiaceae, Cucurbitaceae, Musaceae,* and *Zingiberaceae*, each with 2 (2.63%) species and *Anacardiaceae, Annonaceae, Boraginaceae, Caricaceae, Celastraceae, Conuulvulaceae, Dioscoriaceae, Lauraceae, Moringaceae, Oleaceae, Rhamnaceae* and *Rubiaceae*, these 12 families each possesses 1 (1.32%) species.

From the total species encountered in the study area, 29 (38.16%) species were herbs, 21 (27.63%) species were trees, 13 (17.11) species were shrubs and 13 (17.11%) were other types. The vernacular names of all identified species were recorded. Species such as *Enseta ventricosum, Eucaltptus spp., Coffea arabica, Olea africana, Musa paradisiacal, Presia americana, Saccharum officinarum, Capsicum spp., Solanum tuberosum, Ruta chalengensis, Astemisia afra, Croton macrostachyus, Cupressus lusitanica, Chata edulis,* and *Cymbopogon citrates* were widely distributed species with high frequency.

4.1.2. Size, position and distribution of plant species in study area home garden.

Home gardens are the lands that encircle/surround the home in all directions that are the backyard, front yard, and side yards. The size of the land of home gardens in study area is depends on the total land size that individual household possesses. The average size of home gardens ranges from 0.0625 ha to 0.25 ha. The immediate land that surrounds the home at all directions is the first part of the home garden which is cared and managed by the female, whether it is headed by male or female. The women are responsible for any activities that took place in this part of the home garden and in Wolaita culture the woman who managed this part according to the culture may considered as wise and skilled. The very common and important plant species cultivated in this part of garden are fully controlled and managed by the women. This part is the closest area to the house that is said to be Darkkuwaa (backyard) and Baasuwaa or Karyaa (front) and Soqommuwa or Soxaddiya (side yards). The common plant species that cultivated in this part of the home gardens are condiments, such as *Artemisia absinthium, Ocimum lamiifolium, Ruta chalepensis, Ocimum basilicum, Mytirus communis, Artemisia afra, Cymbopogon citratus, Corianddrum sativum, Echinops hoehnelii (kebericho), Lepidium sativum* and other ornamental species like flowers. These plant species have commonly medicinal value and used as spices to make food flavor.

Next to this raw in Wolaita culture the back and side yards are fully dominated by *Coffea arabica* (Tukkiyaa) and restrict cared, controlled and managed by male. The female has no right to use the product from this part without permission of her husband. In this part with coffee trees other multipurpose species like *Croton macrostachyus, Erythrina brucei, Annona cherimola, Vernonia amygdalina, Persea americana, Cordia africana* and *Mangifera indica*. These species are very important trees used as shade trees, provide fruits, wood for construction and fire, moderate micro climate, maintain soil fertility, prevent soil erosion and improve soil aeration.

The third part of the home garden that found between Coffee and Enset layers is the large open space in which the most important seasonal plants are cultivated. Some of these species are vegetables, fruits, root crops, rhizomes, leaves, and other types. This part of home garden land is used for breeding of some endangered species and medicinal plant species like *Impomoea batatas, Colocasia esculenta, Cucurbita pepo, Carica*

papaya, Plectranthus edulis, Lycoperiscon esculenta, Catha edulis, Dioscoria alata, Malus sylvestris, Solanum tuberosum, Brassica olerasea, Allium sativum, Nicotiana tabacum, Daucus carota, Zingiber officinale, Echinops hoehnelii (kebericho), Allium cepa, Moringa stenopetala, Aframomum corrorima, Hilianthus Annuus, Capsicum spp.,Amaranthus hybridus, Lactuca sativa, Brassia spp., Musa paradisiacal, Zea mays, Saccharum officinarum, and *Rhamnus prinoides.*

The last layer of home garden in Wolaita gardening system is the Enset layer followed by the field crops. This part of home garden is the backbone of the community not only as the food for human but also used for domestic animals as a feed. The Enset is intensively cultivated mono-culture species which provides raw materials for construction, animal feed, for fuel. It keeps soil fertility, protects soil erosion, and the main income generating resource. All parts of the Enset has economic and other use value.

4.1.3. Features of home gardens of the study area and their advantages in food provision, income generation and other uses.

Home gardens in the study area provide number of services to the local people. The primary function of these home gardens is for the quick and easy access to foodstuffs as justified by the prevalence of high number and dominance of food plants. Secondary function is to provide medicines used to treat day-to-day illnesses. Thirdly home gardens provide raw materials for construction, firewood, and animal feed. Fourth function of home garden is as experimentation site of new species to adapt new agro-climatic zones and used as breeding and propagating center and considered as site to produce and disseminate new species to different areas for intensive farming in field crop production. Fifth service of home gardens is that they used for income generating activities. The products of home gardens sold to improve the financial source of the community specially women. Women's daily activities are directly associated with home gardens in that the women care, cultivate, and use the products of home gardens. The women sale the products of home gardens like fragrances (condiments), stimulants, spices, medicines, vegetables, fruits and other products. In addition to this the women also sale food items in order to increase their income. Medicinal plants like *Ruta chalepensis, Artemisia absinthium, Artemisia afra, Lepidium sativum, Aframomum corrorima, Mytrus communis, Ocimum basilicum* were also documented in the home gardens inspected.

Pycnostachys abyssinica, Moringa stenopetala, Eucalyptus globules, Zingiber officinale, Alliumsativum, Amaranthus hybridus, Echinops hoehnelii (kebericho), Lepidium sativum,Carica papaya, and Croton nacrostachyus are utilized frequently . Other crops requiring close supervision and protection and cultivated close to home sites or inside the home stead are such as Daucus carota, Colocasia sculenta. C.antiquorum, Yantothoma sagittifolium, Lactuca sativum Brassia spp. Ipomoea batatas, Carica Papaya, Cucurbita pepo, Dioscoria alata, Phaseolus vulgaris, Pisum sativum, Plectranthus edulis, Ensete ventricosum, Musa paradisiacal, Saccharum officinarum, Malus sylvestris, Capicum spp, Lycopersicom esculenta, Zea mays, and Solanum tuberosum. In Wolaita culture farmers plant coffee more close to house in that they believe the smoke from the house and the frequent interaction of people stimulate the coffee to give more yield.

In general, the home gardens in the study area are a mixed- farming system that is based on the enset and the coffee crops. These two crops are high economic return value so as high attention is given in cultivation of these crops. In Wolaita enset has special importance due to its massive use and the development of diverse local varieties. The informants revealed that there were many more local varieties or clones. These include *Mazziyaa, Hal'aa, Gefettanuwaa, Ciiciyaa, Buluwaa, Ankkuwaa, Naqaaqaa, Suytiyaa…* Enset showed the highest calculated index of cultural significance because of its perenniality, vegetative propagation, drought resistance, massive and diverse products and many other cultural values compared to other crops.

Damot Gale woreda has 31 kebeles, of which 10 kebeles were selected for this research, based on the climatic conditions such as Cool (Gezziyaa), Moderate (Barguwaa), and Dry (Bazzuwa) climatic zones. Three kebeles were selected from cool zone (Woshi-gale, Shasha-gale, and Sibaye korke), four from moderate (Chocha, Hagaza-doge, Ade-damot and Wandara-gale) and three from dry (Ade-aro, Ade-koysha and Wandara-boloso) zones. Total of 200 households were identified, and from each kebele 20 households were selected. From these 200 households, 100 (50%) male headed households, were selected by simple random sampling method and 100 (50%) female headed households, were identified using purposive sampling method. Questionnaires were prepared and distributed to 200 identified respondents to fill and supervision was made by each selected home gardens by trained data collectors and face to face interview was carried out. The plant distribution and species associations were analyzed. Plants with better price such as *Coffea arabica, Enset ventricosum, Presea americana, Musa paradisiacal, Saccharum officinarum, Capsicum spp., Lycopersicom esculenta, Solanum tuberosum, Allium sativum, Mangifera indica, Daucus carota, Brassia olercea, Chata edulis, Carica papaya, Doscoria alata, Croton macrostchyus, Rhamnus prinoides, Eucalyptus spp., Cordia africana, Cuperssus lusitanica, Olea africana,* and Condiments such as *Ruta chalegensis, Mytrus communis, Ocimum lamiifolium, Ocimum basilicum, Cpiscum spp.,Artemisia afra, Ocimum hadiense, Allium sativum, Allium cepa, Coriandrum sativum, Artemisia absinthium,* were identified and documented.

Plant species that with better prices and average stand number in each selected home gardens and their

management system were presented in table 4. These species use values were identified by using preference ranking method and Use value analysis method. The quality of 'uses' was rated and assigned values ranging 1 to 5 according to their general contribution to peoples' livelihood. All respondents have given chance to rate their interest using numbers from 1 to 5 to indicate their most preference they use the biggest number (5) and the least preference was indicated using the smallest number (1). In use value analysis method, uses are categorized into three classes no use, minor use and major use, where use values scores were assigned as 0, 0.05 and 1 respectively. The more widely or intensively a plant is used, the greater is its cultural significance. Cultural significance of species was estimated as the importance of the role that a plant plays with in a particular culture.

The species habit and their calculated sale values were also indicated. These species were seasonal, annual or perennial Plants. Their productivity depends on the soil fertility, the care, and management. Some non food plants such as *Coffea arabica, Croton macrostchyus, Eucalyptus spp., Cordia africana,* and *Olea africana* need a long period of time to be mature for product were observed. Table 4 shows the male headed household's home gardens and the most productive species were fully controlled and managed by male and the female has use right rather than decision making on the product. The species managed by female were condiments/fragrant (sawo maataa). Similar study in Dawuro revealed that women are responsible for cultivation and selling of spices and condiment plants (Mathewos Agize *et al*., 2013b; Mathewos Agize, 2015). These species are also used as medicinal plants, spices and ornamental plants which were commonly cultivated, cared, controlled and managed by women (Mathewos Agize *et al*., 2013a, Engdasew Andarge *et al*., 2015). The woman has no right to use any species that controlled and managed by man without permission. Even if they do not have any right to use and made decision on the product of home gardens which controlled by man, the women were responsible to carry out any activities that ordered by their husbands such as caring, cultivating and managing.

Table 1 Plants with better price and their estimated sale values.

No	Scientific Name	Family	Local Name	Habit	Number of stands	Managed by	Average Sale (Birr)
1	*Coffea Arabica*	*Rubiaceae*	Tukiya	tree	5-50	Male	6000.00
2	*Enset ventricosum*	*Musaceae*	Uuttaa		30-100	Male	4000.00
3	*Presea americana*	*Lauraceae*	Abocadossiya	tree	2-5	Male	1500.00
4	*Musa paradisiacal*	*Musaceae*	Muuzziya		50-100	Male	3000.00
5	*Saccharum officinarum*	*Poaceae*	Shonkoruwa		30-80	Male	800.00
6	*Capsicum spp*	*Solanaceae*	Berberriya	shrub	30-150	Female	250.00
7	*Lycopersicum esculentum*	*Solanaceae*	Timatimya	herb	10-30	Female	300.00
8	*Solanum tuberosum*	*Solanaceae*	Donuwaa	herb	50-90	Female	240.00
9	*Podocarpus gracilior*	*Podocarpaceae*	Zigaa	tree	2-3	Male	2500.00
10	*Mangifera indica*	*Anacardiaceae*	Manguwa	tree	3-4	Male	500.00
11	*Daucus carota*	*Apiaceae*	Carotiya	herb	500-1000	Male	300.00
12	*Brassia olercea*	*Brassicaceae*	Maxe santta	herb	20-80	Female	250.00
13	*Chata edulis*	*Celastraceae*	Caatiya	shrub	70-90	Male	2800.00
14	*Carica papaya*	*Caricaceae*	Papaya		5-8	Female	680.00
15	*Doscoria alala*	*Dioscoriaceae*	Boyyiya		80	Male	1800.00
16	*Croton macrostchyus*	*Euphorbiaceae*	Ankaa	tree	3	Male	300.00
17	*Rhamnus prinoides*	*Rhamnaceae*	Geeshuwa	shrub	15	Male	1500.00
18	*Eucalyptus spp.*	*Myrtaceae*	Zaafiya	tree	9	Male	900.00
19	*Cordia Africana*	*Boraginaceae*	Mokotaa	tree	3	Male	1800.00
20	*Cuperssus lusitanica*	*Cupressaceae*	Yeferenj xiida	tree	20-30	Male	1300.00
21	*Olea Africana*	*Oleaceae*	Wogaraa	tree	3	Male	1200.00
22	*Ocimum lamiifolium*	*Lamiaceae*	Hirannuwa	herb	35	Female	30.00
23	*Ocimum basilicum*	*Lamiaceae*	keppuwa	herb	25	Female	25.00
24	*Mytrus communis*	*Myrtaceae*	Aguppiya	herb	13	Female	15.00
25	*Ruta Chalegensis*	*Rutaceae*	Xena adam	shrub	15	Female	35.00
26	*Allium sativum*	*Alliaceae*	Tuumuwa	herb	57	Female	250.00
27	*Allium cepa*	*Alliaceae*	Sunkurutuwa	herb	170	Female	150.00
28	*Amaranthus hybridus*	*Amaranthaceae*	Gagabsa	herb	14	Female	15.00
29	*Amaranthus caudatus*	*Amaranthaceae*	Gagabsa	herb	23	Female	15.00
30	*Coriandrum sativum*	*Apiaceae*	Deebuwa	herb	53	Female	12.00
31	*Artemisia absinthium*	*Asteraceae*	Cuquniya	herb	21	Female	5.00
32	*Artemisia afra*	*Asteraceae*	Natira	shrub	6	Female	130.00
33	*Echinops hoehnelii*	*Asteraceae*	Boorsaa	herb	7	Female	15.00
34	*Cybopon citrates*	*Poaceae*	Gucechcha	herb	10	Female	50.00
35	*Brassica carinata*	*Brassicaceae*	Danqala santaa	herb	23-54	Female	150.00
36	*Lepidium sativum*	*Brassicaceae*	Sibicaa	herb	45	Female	13.00
37	*Ocimum hadiense*	*Lamiaceae*	Kosorootiya	shrub	5	Female	25.00
38	*Ipomoea batatas*	*Conuulvulaceae*	shukariya	herb	98	Female	50.00
39	*Cucurbita pepo*	*Cucurbitaceae*	Lelehiya	herb	4	Female	80.00
40	*Zea mays*	*Poaceae*	Badalaa	herb	>1000	Both	120.00

From 100 male headed households' only 7 (0.07%) women responded that they have right to made decision on the product of the home gardens. The educational background of these households was ranges from

9 – 12 grades. This implies that in educated families there is mutual understanding of resource management. This means better educated societies have equitable use of resources with responsibilities. In male headed households' 99.93% of the resource and the product were controlled by male. The female has only use right rather than owning the resources and had no power in decision making. In these households the women control, manage, and care for condiment species like *Ruta chalegensis, Mytrus communis, Ocimum lamiifolium, Ocimum basilicum, Cpiscum spp.,Artemisia afra, Ocimum hadiense, Allium sativum, Allium cepa, Coriandrum sativum, Artemisia absinthium.* This is due to the fact that in all households, whether man or women headed, the part garden which is very close to the house was fully cared and managed by the women. This is not the good will of the men, but the culture of the society that has given the right to the woman. In Wolayta culture, the woman who cared, managed and controlled this part of the garden in a beautiful way, considered as wise and skilled woman.

Table 2: plant species dominantly cultivated and managed by female.

No	**Scientific Name**	Family	Local Name	Purposes			
				For food preparation	medicine	spices	others
1	***Cucurbita pepo L.***	***Cucurbitaceae***	**Duba**	✓			
2	***Lycopersicon esculenta L.***	***Solanaceae***	**Timatim**	✓			
3	***Allium sativum (L.) Merr***	***Alliaceae***	**Nech shinkurt**	✓	✓	✓	
4	***Artemisia absinthium L.***	***Asteraceae***	**Cuqqunniya**		✓	✓	
5	***Artemisia Afora Sacq.ex Wild***	***Asteraceae***	**Harite**		✓		
6	***Echinops hoehnelii Srhweinf.***	***Asteraceae***	**Boorsaa**		✓		
7	***Lepidium Sativum L.***	***Brassicaceae***	**Sibikkaa**		✓		
8	***Ocimum lamiifolium Hochst.***	***Lamiaceae***	**Hirannuwaa**	✓	✓		
9	***Ruta chalepensis L.***	***Rutaceae***	**Tena'adam**	✓	✓	✓	
10	***Allium cepa L.***	***Alliaceae***	**Key shinkurt**	✓			
11	***Coriandrum sativum L.***	***Apiaceae***	**Dinblal**	✓		✓	
12	***Brassica oleracea L.***	***Brassicaceae***	**Gomen**	✓			
13	***Aframomum corrorima (Braun)Jansen***	***Zingiberaceae***	**Kororima**	✓	✓	✓	
14	***Lagenaria siceraria (Molina) Standl.***	***Cucurbitaceae***	**Kil**				✓
15	***Ocimum basilicum L.***	***Lamiaceae***	**Bessobla**	✓		✓	
16	***Mytrus Communis L.***	***Mytraceae***	**Aguppiya**		✓		
17	***Brassica carinata A.Br.***	***Brassicaceae***	**Danqala santa**	✓			
18	***Capsicum annuum L.***	***Solanaceae***	**Mitmita**	✓		✓	
19	***Amaranthus hybridus***	***Amaranthaceae***	**Gagabsaa**	✓	✓		

100 women headed households were selected purposively for comparative study of women involvement in income generating activities on home gardens. In these study 100 women from male headed households and 100 women from women headed households were selected. For all 200 identified women whether male or female headed households, the questionnaires were distributed and collected back and their reply was analyzed. From 100 male headed households' only 7 (0.07%) women responded that as they have right to made decision on the products of home gardens. 93 (99.93%) of male headed households' resources were controlled by male. The female has only use right rather than owning the resources and they did not have power on decision making. The feedbacks of women from male headed households have shown that they have no right to own the resources such as land, and other natural resources.

From 100 women headed households the distributed questionnaires were collected back and their reply was summarized and analyzed. 13 (0.13%) women's home gardens were cared, managed and controlled by their children or relatives and this is due to age cases, physical problems, religious influences, financial shortages and social pressures were some of the factors that inhibit the women from the direct involvement of income generating activities on their home gardens.

87 (99.87%) women have full right to decide on their home gardens cultivation and the products. These amount of women involved in income generating activities on home garden farming. The key for females to make decision on the production is being the owner of the resources. Land is the most important natural resource which was owned for centuries by male and females do not have right to decide on the land use and management.

The averaged land size of home gardens ranges from 0.0625 to 0.25 ha. The same study in Dawuro reveals that the average size of home gardens was more than half a hectare which is different from this study (Mathewos Agize *et al*., 2013b). The productivity is determined by the soil fertility, system of soil management, type's of species cultivated, knowledge of the individual to cultivate the garden, climatic conditions and decision making power. The Products of home gardens were used for home consumption and for sale. The total monetary value of annual produce was estimated/ calculated in cash and kind. The sum of money gained by direct sale of

the products that from home gardens and the estimation of money for products used by family consumption.

Table 3: Plant species management and their uses (for sale or consumption).

No	Scientific Name	Family	Managed by	For sale In %	For consumption in %
1	*Coffea Arabica*	*Rubiaceae*	Male	97	3
2	*Enset ventricosum*	*Musaceae*	Male	30	70
3	*Presea americana*	*Lauraceae*	Male	85	15
4	*Musa paradisiacal*	*Musaceae*	Male	73	27
5	*Saccharum officinarum*	*Poaceae*	Male	95	5
6	*Capsicum spp*	*Solanaceae*	Female	5	95
7	*Lycopersicum esculentum*	*Solanaceae*	Female	20	80
8	*Solanum tuberosum*	*Solanaceae*	Female	15	85
9	*Podocarpus gracilior*	*Podocarpaceae*	Male	98	2
10	*Mangifera indica*	*Anacardiaceae*	Male	99	1
11	*Daucus carota*	*Apiaceae*	Male	95	5
12	*Brassia olercea*	*Brassicaceae*	Female	35	65
13	*Chata edulis*	*Celastraceae*	Male	100	-
14	*Carica papaya*	*Caricaceae*	Female	75	15
15	*Doscoria alata*	*Dioscoriaceae*	Male	65	35
16	*Croton macrostchyus*	*Euphorbiaceae*	Male	90	10
17	*Rhamnus prinoides*	*Rhamnaceae*	Male	98	2
18	*Eucalyptus spp.*	*Myrtaceae*	Male	55	45
19	*Cordia africana*	*Boraginaceae*	Male	98	2
20	*Cuperssus lusitanica*	*Cupressaceae*	Male	99	1
21	*Olea africana*	*Oleaceae*	Male	85	15
22	*Ocimum lamiifolium*	*Lamiaceae*	Female	3	97
23	*Ocimum basilicum*	*Lamiaceae*	Female	15	85
24	*Mytrus communis*	*Myrtaceae*	Female	4	96
25	*Ruta Chalegensis*	*Rutaceae*	Female	65	35
26	*Allium sativum*	*Alliaceae*	Female	75	25
27	*Allium cepa*	*Alliaceae*	Female	87	13
28	*Amaranthus hybridus*	*Amaranthaceae*	Female	-	100
29	*Amaranthus caudatus*	*Amaranthaceae*	Female	-	100
30	*Coriandrum sativum*	*Apiaceae*	Female	35	65
31	*Artemisia absinthium*	*Asteraceae*	Female	-	100
32	*Artemisia afra*	*Asteraceae*	Female	95	4
33	*Echinops hoehnelii*	*Asteraceae*	Female	55	45
34	*Cybopon citratus*	*Poaceae*	Female	15	85
35	*Brassica carinata*	*Brassicaceae*	Female	10	90
36	*Lepidium sativum*	*Brassicaceae*	Female	-	100
37	*Ocimum hadiense*	*Lamiaceae*	Female	25	75
38	*Ipomoea batatas*	*Conuulvulaceae*	Female	-	100
39	*Cucurbita pepo*	*Cucurbitaceae*	Female	45	55
40	*Zea mays*	*Poaceae*	Both	-	100

As indicated in table 6 Plant species with better prices were not cultivated in all home gardens equally. The soil fertility, climatic conditions of the area, type of species, land management and other factors determine the productivity of the gardens. All plants with better prices like *Coffea Arabica, Enset ventricosum, Presea americana, Musa paradisiacal, Saccharum officinarum, Podocarpus gracilior, Mangifera indica, Daucus carota, Chata edulis, Croton macrostchyus, Rhamnus prinoides, Eucalyptus spp., Cordia africana, Cuperssus lusitanic and Olea africana* were cultivated, controlled and managed by male. Most of these species were inedible. Plant species that cultivated and managed by females were food plants, medicinal plants and ornamentals. Therefore, such species were commonly used for home consumption and some products of these plants were for sale. Women could get financial support from the sale of home garden products, but in women headed households the female directly involved in income generating activities and control the products for their own and use for home consumption and sale.

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Ethiopia is an agricultural-based economy, with more than 85% of its population largely depending on the agricultural sector for its livelihood. Fifteen percent of the farming population is women. The agricultural economy is characterized by food insecurity largely due to low productivity compounded by storage and processing losses, food insecurity is getting worse all the time, because of the factors cited, and the low status of women which has led to misdirected development programmes, that do not take into account women's vital role in agriculture. Traditionally men gain access to land, except female heads of households. Land is the major resource and the means by which a population of about 85% can be sustained. It is the basic resource which provides sustenance to agriculture. Ethiopian's development depends much on the optimum utilization and the maintenance of sustained productivity of its land resources. Plowing is designated to men, and women owning land, hire men for plowing to get only a portion of the output. With the exception of female heads of households, women have minimal role in decisions related to land distribution and agricultural production. It is estimated that the average Ethiopian woman has a working day of 12–14 hours, much of it spent in hard physical labour. Women's role as producers in its present form is generally detrimental to their wellbeing and that of their children. In the peak agricultural season, women spent up to 10 hours per day in the field. The heaviest workload on a woman during the pre-harvest and harvest generally coincides with the period of lowest household food availability increasing the strain on her, the situation being aggravated if she is pregnant or lactating. But, as modernization reorganizes agricultural production and marketing, women are increasingly marginalized. They continue to work in production, their labour may increase but they lose access to the new resources that increase productivity. As agriculture becomes devoted to cash crops, women are left to provide for family food consumption on the least productive land, while men specialized in production of these new crops for cash sales. The complexity of forces working against poor women in developing countries is now greater than ever. The traditional socio-cultural constraints that have long limited women's participation in the economy and their access to resources are now coupled with international issues of debt, structural adjustment programmers' declining terms of trade, and war.

Status of women is their position or rank in relation to others, usually compared with that of men; measured in terms of educational attainment, employment and remuneration, occupational type, access to services and benefits, opportunities to participate in decision making and politics. In general, it indicates the place of women in a society to enjoy certain privileges, rights, duties, roles, power and authority. The right to control the number and spacing of their children is not enjoyed by the majority of Ethiopian women. Ethiopian women's status is low where they: (a) are generally poorer than men because they earn less; (b) are less educated; (c) are increasingly becoming heads of households, with no resources to support their dependents; (d) do not enjoy due acknowledgment for their labor contribution, particularly in agriculture, and (e) do not have decision making power.

As one of the natural resources land is central to the exsistence and livelihood of humankind. It emerged as one of the main means of survival for humans. Humans have stablished social organizations on the basis of age, gender and social class to carry out land appropriation and distribution. In rural Ethiopia land appears to be one of the causes for social inequality and conflict among most households. Many women of rural Ethiopia have had almost no land rights in practical terma due to discriminatory cultural values and belief systems. The main thrust of the women's development activities would be to assist women in the sustainable establishment of income generating activities to be undertaken in or near the home. The greater the mount of under women's control the greatr amount devoted to their children's education, health and nutrition. Generally, incomes of women are used for the increase of the wellbeing of the family.

Women in the study area are of male headed house holds donot access land in their own right and at they not only lose their right of access to land, but are also forced to leave their marital homes and return to their places of birth.

5.2. Recommendation

- There is neeed for intensive awareness- raising programs to sensitize the public on the need for women's land rights.Accessing land alone cannot overcome food insecurity and eradicate poverty. Hence additional effort needs to be made to avail women farmers with resources such as inputs, credit services and labour or draught power. There is need to support women farmers to engage in off-farm activities
- In order to overcome deep-rooted patriarchal systems, coordinated gender sensitization efferts need to undertaken to bring about the necessary attitudinal change in society.
- Women farmers need functional literacy and skills training to overcome illiteracy and be able toundertake and manage off-farm activities.
- The Federal government of Ethiopia needs to effectively monitor the impelemantation of its policies

and proclamations to ensure that the objectives set out in the document.

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