

Recent Transitions in Ethiopian Homegarden Agroforestry: Driving Forces and Changing Gender Relations

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Abstract

Homegarden agroforestry was a dominant land use practice in Southern Nations, Nationalities and People's Regional State (SNNPRS) Ethiopia until the 1990s. It has been known for its diversity, ecosystem balance and sustainability. Its outputs were contributing to the sustainable livelihoods of the region and were crucial for the household food security and rural development. More recently it has been challenged by population pressure, shrinking farm size, poverty and a new market situation and has gradually been changing towards monoculture production of khat (*Catha edulis*) and eucalyptus species. The consequence of the transitions on ecology, biodiversity, sustainability and food security has been studied by different scholars. However, the trend and extent of the change, its driving forces and its impacts on household food availability, gender division of labour and income, gender roles and gender power relations have not been properly addressed. Therefore, the overall aim of this thesis is to broaden the scope and understanding of drivers and consequences of the on-going land use changes in the traditional agroforestry of Ethiopia and thereby contribute to institutional development efforts towards a stable and sustainable land use and gender equity in rural development. Its specific objectives are i) to assess the trend of change from traditional homegarden agroforestry towards cash crop production and its proximate and underlying causes and ii) to analyse and explain how the land uses change affects the lives of farm women and men, their gender roles and the gender power relationship and space for action and agency. Primary data have been gathered through transect walks, field and market observations, household surveys, key-informants and focus group discussions, while secondary data have been obtained through policy documents, files and records.

The study revealed that there is a change in the distribution and area proportion among the three land use categories "food crops", "cash crops" and "grazing and living quarter" and in the structure of traditional homegarden agroforestry. The change has been driven by expectations of financial income (cash), farm land fragmentation, favourable market conditions for new cash crops, access to irrigation, limited supply of farm input for food crop production (fertilizer and seed), experience of others, risk of theft, and wildlife disturbance. These causes, which were identified by the respondents, have been underpinned by underlying factors such as demographic, economic, policy and institutional, socio-cultural and technological drivers. The analysis of the system dynamics shows that all underlying driving forces interact with each other and cause change in traditional practices although policy and institutional factors could be seen as key drivers provoking the change of other driving forces. The expansion of cash crops has had a number of effects on the households. It has significantly affected the food

supply for households and market, and the financial income from cash crop trading. Moreover it has affected household division of labour, decision making, family share and distribution of income, gender role of women and men, and the household gender power relationship. The expansion of cash crops has enhanced the decision making and the bargaining power of men as most production and trading of cash crops and the income is controlled by men. Women's role, on the other hand, has been declining in terms of labour input, access to products, control over products decision making and bargaining over use and distribution of resources. The increase of cash crop production and financial income obtained more attention while declining food crop production and biodiversity of the system were given little attention by the farming households.

The transition towards monoculture cultivation of crops has affected the rational of weighing and balancing economic gain and the socio-cultural and ecological benefits derived from the traditional homegarden agroforestry in the study region. Therefore, securing gender equality and balancing the economic benefits with the socio-cultural and ecological values of this system should be considered in regional agricultural development plans and land use policies towards the implementation of sustainable rural development.

Keywords: Homegarden agroforestry, SNNPRS, land use, driving forces, cash crops, khat, eucalyptus, labour, decision, bargaining power, women, men.

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List of Publications

This thesis is based on the work contained in the following papers, referred to by Roman numerals in the text:

- I Mersha Gebrehiwot, Marine Elbakidze, Gun Lidestav, Mats Sandewall, Habtemariam Kassa (2012). From diversity to monoculture: driving forces of change in traditional homegarden agroforestry in Ethiopia. *Journal of Agroforestry System* (in review, resubmitted)
- II Mersha Gebrehiwot, Gun Lidestav, Habtemariam Kassa, Marine Elbakidze (2013). From traditional homegarden agroforestry to cash crop production: impact on gender relationship and livelihoods in Ethiopia. Submitted Manuscript

Introduction

1.1 Problem statement and objectives

Ethiopia is the third most populated country in Africa. Agriculture is the dominant land use sector contributing about half of the GDP and 90 % of national export earnings (MoFED 2007). This sector is dominated by smallholders whose farming is considered as the basis for the national economic development. The importance of smallholder-based agriculture for a broad based development effort in sub-Saharan Africa, mainly in Ethiopia, has been emphasized for example by (Djurfeldt *et al.*, 2011).

Under pressure from land fragmentation and environmental and societal change, many Ethiopian smallholders are in the process of transforming their farming strategy to meet their needs for household food security and income (Djurfeldt *et al.*, 2011). Their priorities to satisfy the immediate needs for food and cash under socioeconomic change and development often determine these changes (Yibeltal, 1995). Land use change in rural farming of Ethiopian communities is pre-dominantly introduced by men when immediate needs are pressing. It is mostly carried out at the expense of the diversity and stability of existing land use systems, sustainable livelihoods and food security (Tesfaye *et al.*, 2010; Tesfaye, 2005). Therefore, the understanding of the trends, causes and consequences of land use change is important. Investigating the positive and negative multiplier effects of various options is a key issue in assessing sustainable livelihood outcomes Campbell *et al.* (2002) and the impact of one person's livelihood activities on other persons both now and in the future is equally important. Such changes are also influenced by the role of the government (through its policy and institutions), market forces and other (e.g. cultural) factors that influence the decision making and its outcomes at the local level (Rounsevell *et al.*, 2012; Maitima *et al.*, 2004).

Homegarden agroforestry land uses are found through the tropics. South and south-western Ethiopia is one of the tropics where homegarden

agroforestry is common (Okigbo, 1990). It has been a dominant land use practice in the Southern Nations, Nationalities and People's Regional State (SNNPRS) of Ethiopia. For centuries it has been known for its diversity, ecosystem balance, sustainability, household food security and rural development of the region (Tesfaye *et al.*, 2010; Tadesse, 2002). Since the 1990s, this traditional land use in Ethiopia is gradually dissolving and transforming towards monoculture production of cash crops. The change and loss of species in this traditional system affects the share and role of trees, food crops and livestock products associated with the household's total farm production and income (Tesfaye *et al.*, 2010; Gessesse & Kinlund, 2007; Taye & Aune, 2003). The expansion of commodity production of non-traditional cash crops, mainly khat (*Catha edulis*) and *Eucalyptus species*, has gradually resulted in a homogenization of the structure and composition of the homegarden agroforestry land use (Tesfaye, 2005; Kumer & Nair, 2004). The impact of the change on ecology, biodiversity, sustainability and food security has been studied by different scholars (Almaz & Niehof, 2004; Admasu & Struik, 2002; Tadesse, 2002). However, the extent of the change, its driving forces and its impacts on household food availability in relation to gender role and gender power relations has not been addressed. In line with Bock and Shortall (2006) it can be assumed that major land use change will have far reaching implications on gender relationship within farm and rural areas. If women become involved in the new cash crop production it may erode the patrilinear structure of the farming community as found by Lindeborg (2012). Further Ezekiel (2008) claims that women in the eastern part of Ethiopia involved in trading of khat have been empowered and made them economically independent.

The overall aim of this thesis is to broaden the scope and understanding the drivers and consequences of the on-going land use changes in the Ethiopian traditional homegarden agroforestry and thereby contribute to strengthening institutional efforts towards sustainable land use and gender equality and equity in rural development. Further, its specific objectives are i) Assessing the trend of change from traditional homegarden agroforestry towards cash crop cultivation and its proximate causes and underlying driving forces and ii) analysing and explaining how the change affects the lives of farm women and men, their gender roles, gender power relationship and the space for action and agency.

The thesis is based on two submitted papers and is organised as follows:

An introductory review of land as a basic asset for human needs and rights in Ethiopia under different political regimes is made in chapter 1.2. The homegarden agroforestry system and concepts of gender relations and driving

forces are presented in chapter 1.3. Material and methods (chapter 2) describes the study area, set of data collection methods, issues and objectives.

The main findings and results are presented in chapter 3.1 and 3.2. The analysis of the trend of land use changes, drivers of changes and its potential consequences are described in chapter 3.1, land use change and gender power relationship (inheritance, household gender division of labour, market and marriage is presented in 3.2. By combining results from the two studies (paper I and paper II) I discuss how a sustainable production could be promoted in homegarden agroforestry (chapter 4). In my conclusion (chapter 5) I also provide few recommendations.

1.2 Land and rights to land in Ethiopia

Throughout the history of mankind land has been a basic livelihood asset providing food, wood and other benefits to meet human needs (Frank, 2000). Land use concerns the products and benefits obtained from use of the land as well as the land management actions carried out by humans to produce those products and benefits. Therefore, land use change should be considered from different contexts and pretexts of human action, for example a population growth that brings a food requirement which induces intensive production leading to monoculture (Kumar, 2009). With the introduction of agriculture, a major land use change took place, from natural ecosystems (forest, grasslands etc) through agricultural expansion, wood extraction and infrastructure development (Geist & Lambin, 2001). Generally, those changes in land use have occurred successively and at a rather slow pace and predominantly to meet local needs. However many recent land use changes are driven by global economic and market related needs and demands for specific goods and products (Geist & Lambin, 2004). The term land use change reflects the modification of land to obtain food and other products, which has been going on for thousands of years (Ellis *et al.*, 2010; Rindfuss *et al.*, 2004). Its current rates are, however, far greater than ever in human history at the regional and global scales (Ellis *et al.*, 2010). In response to economic, socio-cultural and political changes and land use transitions, the legal and customary property right of land in different parts of the world are consistently changing (Lastarria-Cornhiel, 1997).

With increasing demands (local, regional or global) land has become a scarce resource. As for all scarce resources there is competition between interests and actors. In order to avoid over-use and severe conflicts between those interests and actors, the use is being regulated and controlled by policies, regulations, laws and incentives, such as subsidies and other motivations to

regulate, control and maintain sustainable and stable land use (Grover & Temesgen, 2006). Through ownership or formal tenure rights, land owners are in many cases, given direct user right and control over the land (Dessalgne, 2006; Gebre-Selassie, 2006). To be obeyed, the laws have to be considered legitimate by the population, and the state must be able to enforce them. A fundamental aspect of the land regulating system is the concept of property rights, generally defined by i) the right to use; ii) the right to exclude others; iii) the right to transfer, sell or mortgage (Dessalgne, 2006; Dessalegn, 1984). However, more specific understanding of the concept varies between different societies and also from time to time within the same society (Hussein, 2004). Further, actual understanding of the property rights and how it is distributed in a specific society is inter-connected with power relations and various structures (Yigremew, 2006; Furubotn & Pertovich, 1972). In addition to property rights, there are other laws and regulations (institutions) affecting family (household) based farming systems. According to Lidestav and Nordfjell (2005) and Lidestav and Ekström (2000), land and corresponding property right is the basic resource around which the farm family life is organized through social practices, household division of labour, property rights, pattern of marriage, and rules of inheritance. In this context the cultural and social aspects of being woman or man (i.e. gender) is reproduced, but may also be challenged. Thus, decision making on what to produce and with what labour input are important not only for the production and value of property, but also for internal power relations among family members.

The legal right to land by tenure or ownership meets a number of social functions beyond its economic importance. It is associated with the well-being and social position of individual households in the community (Meinzen-Dick, 2009). Opportunities of getting ownership right and access to use land as a basic resource is governed and guided by customary rules, policies and institutions. Ownership rights necessarily include the power to control and benefit from it and to transfer and access to land, meaning the ability to make use of land for production, processing and making a living out of it (Meinzen-Dick, 2009; Lastarria-Cornhiel, 1997). Inequalities and discrepancies in resource use and control between groups and individuals based on socio economic or political status, ethnicity and gender are the main characteristic of customary rules and norms that affect legal rights and access to land and resources in rural societies of developing countries (Ik Dahl *et al.*, 2005). In most developing countries legal rights and policy is challenged and compromised by traditional customary rules and social practices, and therefore rural development institutions are dominantly guarded by this rules and norms (Joireman, 2008).

Property rights is an important asset for the rural poor as it provides shelter, food, dignity, and a means of accumulation, but the majority of women and the landless are excluded from these opportunities (Meinzen-Dick, 2009). Since 1975 when the land reform in Ethiopia brought to an end the tenants and landlords' relationship, the land is owned by the state while farmers have user right only (Berehanu & Berhanu, 2005; Maitima *et al.*, 2004). This radical change in land tenure caused the formation of new, locally run, state institutions such as the Kebele Administrations (KAs), that organized land distribution and redistribution to community members (Atakilte, 2003; Melaku, 2003). The land distribution gave land titles to the heads of the households, basically men, who were registered and recognized by KA as members of the KA (Dejene, 1999; Dessalegn, 1994). Although the role of women in agricultural land use development has been widely documented, the role of legal and customary rules and regulations in most African countries restrict women from equal access to resource and decision making power (Dejene, 2009).

Preceding the land reform of 1975 the land tenure system in Ethiopia, which varied within the country, could be broadly referred to two categories: usufruct tenure and private tenure. In the former category the communal “rist” system was dominant in the settled northern highland (Melaku, 2003; Dessalegn, 1994). It included the right to claim ancestral (origin) which was inheritable and tradable in the form of rent, but could not be sold or mortgaged. ‘Rist’ rules were aimed at maintaining continuity in the procession of land to both individually operated and clan lands (Atakilte, 2003). Therefore, ‘rist’ entitled the sharing of individual land outside the family, mortgaging, bequeathing or transferring it as a gift, because the land belonged to the descent group not to the individual. Land grant in the southern part of Ethiopia was established and developed after the conquest of the region by landlords from northern and central part of the country (Dessalgne, 2006). Those landlords who administrated the occupied regions received the state’s share and redistributed part of that share to their officers, traditional leaders and indigenous people (Dessalegn, 1994).

Before 1975 the landlord tenant relationship (“gult’) was dominant in the southern part of Ethiopia of which the study area is part. It was the civil and military servants of the imperial regime who received ‘gult’ rights as a compensation for their service (Melaku, 2003; Dejene, 1999). Women did not possess any such right as their role as civil or military servants was limited. This ownership was characterized by widespread absentee landlordism and a high rate of tenancy, where the landlords were entitled to extract tribute from the indigenous people both in kind and labour (Dessalgne, 2006). As land was

concentrated in the hands of absentee landlords, tenure was highly insecure and arbitrary eviction posed a threat to tenant farmers before 1975. Access to land was largely dependent on landlord-tenant agreements where tenants were expected to produce and share one-third of their products. Even though most scholars considered 'gult' to be a right to land, it has also been characterized by a right to the manpower of the peasants living on 'gult' (Melaku, 2003; Fafchamps & Quisumbing, 2002b). Such rights were not inheritable or necessarily hereditary. Since formal land ownership was vested in the state, those rights could be withdrawn by the Crown at any time (Cohen & Weintraub, 1975). The historical southern land tenure regimes were delineated as a mixture of private, communal and government systems strongly affected by an exploitive tax and tribute system imposed on the indigenous people by northern settlers (Melaku, 2003; Joireman, 2000).

The 1975 derg land reform was the first uniform tenure system imposed upon Ethiopia as a whole. It abolished the varied and complex pre-existing tenure system. Proclamation No. 31/1975 declared all rural lands to be the property of the state (article 3) without any compensation to previous right holders. This was the major turning point in tenure right in Ethiopia, which successively evolved into shaping the present land tenure system (Melaku, 2003). Most farmers were entitled to free land holdings through their respective KA, although it was only user rights and could not be transferred in any form (Bereket, 2002). As access to land was distributed through KAs, to be member of the local KA' was a requirement and obligation for all farmers for securing farming plots (Joireman, 2000). The KAs' were responsible for administering the land, enforcing law and order and collecting tax (Atakilte, 2003). The derg regime thereby effectively abolished the remains of the traditional institution of 'rist' and 'gult' and through the KA's it took over the control of access to land (Dejene, 1999). Therefore, membership in the respective KA's was obligatory for rural farmer households engaged in farming practices.

In addition, the derg regime (1974-1991) spent much effort to advocate the economic and political goal of women and to occupy their proper place in society through the Revolutionary Ethiopian Women's Association (REWA) (Newton, 2011). Although the derg regime considered women's issue to improve their economic and political position, its contribution to women was not recognized. Despite the importance of the 1975 land reform in the land tenure of Ethiopia, its impact to women's right to land was insignificant (Newton, 2011).

The 1991 mixed economy policy, the market policy of 1995 that opened up free trade for farm products, and the current regional policies of land right registration

and certification are the major initiatives made by the present government of Ethiopia. Land right registration assumes that both husband and wife are jointly entitled to user right. It has been reported by Askale (2005) that the legislation and policy of the Amhara region in Ethiopia has had a positive impact on women's access to and control over land. However, in the SNNPRS the process of land registration and certification is still an ongoing process.

The recent increase in value and importance of rural land as a result of the increasing rural population pressure and rural investments also marginalized rural women more than ever. The increasing male control of land when its value is increased is reported by many, for example Yegremew (2006) described that the increasing land value in Ethiopia keep rural land use to be still men's domain. Therefore, it is important to understand the role and the gender power relationship of women and men on land and its value in order to address issues of gender equality.

1.3 Homegarden Agroforestry

Traditional agroforestry land use should be viewed as a household strategy for providing food, fuel wood and fodder that could serve as a model for sustainable forestry and agricultural practices (Badege & Abdu, undated). It has been practiced in Ethiopia since time immemorial by villagers on farm lands. It is recognized worldwide as a sustainable system characterized by the production of multiple species closely arranged in several overlapping canopy layers and in association with livestock (Peyre *et al.*, 2006). This integrated land use systems are believed to enhance agriculture due to the association between multiple crops and trees on one hand, and various ecological and economic benefits on the other. According to Tesfaye (2005) homegarden agroforestry in SNNPRS is characterized by the unique combination of two native major perennials enset (*Ensete ventricosum*), and coffee (*Coffea arabica*) which grow in association with food crops, various trees and livestock in a multilayer story agroforestry system (Tefsaye *et al.*, 2010; Almaz, 2001) (Figure 1).

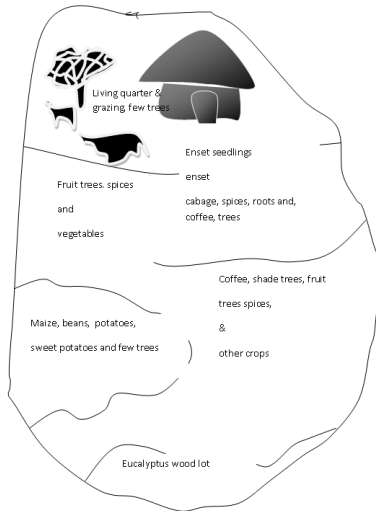


Figure 1. Principle illustration of traditional homegarden agroforestry in SNNPRS

Homegarden agroforestry has supported populations of 500-1000 person per square kilometre in SNNPRS for centuries (CSA, 2011; Tadesse, 2002) and provided food security for many Ethiopians (Tesfaye *et al.*, 2010; Almaz & Niehof, 2004). The main factors that contribute to this stability according to (Admasu & Struik, 2002) are the diversity of the system and the ability of the main staple food in south west Ethiopia, enset to produce a relatively large amount of food per unit area. Trees, crops and livestock are identified as main components of ecosystem stability in the homegarden agroforestry, which is related to the three scientific disciplines of agronomy, forestry and animal husbandry (Tesfaye, 2005). The presence of trees in homegarden agroforestry gives multiple services of timber, firewood, food and fodder Kumer and Nair (2004) and it is important for improving the ecosystem and improving its nutrient cycle through litter fall and decomposition. The livestock component in the system provides food for the household, and the manure is important for improving soil organic matter and fertility. Presently, tree growing on farm is considered as a promising farming strategy to adapt to climate change and contributing to mitigate global warming by their potential of absorbing atmospheric carbon dioxide (World Agroforestry, 2009). Nyong *et al.* (2007) also emphasises the importance of agroforestry land use in climate change mitigation through carbon sequestration.

1.3.1 Family farming and the role of gender

Ethiopia is a country with many different nationalities and ethnic groups with heterogeneous traditions, cultures, religions and norms. However in most of rural Ethiopian communities men are considered as the head of household and obtain the user right title to land. User right is strongly related with land tilling/cultivation and the heading of a household. Those who are not directly related with the land through cultivation, including all women, do not receive user rights to land. Women's contribution in the agricultural sector in Ethiopia is significant, yet their identity as farmers is highly contested in social practices and by the agricultural development framework of the country (Yigremew, 2006; Frank, 1999). In homegarden agroforestry women are responsible for post-harvest handling, household food supply and selling and trading of some products for care taking of their family. However, according to the traditional social practices and norms in the study area women are prohibited from inheritance as the latter is always from father to son or, in the absence of men in the family, to close male relatives. Women in a household can access and enter men's territory of land use through marriage and their labour input. The extent of their access is mainly determined by the labour input they invest in production. In terms of household labour input in the traditional homegarden agroforestry in the SNNPRS there is a clear gender division between women and men. Men are responsible for cultivation, livestock herding and planting, while women are generally responsible for household food and care taking, water and fuel wood collection, dairy and food production, harvesting and processing. In particular women are important in the production and processing of enset in SNNPRS (Almaz & Niehof, 2004; Admasu & Struik, 2002).

In the agrarian society marriage is important as it contributes to the onset and establishment of new households and new production units (Fafchamps & Quisumbing, 2005). In Ethiopia marriage customs are characterized by extensive agro-ecological, religious and ethnic diversity which represents the status of women differently. Women's status and right in Ethiopia decline moving from north to south (Fafchamps & Quisumbing, 2005). Polygamous marriage is a common practice in the Muslim societies and in most ethnic groups of the southern part of the country including SNNPRS, while monogamy is dominant in the northern part. In the south marriage without bride price is impossible, while bride price is not a requirement in the north. As an example, in Amhara regional state of Ethiopia marriage is based on the contribution of spouses. Women mostly contribute property such as oxen or cattle while men contribute land and house (Askale, 2005). However, the

common principle of marriage in the rural Ethiopian context is patriarchal, whereby wives are expected to move to the residential area of their husband where the land is registered in the husbands' name. This indicates that the gender difference in a household starts at the beginning of the household formation. Moreover marriage in Ethiopia is mostly arranged by parents, not only regarding the choice of the bride and the groom but also on how much start-up capital is required by the newly-weds, which is decided by what they are giving as an advanced inheritance (Fafchamps & Quisumbing, 2005).

Gender relations (like all social relations) include both material and ideological components, which are represented not only in the division of labour and resources but also in ideas, which attribute women and men with different abilities, attitudes, desires, traits and behaviour (Agarwal, 1997b). The unequal relation between women and men perceived and conceptualized as socially constructed through gendered meanings and practices (Bock & Shortall, 2006; Brandth, 1995). Based on the feminist scholars' (e.g. Lindeborg (2012); Brandth *et al.* (2004); Agarwal (1997b) use of gender as an analytical variable, (Kumer & Nair, 2004) argue that gender is a relational concept that describes how women and men are differentiated and ordered in a given socio-cultural context, and further how gender inequality divided society into two communities of interest. It also presents men being centrally featured in the hierarchy of control.

Similar to what has been demonstrated by Lidestav and Nordfjell (2005) in Swedish family forestry, I argue that in the context of homegarden agroforestry of Ethiopia, gender is inter-related with ownership and user right, inheritance, division of labour, market and marriage pattern through social practices. That can be illustrated in a 'cobweb structure' (Figure 2) and constitutes the social reality within which the agents exist in the specific context. In the Ethiopian context, market is included as an important institution while tax is considered less important and excluded in the adapted model. Institutional differences between the two countries are considered in the adapted model, such as the pattern of marriage, and land ownership versus user rights. Through this analysis the adapted model is used in order to understand the social practices in the context of homegarden agroforestry in Ethiopia.

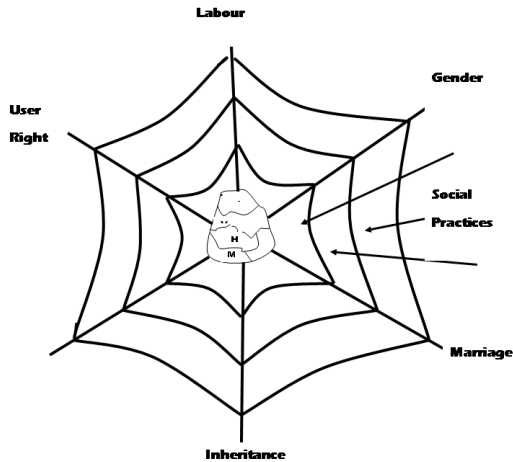


Figure 2. A conceptual model for understanding homegarden agroforestry land use in Ethiopia (adapted from the conceptual model for Swedish family forestry, Lidestav & Nordfjell (2005))

The substantial difference and the gender inequality in land use rights persist over a life cycle in many African countries, including Ethiopia, because men mostly bring greater wealth to marriage than women do. Inequalities and discrepancies in resource use and control between groups and individuals based on socio economic or political status, ethnicity and gender are the main characteristics of access to land and resources in rural societies of the developing countries (Kameri-Mbote, 2004). Although poor people use resources to meet their livelihood, the opportunities and constraints in accessing these resources may vary for women and men (Torkelsson, 2007). There is a strong relationship between land use and power relationship in society for getting access to and rights over resources. The major constraint for the implementation of legal rights in rural Africa is the recognition of customary rules and cultural practices. Customary law tends to be the unwritten social rules and structures of a community derived from shared values and based on tradition (Kameri-Mbote, 2005). In many parts of Africa it has been defined by various ethnic groups for their internal organization and administration (Butt *et al.*, 2010; Kameri-Mbote, 2004; Gray & Kevane, 1999). Customary law is recognized by the courts and exists as a second body of law (in addition to the statutory law/legislation) governing citizens in the countries of sub-Saharan Africa (Knight, 2010; Joireman, 2008). It has a stronger influence on people in rural areas, but also affects urbanities in so far that it regulates issues such as property rights, marriage and inheritance" (Joireman, 2008). The dominance of men and masculinity is most pervasive in the

customary law where the patriarchal realities prevent the implementation of legal rights (Kameri-Mbote, 2004).

Similar experiences from East African countries, for example the Registered Land Act (RLA) of Kenya was bounded to exclude most women from securing land titles, since they have general user rights. The Tanzanian Village Land Act of 1999 that includes provision of land rights for strengthening women's situation has been less viable and side-lined as the discriminatory customary inheritance law continues (Ikdahl *et al.*, 2005). These general practices indicate that gender sensitive international and national legislative changes and policies do not necessarily translate into real rights and influence but are being biased of customs and social norms that favour men's right to land. Kumer and Nair (2004) argues that the customary and patriarchal rules in Africa prevent real substantive land right to women. Problems related with property rights are difficult to solve through means of policy Place (2009), as it is anchored in customary patriarchy law in African countries. Although customary law is not uniform across Africa, women's land use rights through her husband, father and brother is common. In a few cases when women have property rights before marriage, the control will be exercised with her husband's consent to acquire the right of use over property. Therefore, the decision on the management of the land is under the sole control of her husband. According to property rights in the customary laws of most African countries, women do not own or inherit land because they are part of the wealth of the community and therefore cannot be locus of land rights' grant and inheritance, which is limited to fathers and sons in a household. Therefore, in most parts of Africa, including Ethiopia, women commonly have access to land through marriage only.

Gender equality became an important focus of the Ethiopian government and gender mainstreaming has been a slogan in urban and rural development since the downfall of the derg regime in 1991. After the fall of the derg there have been many efforts designed to empower women and promoting their rights through policies, initiatives and programs (Newton, 2011). The National Policy on Women ('Women's Policy') formulated in 1993, aimed to establish gender equitability in all rights including land rights. It was reinforced and renewed by the 1995 land policy. Yegremew (2001) has also described the growing concern about women in Ethiopia by pointing out some initiatives considered at national and regional levels to promote gender equality and equity. Those initiatives included Women's National Policy (1993), Development Social Welfare Policy (1996), Food Security Strategy (2002), Ethiopian Women's Development Fund (2001), and the Sustainable Development and Poverty Reduction Program (2002) including the national

slogan 'gender mainstreaming'. Despite that, rural women are still the most disadvantaged and vulnerable group in society and their role in rural development is invisible. This is a reflection of the existing male dominant legal, cultural, political and institutional administrations that limits the implementation and achievements of gender equality and gender mainstreaming.

A number of other development policy documents aimed at rural development programs have entered gender equality, such as the Agricultural Development Led Industrialisation (ADLI), the Population Policy, the Education and Training Policy, the Health Policy, the Environmental Policy, the Cultural Policy and the Policy on Natural Resources and Environment (Newton, 2011). Therefore, the Ethiopian government's commitment to gender mainstreaming is explicit within the Ethiopian Constitution (1995), which is the 'supreme law of the land'. The Constitution maintains a commitment towards the equal rights of women and men and recommends affirmative action to address past inequalities. Its Article 35 also asserts that women have the right to inherit, equal rights in marriage and right for equal share. Although women are given equality in the Constitution, gender-based inequalities remain huge and women lack access to land and social participation (Spring & Groelsema, 2004). The limitation with the 1995 Ethiopian Constitution is that it recognizes social practices such as customary and religious laws relating to marriage, divorce, ownership and inheritance (Demessie *et al.*, 2004). This is partly because the majority of women and some men have limited awareness and information about legislation, policies and local institutions related to women's and men's equal rights.

1.3.2 Land use change and its driving forces

Land use change is a product of socio-economic and environmental factors. Over the past 50 years, humans have changed ecosystems faster and more extensively than in any comparable period in human history, largely to meet rapidly growing demands for food, fresh water, timber, fibre and fuel. It could be illustrated by the rapid loss of important species of plants, birds, mammals and fish in the last 50 years (Champine *et al.*, 2000). It refers to a conversion from one land use class to another, for example from pasture to cultivated crop land or settlements. Land use change is to a great extent a result of the performance, priorities and livelihood strategies of the local people, but also influenced by government processes in terms of policies and regulations and by institutional and cultural factors (Maitima *et al.*, 2004).

In many land use contexts, e.g. forest land use, it is important to distinguish between short term changes, trends (continuous changes in one direction) and

transitions (change of trends, e.g. from deforestation and agriculture expansion to increased forest areas (Mather, 2007). When analysing the causes of changes it was distinguish between proximate causes and underlying driving forces (Geist & Lambin, 2002). Proximate causes refer to the direct human immediate actions and decisions at local level, while underlying driving forces are social fundamental processes identified as economical, institutional, technological and political factors, including e.g. national policies, that have remote influences at the underlying level (Geist & Lambin, 2001).

In an analysis of driving forces underpinning forest decline made by Geist and Lambin (2002) a large number of proximate causes and underlying driving forces were identified (Figure 3). Both proximate and underlying drivers of change often constitute multiple factors and drivers that are acting together rather than single-factor causation, as most of the world's tropical deforestation is driven by an interplay of economic, institutional, technological, cultural and demographic variables where economic factors are prominent (Lambin & Geist, 2006a; Geist & Lambin, 2002).

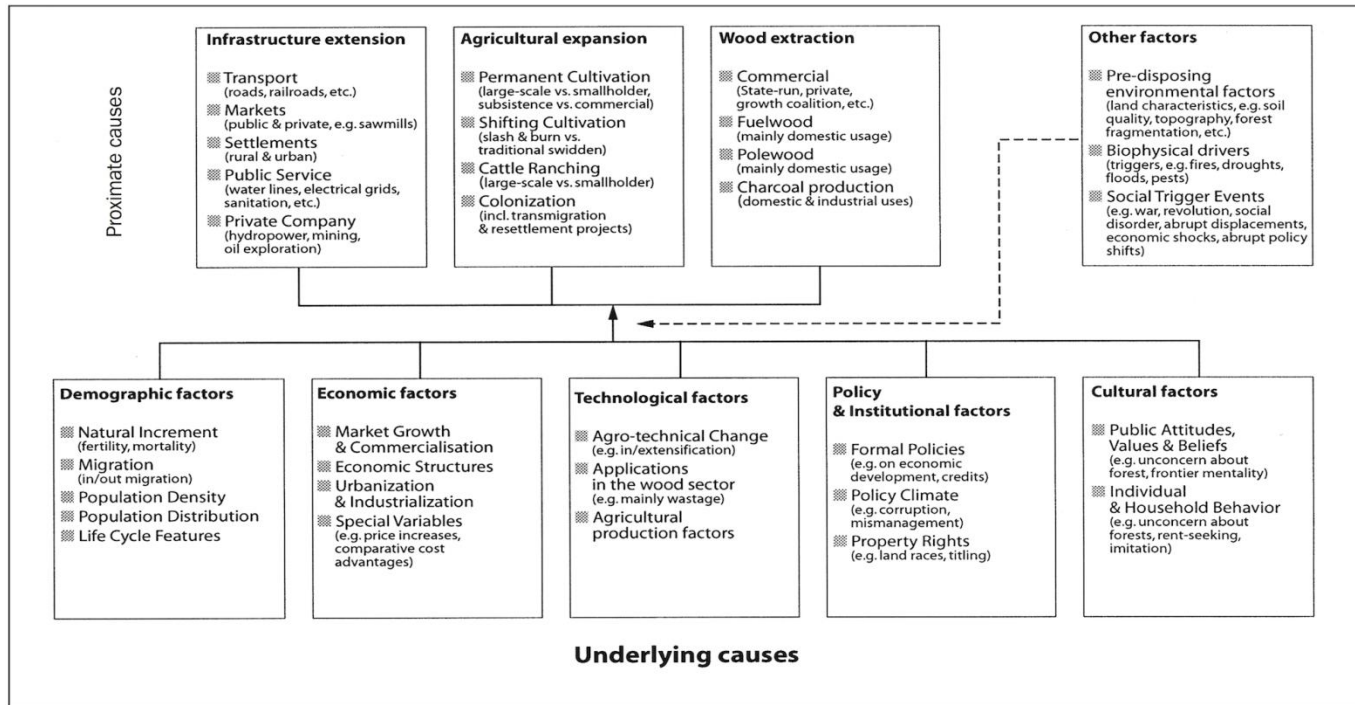


Figure 3. Causes of forest decline. Five broad clusters of underlying driving forces (or fundamental social processes) underpin the proximate causes of tropical deforestation, which are immediate human actions directly impacting forest cover. Source: Geist and Lambin (2002) Bioscience; Feb 2002; 52, 2; ProQuest Biology Journals Pp. 143

In practice, the understanding of proximate causes and underlying driving forces of land use change and their socio-economic and ecological impact is important for investigating the reasons for the change and for obtaining in-depth understanding of the current change patterns. Such understanding is needed by researchers and planners contributing to sustainable rural development and appropriate policy interventions. This “land use dynamics” must not only consider the socio-economic and biophysical drivers of changes but also the human environmental condition under which the drivers are reacting (Lambin *et al.*, 2001).

Many research studies on land use change have focused on its implication to global national and regional environment, ecosystem sustainability and biodiversity (Khouangvichit, 2010; Kumar, 2009; Lambin & Geist, 2006b; Maitima *et al.*, 2004). Less is known about how land use change affects the survival of the rural population who basically depend and make their livings on farming, including how it affects socio economic and power relationship at household level and how rural women and men in the households are creating survival strategies to address change (Meinzen-Dick 2009).

Change in agricultural land use, as observed in SNNPRS is in line with what Bock and Shortall (2006) expected to profoundly affect the structure and identity of rural society, and causes far reaching implication over gender relationship on farm and rural areas. Land ownership gives great bargaining power over those who are landless, and the distribution and share of land resource in the household also requires bargaining power (Agarwal, 1997a). Relations between women and men in a family are shaped by legal changes such as policy institution, economy, and market, that create different kinds of pressure on the family members’ relationship and their relative bargaining power (Bock & Shortall, 2006; Brandth & Haugen, 2005; Brandth, 1995). Within the household, the decision making always depends on who has most bargaining power, which is often measured by access to and control over resources, income and ownership and cultural and social institutions (Deere & Doss, 2006 ; Agarwal, 1997a). Therefore, understanding the biophysical and socio-economic change and its consequences on the socio economic conditions of users is important.

2 Material and Methods

2.1 Study area

Southern Nations, Nationalities and People's Regional State (SNNPRS) is one of the nine federal states of Ethiopia. It is located in southern and south-western part of the country (4°.43–8°.58 N, 34°.88–39°.14 E) (Figure 4), and covers a total area of about 109066.6 sq. km with a population of 15.5 million (89.5 % rural and 10.5 % urban) (CSA, 2008). It is the third most populated state in the country with a population density of 142 persons per sq. km (BoFED, 2008). SNNPRS consists of about 56 ethnic groups, each of them with its own distinct geographic location, language, culture and social identity. Administratively the region is divided into 13 zones, and sub-divided into 126 woredas (equivalent to districts), 8 special woredas and 3594 peasant associations known as Kebele Administrations (KAs) (BoFED, 2008).

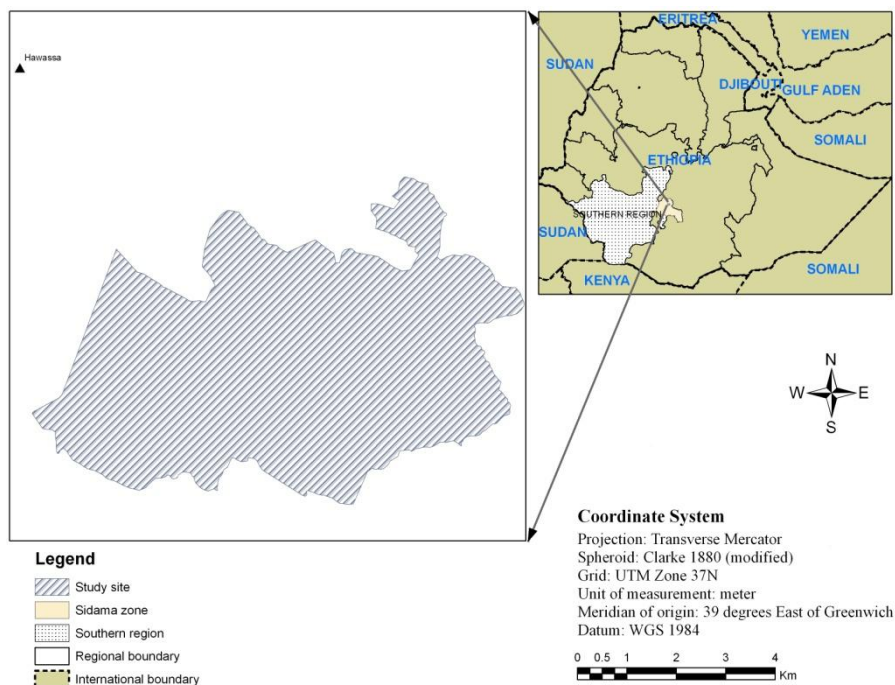


Figure 4. South Nations Nationalities and Peoples Regional State Ethiopia and the study area

In SNNPRS there are two main traditional types of land use, simple mixed agriculture and homegarden agroforestry, which contribute to the livelihoods of over 13.7 million population of the region. Out of 1.89 million hectare of cultivated farm land in SNNPRS about 576,000 hectares (53%) of land is occupied by homegarden agroforestry with coffee and enset, fruits, trees, vegetables, root and tuber crops and pulses; and 513 000 hectares (47%) is under the simple mixed agriculture (BoFED, 2008). The major difference between the two farming system is that in the homegarden agroforestry there is a continuous food production from the different crops, while there is only seasonal food production in the mixed farming system.

The enset-coffee homegarden agroforestry in the SNNPRS has remained relatively stable for centuries in supporting the livelihoods of a very dense population in the region (Torklsson, 2008; Tesfaye, 2005; Tadesse, 2002). Almaz and Niehof (2004) has specifically reported on the diversity and conservation of enset and its importance to household food availability and livelihood security in south-west Ethiopia. SNNPRS is also a region in the country where a major shift in farming systems towards the production of two cash crops named as khat and eucalyptus is being observed (Tefaye *et al.*,

2010; Tesfaye, 2005). Those crops were recently introduced and have expanded, whereas coffee and livestock, which are the age old cash crop components in the homegarden farming system are declining (Zemedu, 2001).

In order to have a fair representation in the study of these traditional land use systems, the Sidama zone in SNNPRS was chosen for the in-depth study on which this thesis is based. In this zone more than 89 % of the population is rural and depending mostly on the traditional subsistence homegarden agroforestry and mixed farming. The former involves (deliberate) management of multipurpose trees and shrubs in intimate association with annual and perennial agricultural crops and invariably, livestock, within the compounds of individual houses. The whole crop-tree-animal unit is being managed by family labour (Fernandes *et al.*, 1986). The simple mixed farming system is characterized most commonly by a separate plot far from the household compound kept aside for production of mostly single layered annual crops on a rotational base, perennial crops or sometimes a mixture of perennial and annual crops, where (deliberate) management of crops, trees and livestock is not considered. It is pre-dominantly covered by a single layer of annual or perennial crops. Farmers in the mixed farming system have a separate place for their settlement where they produce some small scale supplementary food within their compound while their livelihood is mainly based on the separate plot of mixed farming. The specific field study area covers four representative Kebele Administrations (KAs): Hawella Wondo, Gemetto Galle, Cheffa Cenni and Arenfema.

2.2 Data collection

Prior to the main study, a pilot study was made for identifying relevant qualitative and quantitative methods. Various social survey and remote sensing techniques were tested for collection of biophysical and socio-economic data. The use of the remote sensing data source was, however, found to be inefficient for estimating the general land use change in the homegarden agroforestry land use. It was impossible to accurately distinguish and discriminate between various land use categories and land cover types, because of the similarity in their spectral resolution value. The image was inadequate for identifying the small area proportions that each land use category covers.

As a result, a combination of various socio economic techniques for the collection of qualitative and quantitative data were employed in the main study. Those were transect walk, key informant interview, household survey, focus group discussion was made using interview guide (see Appendix 1). In

addition observation and measurement was carried on 16 farms. The following six major issues were addressed in the two papers:

1. Government policies on land use, gender, ownership/ user rights, inheritance and marriage.
2. Farm size and access to production by gender.
3. Impact of customary law, norms and practices on the implementation of legal policies and laws (ownership/ user rights, inheritance, and marriage).
4. Changes in land use and production and its proximate and underlying causes (change in area proportion of various land use categories, decrease of food production and increase of cash crop production).
5. Impacts of land use change on social practices in production, processing and related issues.
6. Impacts of land use change on household division of labour, decision making, gender roles of women and men, access to products, household income distribution and marriage.

The design of methods, the various issues addressed in the two papers, the objectives and the techniques adopted for acquisition of data and information to address each issue are presented in (Table 1). The methods and techniques applied for data collection was similar in both papers, but using different themes, issues and objectives for attaining the overall purpose.

Relevant local and national government documents (policy documents) and literature including customary rules and norms were examined for generating the planned information to satisfy policy analysis related to land use and gender. Policy documents on land use, property rights, and rural development from the 1970s were analyzed to understand the main historical events that have had an impact on the traditional homegarden agroforestry in Southern Ethiopia.

The field observations were completed in February 2011. The field work, which included 12 transect walks of about 1.5 to 2 km length and crossing the farms with changes in the traditional homegarden agroforestry, aimed to get a general idea of the changes in the traditional homegarden agroforestry in the study region. The main issues discussed were the temporal and spatial changes in traditional farming systems including major changes in landholding and production systems, possible causes of changes and their consequences. Key informant interviews were conducted between February and August 2011 with 24 selected knowledgeable and experienced elders who had been involved in land distribution and in settling disputes in the selected KAs. Eight consecutive market observations were made on two local markets (4 in each local market) in May 2012 to assess women's and men's role in trading and marketing of goods in the study region. The household survey was conducted with 60

respondents (31 women and 29 men) in 40 individual households during 2011. The households were proportionally selected from the poor, medium and rich social categories. The household wealth/socio economic status was considered from the defined socio-economic category of households' disaggregated list of each selected KA.

Major issues discussed related to paper one are: the major spatial and temporal land use change and its trends, farm size, cases and underlying forces of change, change in the area proportion of the major land use categories and the effect of the change on production and processing of food, and cash crops and financial income and its potential consequence. The major issues of paper two were focused on: customary laws, norms (social practices), gender relationship (ownership/ user right, inheritance and marriage), access to production and farm size of women and men, and the impact of the change on gender division of labour, gender roles, decision making, access to products and resources, household family income and its distribution. Except in a few cases, husbands and wives were interviewed separately to capture their individual understanding of land use changes and its consequences. In view of validating research findings a total of eight focus group discussions (four women groups and four male groups) were conducted in July and August 2011. The separating of gender groups provided equal opportunities for women and men to elicit, confront, and mutually check perceptions and opinions on the causes of changes in the traditional land use system. Gender role and power relationship was generally examined using issues such as production and processing and social practices decision-making, access to land and income and its distribution. The gathered socio-economic data included demography, land administration and distribution, farm size, ownership, major agricultural and economic activities and products for each of the chosen KA from district, and zone government organizations and local institutions.

Table 1. *Summary of methods (research design)*

Issue	Objectives	Data/ information sources and Methods	Manuscript No.
Policies on: land use, gender, ownership/ user right, inheritance, marriage	To explore national policy documents regarding sustainability of production system during the different political regimes, explore gender related policies at different level	National/regional policy documents: on land use and gender, KA and agricultural development archives on implementation of land distribution and redistribution and on implementation of legal policies and laws related to gender and land use	I and II
Customary law, norms and practices on: decision making, ownership, inheritance and marriage	To understand the impact of customary laws and practices on gender and local social practices	Relevant literatures, examples and cases from other areas, Key informant interviews n=24 (12 women and men) household interviews n= 40 HH (31 woman and 29 men) Focus group discussion n= 8 (4 women and 4 men groups) 5-6 person in each group	II
Farm size and access to production by gender	To assess the average land size and to understand how farm women and men get access to land and its products	Household interviews n= 40 HH for specific information on individual farm households. Use of local archive documents of KA and agricultural development offices was explored	I and II
Major changes in land use: proximate and underlying causes of change, expansion of cash crop production, change in land use categories, decreasing food and increasing cash crops production,	To investigate the trend of changes on the proportion of land use categories and its potential impact on household production and processing; to understand underlying driving forces of change that might be considered in addressing sustainable rural development; to determine how the relative change in land use category varies in relation to the socio-economic/ wealth status of local farmers	Key informant interviews n=24 (12 women and 12men) household interviews n= 40 HH (31 woman and 29 men) Focus group discussion n= 8 (4 women and 4 men groups) 5-6 person in each group; participatory field observation and estimation on the 16 randomly selected HH farms to determine present and past area proportion of land use categories	I

Impacts of land use change on: production, processing, decision making, access to production, and household total income distribution	To assess the potential consequences of land use change on: subsistence food and cash crop production, household food supply, decision making, access to production and family total income distribution; to examine how the lives of farm women and men and their opportunities and constraints of using and benefiting from the production is affected by the change	KA agricultural development office and KA administration documents, e.g. lists of HH considered under safety net/food aid, Key informant interviews n=24 (12 women and men) household interviews n= 40 HH (31 woman and 29 men) Focus group discussion n= 8 (4 women and 4 men groups) 5-6 person in each group	I and II
Impacts of change on gender, household gender division of labour and other social practices (user right, market, inheritance, marriage and household gender power relationship)	To assess how the change from subsistence food to cash crop production affects the gender division of labour in the family, analyzing how the change has impacted women's and men's gender roles, power relationship and their space for action and for being free agents	Key informant interviews n=24 (12 women and men) household interviews n= 40 HH (31 woman and 29 men) Focus group discussion n= 8 (4 women and 4 men groups) 5-6 person in each group	II
Access to trading and market	To understand how this change is generally related to household food availability and a fair sharing of income between household women and men To assess the presence and role of women and men in trading	Informal individual and group Interview & discussion (8 market observation in two market places (4 observation in each)	I

3 Results

3.1 Paper I

The focus of this paper is reviewing national land use policies and agriculture development plans, determining the trend of land use change in the traditional homegarden agroforestry land use system of SNNPRS, and identifying proximate and underlying causes of the change and its potential impacts. The full paper is enclosed as a separate manuscript while its main results are summarized below.

3.1.1 National land use and agricultural development plans

In Ethiopia many changes and adjustments have been made to develop the agricultural sector of the country. For example the 1975 land reform, the policy introduction of the mixed economy in 1991, the new market policy in 1995 and the recent regional policy on land registration and certification . These policies which related to demographic, economic, political and technological changes have contributed to changing the agricultural strategic plan in the country. An agriculture-led growth strategy for sustainable economic development, for reducing poverty and increasing the level of food security has not been successful in Ethiopia. As the strategic plans are mainly focussed on economic development and commercialization of agriculture, their contribution to sustainable development is limited. Although the country has considered the potential and opportunities of a ‘green revolution’ such as the agricultural-led development strategies, the success in bringing sustainable agricultural development has been limited. The agriculture intensification programme, and its achievements in terms of improving crop yields, farm income and poverty reduction, has failed to consider the conditions under which agriculture-led growth can succeed in Ethiopia. Therefore, although many efforts have been made by the present government of Ethiopia to develop a growth strategy for

the agricultural sector, it has not been able to bring economic transformation in the country.

3.1.2 The trend of change

A profound land use change was found in the homegarden agroforestry in the study region, as a consequence of the expansion of cash crops since 1990s. An increasing market economy and production and trading of cash crops has led to a reduced area proportion of major staple food (enset), vegetables, roots tuber, pulse, coffee livestock and trees. The change has been based on a conscious choice and decision made by individual farmers to meet their immediate financial income needs. The statistical paired T-test of the household survey confirmed that there is a land use change among the three main land use categories (food crops grazing/ living quarter and cash crops) where the area proportion of cash crops increased by an average of 53% in 2011 while food crops and living quarters/ grazing decreased (-36% and -16%) respectively in comparison with the 1990s (Table 2). Similarly the analysis of statistical data gathered in the selected KAs' administrations on land registration and certification shows that in 2011 khat and eucalyptus covered about 50% of the homegarden farms in the four studied KAs while the main food crop (enset and other annuals and perennials) occupied an average of 30%. The Chi-square (X^2) test (Table 3) revealed that the variation in conversion to cash crop between the three wealth categories (poor, medium and rich) was insignificant and there had been a change regardless of socio-economic differences. Regarding food crops, grazing and living quarter showed significant difference between the three socio economic groups.

Table 2. Allocation of farm land among the main land use categories of the traditional homegarden agroforestry in the 1990s and in 2011.

Land use category (year)	Mean	Std.dev	95%	lower	upper	df	Sign	
Pair 1								
Food crops	-36.0	6.5	1.0	-38.1	-33.9	34.9	39	<0.001**
2011								
1990s								
Pair 2								
Cash crops								
2011	52.6	6.0	.947	50.7	54.5	55.6	39	<0.001**
1990s								

Pair 3	Grazing & living quarter								
	2011	-16.3	4.8	.754	-17.8	-14.7	21.5	39	<0.001**
	1990								

Pearson chi-square ** = Significant at 1% (0.01 level)

Source: Field observations and household interviews (n=40)

Table 3. The Chi square (χ^2) test of proportion of land use categories across socio-economic status/wealth categories of farmers (Rich, medium and poor)

Land use category	Value	df	Asymp. Sig. (2-sided)
Food crop	21.304 ^a	6	0.006
Cash crop	10.574 ^a	6	0.102
Grazing/ living quarter	37.208 ^a	6	<0.001**

Pearson chi-square ** = Significant at 1% (0.01 level)

Source: Field observations and household interviews (n=40)

The expansion of cash crops in the study area resulted in reduction of the relative proportion of food crops and grazing/living quarter. One might say that the financial importance of food crops production has declined while khat and eucalyptus has become more financially important. The increasing financial income from the trading of cash crops encouraged its further expansion whereby many individual farm households shifted to plant khat and eucalyptus in the study region regardless of their socio-economic category. The decrease of food crops and livestock/dairy products and the resulting decline of household food availability also contributed to the increasing food prices in the local market.

3.1.3 Driving forces of change

The change in homegarden agroforestry land use is the result of complex interacting proximate and underlying factors. Proximate causes are the human action and reaction to the change (Geist & Lambin, 2002). In this study it refers to the increasing expansion and trading of khat and eucalyptus. Therefore the decisions made by individual household's to change their land use to cash crop production is the major proximate cause directly associated with the action and reaction of household's in the homegarden agroforestry.

The major causes for expansion of cash crops, according to the respondents are: financial income, land fragmentation, favourable market conditions for cash crops, access to irrigation, and limited supply of farm input (fertilizer and seed) for food crop production, experience of others, risk of theft and disturbance by wildlife. Increasing household financial income from cash crops was the most frequently mentioned causes of change, equally important for all group of households categories, while risk of theft and wildlife was only important among the rich farms (Figure 5).

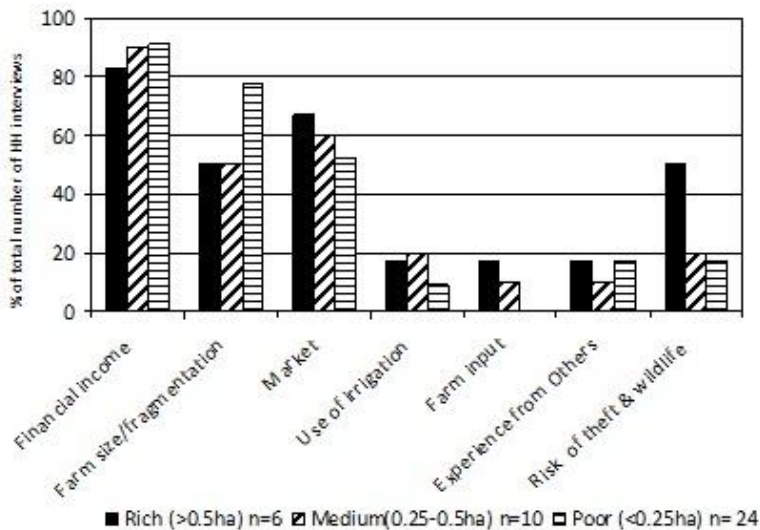


Figure 5. Causes of change in traditional homegarden agroforestry
Source: Household interview (n=40)

The underlying drivers of change in the study area that have underpinned the proximate causes are:

1. Population growth that contributed to the declining farm size and resulted into land fragmentation
2. Economic factors that influenced the value and importance of cash crop production, for example the free market economy introduced in 1991 and constitutionalized in 1995, which provided farmers with better opportunities of trading their products than before, and the increasing local and export market of khat and eucalyptus
3. The shifts in political power in the country that influenced land use policy and decision making
4. Changes regarding policy and institutional factors, e.g. regarding land user rights and the on-going cadastral survey

5. Technological factors mainly related with communication and information for example use of mobile phones that contributed for communication of information within the strong network of cash crop trading
6. The socio-cultural change related with urbanization and increasing khat and eucalyptus consumption at local and regional level, diffusion of urban economy and culture

Financial income, that was strongly related with market and economic factors, and shrinking farm size (land fragmentation) related with population growth, were evaluated as primary and secondary causes and driving forces of change. Economic factors and population growth as underlying force of change in the study region were mostly expressed by the respondents in terms of land fragmentation, increased population pressure and new market opportunities. These underlying forces of change are mostly driven by policy and institutional factors but also by cultural and technological factors. Therefore, multiple causal factors and their interaction have resulted in the change of land use from traditional homegarden agroforestry to commercial production of cash crops in the study region.

3.1.4 Potential consequence of change

The land use change has substantially decreased the subsistence food production and increased cash crop production in the study area. According to our informants the declining availability of subsistence food crops together with the increasing and unaffordable local market price of food has affected household food availability and security. Further, although the financial income from cash crop is increasing it is not converted to household food supply because of the unequal distribution of income within the household. The decline in subsistence food crop and dairy production has marginalized women from their decision making, control of production and distribution of household income. Although the shift has increased farmers' financial income it has also negatively affected the diversity and composition of species and ecological values and benefits connected with complex integration in the land use system. The presence of different functional groups of crops in this system that provides important ecological value, services and socio-economic benefits is interrupted by the expansion of cash crops, which have limited association with other crops.

3.2 Paper II

The focus of this paper is to understand the roles of women and men in the traditional homegarden agroforestry and the differentiated impacts of change, how the land use transformation in farm production has affected the household livelihoods and the opportunities and constraints of its female and male members in benefiting from household production and total income distribution. Through analysis of legal policy, informal customary rules and institutions related with gender a number of related issues have been analysed. Those were the traditional family division of labour, how it has been affected by the land use change and its consequences for women and men in access to land, income, market and marriage. The analysis targets the effects of change on gender roles and the gender-power relationship of women and men in household decision-making and its relation to household food availability and security. The full paper is enclosed as a separate manuscript while its main findings are summarised below.

3.2.1 Land use change and gender

Household interviews revealed that change of the traditional homegarden agroforestry land use towards monoculture production of khat and eucalyptus is a conscious and rational decision predominantly made by the respective husband's without consulting their wives. Out of the 29 wives only 5 (17 %) confirmed that they were informed and consulted about the decision of land use change. Further, in the focus group discussion women and men value the change and evaluate its consequences differently. When ranking the drawbacks of food crop against cash crop production (as high or low), 22 out of the 24 women (92%) and 6 out of the 23 men (26%) considered that cash crop production has high drawbacks over household supply of income. In contrast 17 out of the 23 men (74%) and none of the women were giving the high drawback for food crops over household supply of income (two of the women did not evaluate/rank). Food crops, fruits, vegetables and dairy products are more important for women than khat and eucalyptus, while the latter two are more important for men. Still, a majority of men also regarded enset and dairy products to be very important for food in the household (Table 4). Most respondents agreed that the financial income of cash crop production has contributed to improved living condition of some households. However, as food crops price is increasing in the local market and much of the income from cash crop trading is spent outside the household it is not adequate to cover the household food supply for many families.

Table. 4 Percentage of all interviewed women and men respectively and the preference degree they expressed: 1st= Very important; 2nd= Important; 3rd not important/not much.

Crop type	Preference among women (n=31)			Preference among men (n=29)		
	1st	2nd	3rd	1st	2nd	3rd
Maize	86	14	0	38	31	31
Wheat	83	17	0	45	38	16
Potatoes/sweet potatoes	97	3	0	16	23	61
Beans	93	7	0	6	26	68
Cabbage	86	3	11	0	6	94
Enset products	100	0	0	65	35	0
Dairy products	100	0	0	52	48	0
Avocado	97	3	0	16	26	58
Banana	79	21	0	13	16	71
Eucalyptus	5	25	70	45	42	13
Khat	26	33	41	81	16	3

Source: household interview (n=40) and focus group discussion (n=8)

3.2.2 User right and gender

Household interviews and data analysis of an ongoing cadastral survey for land certification (KA, Agriculture and Development Office, 2011) showed that there are few women who have direct user rights to land, and their average land holdings are smaller than men's (Table 5). Only 5 households out of 40 (13%) were headed by women and had direct access to land as they had inherited the user rights from their deceased husbands'. The analysis of the cadastral survey data for land certification showed that women and men have possession of land with user right over 94 ha and 1143 hectare of land respectively. Similar to the result of our household survey among the 5070 households identified on the ongoing cadastral survey only 10% found to be headed by women. 76% and 57% with an average land holding of 0.1 and 0.15 respectively are women and men (Table 5). This confirms that there are few women who have user right to land, and their average land holdings are smaller than men's. For example 11% of women and 20% of men in the study area possess a land holding larger than 0.20 ha.

The limited user right together with the disproportional land holding size has marginalized women from decision-making and bargaining about the land use in the study region. Meanwhile, men's superior rights to land have made them control over and decide on the conversion and expansion of cash crops in the homegarden agroforestry at the expense of food crops.

Table 5. *Number and share of women and men per land-holding size class*

Farm size (ha)	Women	Men	Both	Whereof women
<0.10	225 (45%)	1672(37%)	1897 (37%)	12 %
0.10-0.15	155 (31%)	998(22%)	1153 (22%)	13 %
0.151-0.20	64 (13%)	943 (21%)	1007 (20%)	6 %
0.201-0.25	30 (6%)	514 (11%)	544 (11%)	6 %
0.251-0.75	19 (3%)	248(5%)	267 (5%)	7 %
>0.75	10 (2%)	192(4%)	202 (4%)	5 %
Total	503 (100%)	4567 (100%)	5070 (100%)	10 %

Source: The ongoing cadastral survey of land registration and certification

3.2.3 Inheritance and gender

In the study region, transfer of user rights is done as advanced inheritance at the time of the son's marriage enabling the new couple to set up a farm and family. Most women are excluded from inheritance from their parents when they move to their husband's residence as inheritance goes predominantly from father to son in the study region. Therefore the patriarchal norms limit women's access to land as they cannot claim land either in their former or in their new residence KA where they are considered strangers.

3.2.4 Household labour and gender

There is a traditional division of labour in the homegarden agroforestry land use for the production and processing of trees, food crops and livestock. Women are mainly involved in animal husbandry and processing of farm and dairy products. Furthermore, they bear a major responsibility in feeding their family and can only generate a small amount of cash income to cover miscellaneous household expenditures by selling surplus food crops from their homegarden production. House construction, livestock herding, renting and leasing out land, planting of cash crops, including the management and trading of khat and eucalyptus, and being the household head are men's roles and occupation. Women in the study area do the harvesting and processing of the major staple food, for example enset, while men are responsible for its cultivation and planting, but it is a taboo for men to enter into activities of harvesting and processing of enset. Therefore women are very important for the production and processing of the main staple food in the study area. The importance of women in production and processing in the homegarden agroforestry in Ethiopia is supported by Admasu and Struik (2001). The expansion and increasing production of cash crops in the homegarden agroforestry that has decreased the production of subsistence food including enset has also marginalized women's labour input. Women who previously had

access to land and production using their labour in subsistence food production have lost that role through the introduction of khat and eucalyptus in the study region. Entering a khat farm is a taboo for women in the same way as entering enset production is for men.

3.2.5 Market and gender

In traditional homegarden agroforestry, crop production is primarily for subsistence, not for the market. However women are responsible for selling surplus food crops, fruits, vegetables and dairy products to supplement their household food supply while livestock, poles and timber has been traded by men. The expansion of khat and eucalyptus resulting in reduced area share of food crop and dairy products has also limited women's opportunities of trading and marketing such farm products. Meanwhile, men's market opportunities and control through trading of khat, and eucalyptus has increased in the study region. The market survey and observations showed that a large number of women doing trading in the local market, but most of them are not farm women. Further, they are mainly involved in "petty trading" such as buying and selling of small scale products for subsidizing food supply in their household. Men are involved in livestock trading and whole sale and large scale trading of food crops such as potatoes, avocado and trading of items besides khat and eucalyptus in the market. It was also observed that the new khat and eucalyptus market and the well organized market chain that connected farmers, traders and brokers is dominantly controlled by men and women are strongly prohibited from the business.

3.2.6 Marriage and gender

The study revealed that marriage is predominantly established at the husband's place based on the advanced inheritance that the groom has secured from his father. Therefore marriage is set on unequal conditions. However, women can get access to property and to land through marriage and their labour input in the traditional homegarden agroforestry. All respondents confirmed that bride price is a common and long cultural practice to materialize marriage in the study area among the different ethnic groups. Before the 1990s the groom has been expected to pay a reasonable and affordable bride price before the wedding. According to our informants, the number of livestock was previously the most important criteria and wealth ranking in the rural community. Farmers with more livestock were considered wealthier and likely to engage in polygamous marriage. However, this cultural practice has changed due to the expansion of khat and eucalyptus, which has resulted in increased bride price and made marriage commercial. Marriage in the farm household has become

dependent on financial capital earned from the trading of cash crops. The increasing “bride's price” has made it unaffordable for the majority of the poor to set up their new family since the 1990s.

4 Discussion

The combination of the trend and extent of land use change together with its proximate and underlying driving forces of change were investigated for a better understanding of the action and reaction of individual households on land use practices. The importance of understanding how the different factors interact in land use change in a specific context is underlined by (Geist & Lambin, 2002). Moreover the integration of social and biophysical information on the transition of subsistence food to khat and eucalyptus production in the traditional homegarden agroforestry improved our understanding of the change process, its trends, causes and social impacts in the study region. The study showed that there is a significant land use change towards monoculture production of khat and eucalyptus at the cost of food crop production in the traditional homegarden agroforestry of SNNPRS. In the study area the change is widely adopted as a livelihood strategy to meet the needs of a growing population besides the economic and market demand of khat and eucalyptus at local and regional level. Similar to khat growing areas in the Eastern part of Ethiopia that had been reported by Taye and Aune (2003), we found that khat and eucalyptus growing farmers (all male) in SNNRPS had been encouraged and attracted to change their traditional farming system by the increasing market and economic value of new cash crops. However, we assume that policy and institutional factors are key drivers of change because they provoke the dynamics of other driving forces.

The transition from subsistence food crops to cash crops production has affected food production and household labour input. The process of change has affected the traditional division of labour in a household and thereby the access to land and income, access to market and marriage by changing the gender role and responsibility of women and men in households' life.

The area share of cash crops (khat and eucalyptus) has increased three times while the area of traditional subsistence crops has decreased by half, and

consequently cash crop production has increased and subsistence food production decreased. In his study on homegarden diversity of species Tesfaye (2005) also reported that cash crop farming have gradually become the dominant land use in of SNNPRS, replacing the traditionally dominant food and tree crops and livestock. Similar to what has been reported by Agarwal (2000), cash income that is controlled by men is seldom shared equitably in the family and is spent for personal consumption, gambling and liquor, while most of the income controlled by women is spent to meet family's basic needs. Further, Deere and Doss (2006) have pointed out that women and men do not only have different access to wealth but use their asset and income differently and women may not share wealth of men even within same household.

Since the establishment of the Beijing Platform of Action gender mainstreaming has become an issue on global agenda and a development indicator. Therefore, the importance of integrating gender issues into development agenda became the growing emphasis of the international and national policy and strategic plans. It has also become a major focus of the Ethiopian government, supported by policies and strategic plans. However it has not been effectively translated into practice and its implementation is challenged by discriminatory patriarchal rules and social practices. Contrary to the legislative policy women in the study region have not benefitted from their legal right to land through inheritance or land distribution as the local customs play a fundamental role in legitimizing power inequality. The Ethiopian government is still struggling with putting the appropriate steps in place that have sufficient authority to challenge the gender norms being embedded in existing institutions (Newton, 2011). Kameri-Mbote (2004) also emphasises how the customary and patriarchal rules all over Africa prevent the provision of real substantive land rights to women.

Women's equal right is constituted and the 1995 land policy gives full and equal rights to land in Ethiopia for women and men. However the majority of women in the country still possess only indirect land user rights through marriage and income from land, which is fully controlled by men. For example the national and regional family law constitutes that husbands must consult their wives in making decision in any household property including land; in addition, it asserts that a contract of marriage should be between spouses but not between families. Our study confirmed that marriage contract made by families is still a practice in the study area. Contrary to the family law code that states that the husband must consult with his wife when making decisions on property, the decision to change to cash crops in the study region is being made exclusively by the man in a household. It is likely that most women and some men in society are still lacking sufficient information and awareness about

gender policies and programs. Newton (2011) argues that failure of translating the policy into practice is related to lack of awareness amongst women themselves and their desire to conform to culture and norms, therefore inequalities can be traced back to a deeply patriarchal society illustrating tradition, culture, and custom to legitimise the continuation of women's subordination.

Therefore, in many parts of rural Ethiopia women still have access to land only through their husbands or other male relatives. In the study area marriage is patrifocal and wives move to the residential area of their spouses where the land is registered in the name of the husband. This shows that the gender difference in property and user rights in a household starts at the beginning of the household formation. Although women in the study region are mostly responsible for household food availability, they have limited rights and access to land. Therefore they are the group most seriously affected by declining subsistence food production. The importance of land for women's empowerment and the barriers of acquiring and securing land has been emphasised by many researchers and writers (Butt *et al.*, 2010; Fafchamps & Quisumbing, 2005; Grigsby, 2004; Fafchamps & Quisumbing, 2002a).

The actual land use change has exclusively encouraged men to involve in the production, harvesting processing and trading of khat and eucalyptus. The on-farm trading of khat and the road side eucalyptus market provide an opportunity that also includes the non-farming community, although the employment is dominated by men. A study made by Gessesse (2013) confirmed that only 10% of those employed in the khat business in the eastern part of Ethiopia are women. However, the sole control of production and trading of khat and eucalyptus is only maintained by men in SNNPRS and give them a superior economic position, while women in the household have lost their traditional role and position.

Unlike marriage experience in Amhara region, marriage in SNNPRS is based on bride price while the onset of the new family is based on men's property. Therefore, women's inferior position is constructed at the beginning of the new family. Similar to Fafchamps and Quisumbing (2002b) the study showed that women are at lower economic position at the beginning of household formation, and that their decision making and bargaining position is inferior. It is evident that women in SNNPRS are those who are negatively affected by land use change, as the decision on land use change is made by men mostly without consulting their wives. In addition, the dominant control in production and trading of khat and eucalyptus by men illustrates the inferior position of women. Therefore, women who are marginalized in decision making on the change also lose their traditional gender role and ability to

bargain for equal share and distribution of income from cash crop production. Further the study showed that land use change in the homegarden agroforestry has also strongly affected the traditional marriage practice by lifting up the bride price and making it unaffordable for the majority of the poor farmers to get married.

The strict traditional division of labour in developing countries gives more accountability for women than men as for what goes in the household (Ellis *et al.*, 2010; Torkelsson, 2007). However, the historical gender division of labour in homegarden agroforestry giving women the control over household food production was changed and replaced by cash crop production fully controlled by men. Thus, the empirical findings of this study is in line with what has been reported by wangui (2003) on the impact of land use change, and by regarding changes on demands of labour and value of products.

Consequently the change marginalized women from the direct channel of production of crops and dairy products in the traditional homegarden agroforestry land use. Therefore the expansion of khat and eucalyptus in SNNPRS discriminates women and make them more dependent, as they are not involved in its management or trading. Thus the findings of this study does not support findings Ezekiel (2010); Ezekiel (2004) claiming that khat business in Harerge has empowered women by giving them better opportunity of participating in the trading and helped them to be economically independent. Contrary to this Gessesse (2013) from the same area reported that only 10% of khat employment is undertaken by women. The reason for the difference in the outcome of khat trading may be related to difference in culture, value and time. For example unlike the long traditional experience of khat production in Harerge, it is recently introduced in SNNPRS and is a taboo for women to enter the khat farm. In addition women entered into khat trading in Harerge while its market value was inferior. However, for a comprehensive understanding of the impact of land use change from homegarden agroforestry to cash crop production of khat and eucalyptus, the entire chain of production-processing-trading has to be thoroughly investigated.

5 Conclusions and Recommendations

Homegarden agroforestry is characterised by diversity of trees, livestock and agricultural crops and has a long history of supporting the densely populated part of SNNPRS. Diversity and household food supply and availability of this system is currently being challenged by population, economic and market growth and a broad transition towards monoculture production of khat and eucalyptus. The change is a result of combination of proximate causes and underlying driving forces of change. Further, it has an adverse impact on the households' food supply, gender division of labour, access to land and products, market and marriage opportunities. Even though financial income has increased in many households, its distribution among family members and their gender power relationship have been affected in a negative way.

The increased economic value of cash crop production has simultaneously decreased the ecological and cultural value of the landscape. This emphasises the need for policies and programs that can bridge the gap between the ecological, socio-cultural and economical values of the homegarden agroforestry landscape in order to maintain sustainable land use and rural development. In addition, further research on the impact of the change on rural household livelihoods and food security will be important.

The study concluded that gender has an impact on social practices, division of labour, user rights, inheritance, market and pattern of marriage. The interaction and connection of these institutions through the social practice in this context characterizes the socio-economic reality of the homegarden agroforestry land use in SNNPRS. The adapted conceptual model was found to be useful for better understanding of the social practices in the traditional homegarden agroforestry of Ethiopia. It is found to be relevant to examine how the different institutions are interrelated through the trade of social practices. When relating our findings to the adapted conceptual model we can conclude that the choice of land use type or land use category type is affected by

traditional ideas of what defines a farmer in terms of gender. Further, “what defines a farmer” has an impact on labour and share and distribution of resources in the household, as well as marriage patterns and market. Therefore, farm women who fail to secure their legal right due to local custom rules and norms can only obtain access to land and production through their labour. They are the group of society who are most affected by the recent transition of khat and eucalyptus in the study region.

The various gender policies and programs revealed that women's right is clearly stated and constituted by the present government of Ethiopia. However the practice on the ground confirmed that much more needs to be done on levelling down the impact of the patriarchal customary rules and norms on women's right. Sustainable rural development in Ethiopia cannot be materialized without the inclusion of women, who constitute half of the rural society. Therefore, policy and decision making bodies need to ensure that both women and men are well informed and aware of equal gender rights. Further, the implementing bodies need to find appropriate strategies for securing equal opportunities for both women and men.

This requires evaluate and understand the gap between policies, programs and their implementation and impacts. Customary rules and norms and its practice are still strong and play a significant role behind gender inequalities as they are challenging the legal rights of women in rural societies. Therefore, it is also equally important to understand these traditional norms and local customary rules in order to work towards equal opportunities in sustainable rural development for women and men.

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