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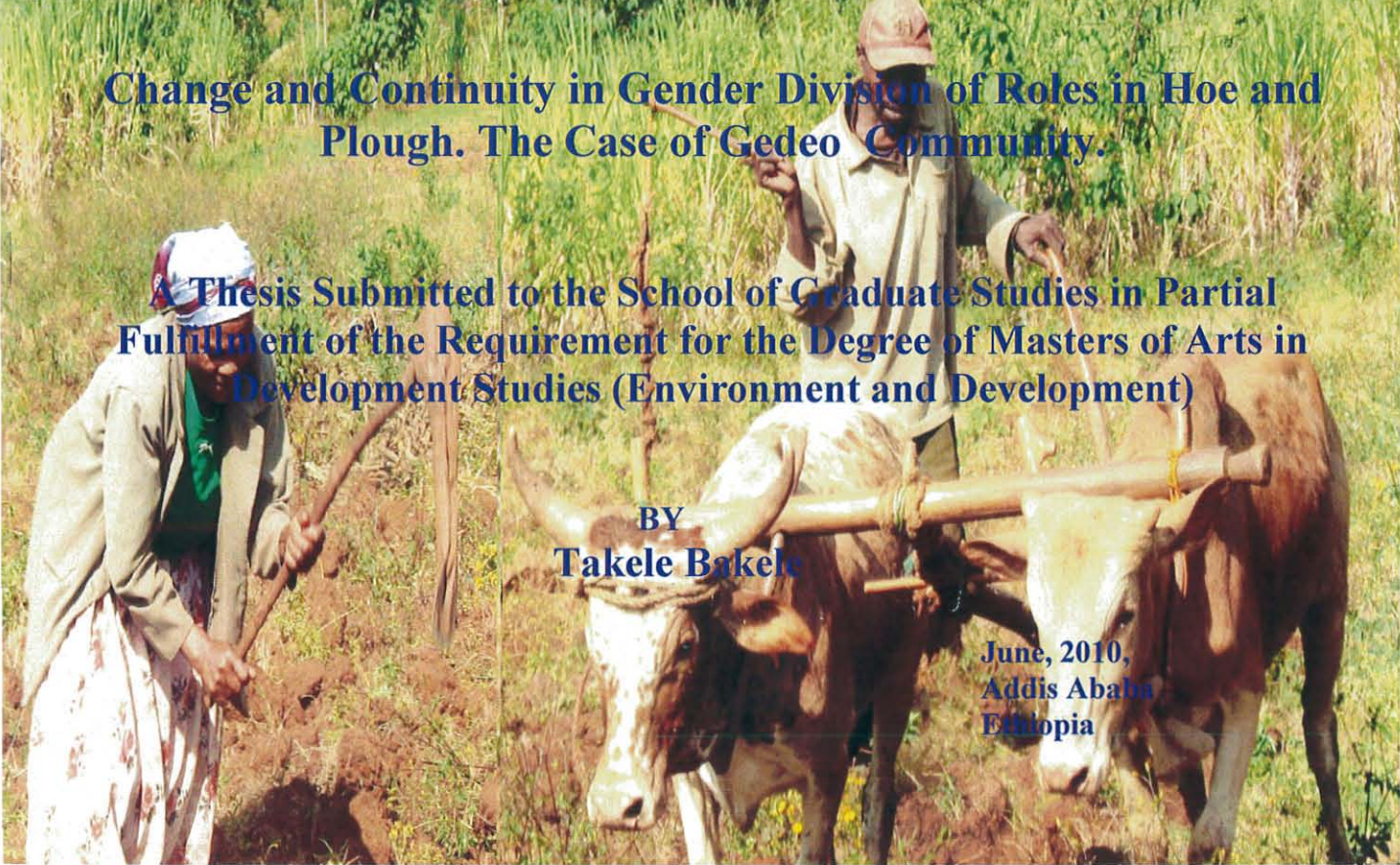
**Addis Ababa University
School of Graduate Studies
College of Development Studies**

Change and Continuity in Gender Division of Roles in Hoe and Plough. The Case of Gedeo Community.

A Thesis Submitted to the School of Graduate Studies in Partial Fulfillment of the Requirement for the Degree of Masters of Arts in Development Studies (Environment and Development)

**BY
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**June, 2010,
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**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**COLLEGE OF DEVELOPMENT STUDIES
(CDS)**

Title

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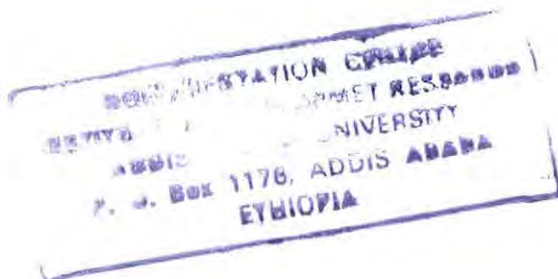
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Acronyms and Abbreviations

- CSA- Central Statistical Authority
- DAs- Development Agents
- ECSC- Ethiopian Civil Service College
- FAO- Food and Agricultural Organization
- FGDs- Focus Group Discussions
- GDP- Gross Domestic Product
- ILRI- International Livestock and Research Institution
- JICA - Japan International Cooperation Agency
- KAS- Kebele Administrations
- NGOs- Non governmental Organization
- PFE- Pastoral Forum Ethiopia
- SNNP- Southern Nations, Nationalities and peoples'
- SPSS- Statistical process for Social Science
- WWARDO- Wenago Woreda Agricultural and Rural Development Office
- WWIB – Wenago Woreda Information office
- WWWAO- Wenago Woreda Women Affair Office

Definitions of key terms

Cash crops: Crops grown for sale on the market rather than exclusively for local consumption and Subsistence

Enset: A banana like green fibrous food crop widely grown in South Western and South Central Ethiopia

Female farming: A system of farming in which women take the bulk of agricultural tasks

Gedeoffaa: A term used for the language spoken by Gedeo community

Kebele: The lowest administrative unit in Ethiopia

Male farming: A system of farming in which men take the bulk of agricultural tasks

Monogamy: A form of marriage in which each married partner is allowed only one spouse at any given time

Patrilineal: Is a line of descent from a male ancestor to a descendant (of either sex) in which the individuals in all intervening generations are male.

Polygamy: Means a system of marriage whereby one person has more than one spouse

Woreda: An area regarded as an administrative geographical unit.

Plough culture: A kind of farming system which employs animal drawn techniques to produce agricultural production.

Hoe culture: A system of farming which employs Hand-hoe/ Fully Manual farming systems techniques to produce agricultural production

Tradition: A Tradition: Along established action or behavior in a community or group of people, often one that has been handed down from generation to generation

Contemporary: The present existing situation.

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Abstract

The study was conducted in Gedeo Zone, Wenago Woreda. Gender relation is dynamic and contingent upon economic, political, and socio-economic conditions, as well as technological changes. So, arrangement of gender relations of production is not static but it is a changing process and situated in particular context. Accordingly, the main objective of this study was to investigate changes and continuity in gender division of roles in hoe and plough culture. In line with this, the study assesses whether technological changes (shift from hoe to plough culture) induced changes in institutional arrangement in resources control, marriage system and inheritance arrangement in the study area. It has made use of primary and secondary data sources and 117 households were selected through systematic random sampling. The data was analyzed by making use of descriptive statistical tools and through narration. There are changes in gender division of roles in both hoe and plough culture. However, the study discloses no significant differences in gender division of roles in agricultural production between hoe and plough culture. The changes in gender division of labor in agricultural production attributed to changes in the socio-cultural, economic and political life of the community. There are tasks in gender division of roles in agricultural production that are continued in both hoe and plough culture. The study has found similar patterns of changes in resource control; marriage system and inheritance arrangement in both hoe and plough culture. Changes in socio-cultural, economic and political life of the community were responsible for the changes in institutional arrangements (resource control, marriage patterns and inheritance system). Though there are changes in gender division of roles in hoe and plough culture, the involvement of men have found high particularly in crops and coffee production. Hence, the concerned stakeholder should work hard on harnessing gender disparity in the sector. Even though encouraging elements have found on decision making power, men power prevails on decision making processes on household resource. Thus, the concerned stakeholders should promote and give continuous support and training on shared and joint decision making processes on household resources use like land, livestock and income obtained from cash crops.

Chapter One

Introduction

1.1. Background

Agriculture is a vital development sector for achieving the millennium development goals that calls for halving by 2015 the share of people suffering from extreme poverty and hunger (World Development Report, 2008). Smallholder agriculture in particular is a key to sustainable growth and equitable wealth generation in the developing world (ibid). Using agriculture as a basis for economic growth in the agriculture based countries requires a productive revolution in the role both women and men smallholder agriculture. Nevertheless, a major and often over looked feature of Third World agrarian systems, particularly in Africa and Asia, is the critical role played by women in agricultural production (Thodaro, 1989).

Generally, the role that women play and their position in meeting the challenges of agricultural production and development are quite dominant and prominent. There is a growing mass of evidence documenting the key role played by women in agricultural production (Boserup, 1970), who identified gender-specific constraints that might result in lower productivity. Women's role in African agriculture ranges from providing a significant share of labor for food as well as cash crop production to managing their own field (Saito *et al*, 1992 in Doss, 1999).

In Sub-Saharan Africa, women are the basis of agricultural production; they are responsible for land preparation, digging, weeding and harvesting. They also help to transport, store and market surplus production (Boserup, 1970). Nevertheless, in “Women’s Role in Economic Development”, she attempts to highlight the myriad ways in which modernization of agriculture affects women in developing countries. Focusing on Africa, Boserup (1970) claimed that this process of modernization unavoidably alters the sexual division of labor. She maps out her understanding of the particular problems of women as they are deprived of their previous productive functions and values.

The introduction of cash crops in the household economy might also change the sexual division of roles in agricultural production. Although women had decision-making power concerning food production, the significance of this power has been eroded by the penetration of capital in-to the rural areas resulting in the increased importance of cash crop production, the diversion of better, more convenient land to those crops (FAO, 1995). Thus, women have become responsible for tasks in the domestic sphere and men for tasks in the economic sphere (Eviota, 1985).

Further more, the coming of cash crop to the household economy may bring about changes in customary system of land use and land controls. One of the most serious obstacles to increasing the agricultural productivity and income of rural women is their lack of security of tenure. Through-out Africa men have more institutionalized rights (formal and informal) to natural resources particularly land than women (Watson, 2001). Land traditionally assigned to women for food crop production is being taken up by more profitable crops which are almost always controlled by men. What is worse is that, without land, women have no access to credit, training or other aids to production (FAO, 1995).

Ethiopia is an agrarian country where agriculture accounts for more than sixty percent of the GDP, employing about 85 percent of the population, out of which women make almost half, and accounts for about 90 percent of the export (CSA, 2000). Although women are among the main food producers and providers to sustain the livelihood of the family, they have limited access to and control over means of production. Women's access to improved farming systems, skill training, credit provision and extension services as well as information on marketing strategies and research output is also limited (Bogalech Alemayu, 2001). Despite this, in Ethiopia there are limited research findings on these issues:- the effect of change from hoe to plough culture, effect of the production and expansion of cash crops and the effect of institutional changes on gender division of roles in agricultural production. Thus, this study scrutinizes the changes and continuity in division of roles in hoe and plough culture among the Gedeo Community.



1.2 Statement of the problem

Different factors are responsible for changes in the gender division of roles in agricultural production. The adoption of technology may shift the gender division of labor in agricultural production. In this regard, Boserup (1970) argues that as economies become more technologically developed, women are increasingly with-drawn from production or forced into the subsistence sector, while men take center stage in the production of cash crops. Consequently, "Where agriculture is intensified through technological changes, men's relative inputs do seem to increase, men's and women's work routines became increasingly differentiated, and men do seem to benefit disproportionately from agricultural production and sales" (ibid). Similarly in Tanzania, one study finds that men are becoming more involved in agriculture as use of plow becomes more widespread and as maize, especially hybrid maize is grown (Holmsøe Ottesen and Wandel 1991, in Doss 1999).

The introduction and expansion of cash crops in the household economy might change the gender division of roles in agriculture. Guyer and White (1984) note that the introduction of cash crop production attracted men in to commercial agriculture and with the increased investment of men in such productive sphere; women were relegated to domestic chores. Moreover, men can use part of their earnings from cash crops to invest in the improvement of their production, where as women who produce food crops for the family have no major income for improving their farming techniques (FAO, 1995). These trends may affect the gender relations and sexual division of labor at the household level, since men are increasingly controlling the production of cash crops and women are primarily responsible for the supply of food to the family.

Control over land and other agricultural resources is a crucial issue in the gender division of roles in agricultural production. There are gender based differences in agricultural resources control. Land title and tenure tend to be vested in men, either by legal condition or socio-cultural norms (Rekha et al, 2008). This may limit women's involvement in agricultural production. Inheritance arrangement that favors men may affect the gender division of roles in agriculture. In this regard, Wilbers (2003) observed that traditions of

patrilineal inheritance limit women's access to acquire land, to live and do subsistence farming.

In Ethiopia, many research findings on gender and agriculture focused on the gender division of labor in agricultural production. For instance, studies by Yilma (2002) indicated that land clearing and preparation is chiefly conducted by women and terrace building and repair, which is considered an arduous task, is undertaken mainly by men with limited participation of women among the Konso. Sintayhu (2000) found out that the production of coffee and enst is the responsibility of men and women respectively among the Sidama community. Wessen (2008) also indicated in her finding that both men and women participate in coffee production among the Mejengier community.

However, what elements in gender division of roles changed and persisted as a result of shift from hoe to plough culture, the production and expansion of cash crops and changes in institutional arrangements (resource control, marriage patterns and inheritance system) are the inadequately studied area requiring systematic investigation in order to grasp the dynamic aspects of gender division of roles and have a holistic understanding as to how the aforementioned factors affect the long established gender division of roles in agricultural production.

Nevertheless, Sintayu's (2000) and Wessen's (2008) studies have found out that despite change in socio-cultural, economic and political spheres of life gender division of roles in agricultural production not changed among the Sidama and Mejengier communities respectively. Unlike these results, Yilma's (2002) study identified changes in the gender division of roles in agricultural production due to the changes in the socio-cultural, economic and political life of Konso community. However, neither study had identified gender division of roles in hoe and plough culture. No studied have showed the changes and continuity in gender division of roles in hoe and plough culture. Therefore, understanding gender division of roles in different farming system is crucial to shape as to how development program and assistance should be structured and who should be targeted. Thus, studying changes and continuity in gender division of roles in hoe and plough culture enables different stakeholders to act accordingly so as to narrow down gender disparity in agricultural production.

This study, therefore, fills this gap by investigating elements of change and continuity in gender division of roles in hoe and plough culture among the Gedeo community.

1.3 Objective of the study

1.3.1 General objective

The main objective of the study is to investigate changes and continuity in gender division of roles in hoe and plough culture among the Gedeo farming community.

1.3.2 Specific objectives of the study

The specific objectives of the study include:

1. To explore gender division of roles in hoe and plough culture.
2. To investigate trends, status of cash cropping and patterns of gender division of roles in agricultural production.
3. To assess trends, status of resources control, marriage system, inheritance arrangement and patterns of gender division of roles in agricultural production.

1.4 Research Questions

The study answers the following questions:

1. What are the role women and men play in hoe and plough farming system?
2. What elements in gender division of roles are changed and persisted in hoe and plough culture?
3. Does change in agricultural technology, shift from hoe to plough culture, affected the gender division of roles in agricultural production?
4. What are the trends and status of institutional arrangement in resources control, marriage system and inheritance arrangement and patterns of gender division of roles in agricultural production?
5. How do patterns of cash cropping affect the gender division of roles in agricultural production?

1.5 Hypothesis

There are changes and continuity in gender division of roles in agricultural production due to the shift from hoe to plough culture, patterns of cash cropping and change in resources control, marriage patterns and inheritance arrangement.

1.6 Significance of the study

To date, studies on changes and continuity in gender division of roles in hoe and plough culture in Ethiopia is very few. Therefore, it is worth researching to study a representative Woreda that may have unique status. Thus, investigating what elements in gender division of roles are changed and persisted in hoe and plough culture, this study would:

- Clarifies the changes and continuity of gender division of roles in hoe and plough culture in the study area.

- Offers an inputs for policy makers, NGOs, and other stakeholders who are interested in the role of women in the development process.

- This inquiry, would also serve as a spring board for future studies and also could be valuable to culturally and ecologically similar areas.

1.7 Scope of the study

Gender based division of labor is a wide concept, which consists of multiple interactions. The sexual division of roles is the result of multitude of variables. Despite this fact, the study analyzes the impact of some few variables. Therefore, it is the researcher's view that the study could have been too inclusive if all pertinent factors are integrated.

Nevertheless, the scope of this study is restricted to investigate changes and continuity in gender division of roles in hoe and plough culture. Besides, the study uses only two KAs (one plough and the other hoe cultivation areas) for the survey.

1.8 Limitation of the study

Research works are constrained by various factors in one way or another: hence, none is free of limitations. Like wise, this study has been constrained by the following limitations:

1. Time and resources shortage
2. Studying intra-households patterns was difficult since some variables such as income, ownership of cattle and the like, were found to be sensitive to respondents, making data acquisition difficult.
3. Since the list of peasants was the land taxation registration file for the rural farmers, information that could have been obtained from landless rural farmers is missed in the study.

Chapter Two

Literature review

2.1 Gender Division of Roles in Agricultural Production

I. Gender roles

Gender roles are socially constructed, learned, and dynamic - they change over time, multi-faceted - they differ within and between cultures and influenced - by class, age, caste, ethnicity and religion. Gender roles are the socially, not biologically ascribed roles of women and men, which can vary between different societies and cultures, classes and ages, and throughout different periods in history. Gender-specific roles and responsibilities are often conditioned by household structure, access to resources, and the specific impacts of the global economy, and other locally relevant factors such as ecological conditions (FAO, 1997).

Gender roles are of key importance because gender shapes the opportunities and constraints that women and men face in securing their livelihoods across all cultural, political, economic and environmental settings. Gender influences the roles and relationships of people throughout all their activities, including their labor and decision-making roles. It is also important for understanding the position of both women and men vis-à-vis the institutions that determine access to productive resources such as land, and to the wider economy (ibid).

Division of labor and responsibilities of males and females is a social reality in all societies. According to Boserup (1970), "even at the most primitive stages of family autarky there is some division of labor within the family, the main criteria for the division being that of age and sex". Gender affects farmers' access to labor, land, and other agricultural inputs. Gender may also affect farmers' preferences concerning outputs. We also know that gender relations are dynamic and respond to economic incentives and opportunities (Doss, 1999). That is why the social construction of gender and the socialization of women and men from infancy into ascribed gender roles have determined to a large extent the overt demarcation of the reproductive roles of women

and the productive and community roles of men and the concomitant gender division of labor.

Further more, Fernando (1998) contends that, activities, resources and opportunities of people are significantly influenced by gender- that is, by the socio-economic and cultural dimension of being male or female. Moreover, different types of activities and tasks are generally allocated to women and men within the family in terms of subsistence production, and production for the market. In most societies, reproductive tasks or tasks related to child bearing and care and maintenance of the household (cooking, fetching water and firewood) are assigned to women (ibid).

In most parts of the world, men and women tend to work at different tasks. In many places in Africa, traditionally there has been a strict division of labor by gender in agriculture. This division of labor may be based on crop or tasks and both types of division of labor by gender may occur (Doss, 1999). In some areas, men and women may tend to grow different crops. One frequently made distinction is that cash crops and export crops are “male crops,” while subsistence crops are “female crops” (Kumar 1987, Randolph 1988, Koopman 1993 in Doss, 1999).

Numerous studies have also examined the issue of which household members perform which farm tasks. The clearing and burning of land in extensive agricultural systems do tend to be performed by men. Similarly, ploughing and the construction and maintenance of irrigation channels also seem to be dominated by men (Guyer 1980, Pala Okeyo 1979 in Douglas et al, 1981). Women are described as performing the “day-in, day-out” tasks of weeding, feeding animals, and cooking, while men specialize in the more physically demanding, bottleneck tasks of field clearing, plowing, and harvesting (Boserup 1970, White 1984). Women through-out Africa tend to provide more labor for agriculture than men and almost always provide more total labor(Doss, 1999).

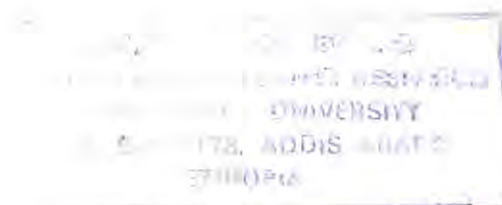
However, in contrast to the above idea, Douglas et al (1981) left certain rooms regarding the participation of female farmers in African agriculture. Although rates of female participation in African agriculture are high, on the average, it would be a mistake to assume that African cultivation is a unitary phenomenon and that there is no variation to

explain. There is a great diversity of cultivation practices within Africa, and also a considerable variation in the division of labor in agriculture (ibid).

What ever the division of labor in a given society; anthropologists regard the ways of dividing labor as a highly significant aspect of economic system. In this case, Bossen (1989: 319) has explained about the significance of the system of dividing labor and the mechanism through which it is divided. According to her, the ways in which the responsibilities for work and the products of labor both from inside and outside the household are divided, negotiated and exchanged between men and women as well as among men or that of women are extremely important in interpreting any given economic system (ibid).

Gender division of labor in rural Ethiopia may differ in terms of farming systems, cultural settings, location and the different wealth categories. Gender roles in the country also vary according to ethnicity, income, and status. According to a study done by the Ministry of Agriculture in 1992, on average women are responsible for about 40 percent of all agricultural labor in Ethiopia (Emily, 1999). In Amhara Region some of women's primary agricultural responsibilities include land preparation, weeding, harvesting, threshing and storing. In livestock production women are often responsible for herding, attending sick animals, watering, barn cleaning, milking and milk processing. Women are also solely responsible for the household garden. Yet, despite participation in all of these agricultural tasks many agricultural extension agents refuse to acknowledge the importance of women's role in agricultural production (ibid).

Moreover, Ethiopian women are largely responsible for nearly all reproductive tasks such as fetching fuel wood and water, cooking, washing, cleaning and child care. In most cases, men are the heads of households and are, therefore, the principal decision-makers in the household although some consultation with women may take place. Ethiopian women have longer working hours than men; they carry much of the burden of reproductive work in addition to their productive activities (JICA 1999). Gender-based role in food production varies in different farming, cultural and technological systems. In Konso, since almost all except a few tasks are carried out by both sexes, there is no sharp gender division of labor. With close observation however, there is a certain sex-based



division of labor. Accordingly, land clearing and preparation is chiefly conducted by women either individually or in groups. Terrace building and repair, which is considered an arduous task, is undertaken mainly by men with limited participation of women (Yilma, 2002).

2.2 Gender Division of Roles in Hoe and Plough Farming System

Boserup (1970: 17) tried to link variations in gender roles in agriculture with different types of farming systems. She contends that in hoe based, shifting cultivation women do the bulk of agricultural work and men do little farm activities, while in plough agricultural men do much of the agricultural work. Thus, the introduction of the plow has been shown to decrease the time women can devote to field work in relation to men (ibid). Women are described as performing the “day-in, day-out” tasks of weeding, feeding animals, and cooking, while men specialize in the more physically demanding, bottleneck tasks of field clearing, plowing, and harvesting (Boserup, 1970, White, 1984). Boserup (1970) also argued that hoe based, shifting cultivation is found mainly in Africa, where as plough agriculture is prevalent in Asia. Thus, “Africa is the region of female farming par Excellence” (ibid).

Lancaster (1976) and others have also noted that female contribution to agriculture is higher in Africa than in most regions of the world. Boserup (1970) further asserted that the shift from hoe cultivation to plough presupposes a corresponding shift in patterns of gender roles i.e. from “female farming to ‘male farming’”. She noted that ‘female farming’ systems seem most often to disappear when farming systems with ploughing of permanent fields are introduced in place of shifting cultivation.

Goody (1976) by analyzing the data drawn from Murdock’s (1967) Ethnographic Atlas reached the same conclusion as Boserup. According to him, women’s participation in agricultural production tends to be lower in societies, where intensive farming system, ploughing, predominates, than in extensive, hoe based, cultivation system where female predominates in agricultural activities. According to his findings, the contribution of female labor in production fell from 80 percent in the extensive cultivation systems to 20 percent in intensive cultivation systems (ibid).

Consistent to Boserup's thesis, Mead (1950) held that in societies the advent of animal drawn plough agriculture has undermined women's traditional role in subsistence production (Cited in Boserup, 1970:16). According to Bryson (1981) women play an important role in African food production system. She, nevertheless, objects the assumption that the introduction of modern, intensive agricultural techniques would result in the displacement of women from agricultural production. Her argument, on the contrary, is that, "the difference between the importance of female labor in agriculture in Sub-Saharan Africa as compared to the situation on a world wide basis is maintained even with respect to the labor usage patterns of intensive agricultural systems. The reasons for this difference must be sought in factors other than technology, an important part of the answer is provided by the social structure" (ibid).

Women involvement in livestock production is a long-standing tradition all over the world, and there is growing recognition of women contribution to agricultural production but, livestock ownership patterns differ widely among ecological zones, and socio-political systems Studies carried out in different developing countries of Africa, Asia and Latin America show a trend of women contributing among others more in the area of animal feeding, cleaning of barns, milking, as well as making and selling of butter and cheese. Men on the other hand, are more involved in cattle breeding, ploughing, marketing of livestock, and barn construction. The husband and wife are further helped by children – in some regions only boys and in some other regions both boys and girls – who often herd the animals (Tangka et al, 2000, Martin, 1990).

(Niamir 1990) and Mullin (1995) reported that women provided 46 percent of agricultural labor, produced approximately 70 percent of food and did at least half of the tasks involved in raising animals although these contributions are often underestimated or, worse, ignored. Both men and women do a large number of tasks related to animal production, with some degree of variation in involvement from region to region. These tasks include harvesting and transportation of feed (green grasses/weeds, fodder, forages etc.), chaffing of fodder, feeding and milking of animals, cleaning of cattle sheds and sale of milk products through formal and informal channels. Milk processing is primarily the work of women. Children of both sexes graze animals while men make decisions about

breeding of animals and marketing. A few examples will be given below to illustrate these points. Men are responsible for the general welfare of livestock, such as animal care, breeding and herd movements. They organize access to grazing fields and water points. Men accompany younger herders when the risk of crop damage by cattle is high and carry out irregular tasks like building fences for cattle enclosures. Men also buy and sell livestock and assist in milking (Martin, 1990). In most societies, milking, processing of milk, allocation of milk to different uses and care of pregnant cows, newborn calves and animals suffering from diseases or injury are the duties of women.

In an article on "Rural women in Ethiopia", Dessalegn (1991: 32) refutes Boserup's theoretical schema. He argues that in Wollo, where plough agriculture predominates, women's participation in agriculture was found to be high. In the same token, in Wolayta, where hoe based cultivation prevails; women's contribution to agricultural production was very low. Irrespective of the farming techniques (hoe or plough techniques) used men play a pivotal role in both food and coffee production among the Sidama (Sintayehu, 2000: 120).

Unlike many African agricultural communities, men and women work together in the fields in Konso (Hallpike, 1970). Like Boserups, Yilma (2002: 124) concludes that in Konso the role of both sex groups in food production varies from the hoe-farming village (Tokatu-Laga) to the village where the oxen-drawn plough is used (Kolme). Variation in gender involvement in food production from one study site to another might have resulted due to the recent introduction of oxen drawn farming to the region. As a result, in Kolme (the village where the oxen-drawn plough is used), though women support men in preventing the oxen from breaking terraces, only men handle plough and till the land with oxen. In Tokatu-Laga, since the people use the hoe for ploughing the land, women participate in every step of food production equally or even more than men. Although the division of labor is more egalitarian than in some societies, the main labor burden falls on women (Watson, 1998).

Women are often responsible for activities that require much labor and time and give very little or no economic gain. The livestock sector is no exception. Women care for the animals around their homestead, prepare and process the feed (forage), fetch water for the animals, clean the barns, make dung cakes, process the dairy products, look after the poultry, calves and sick animals, and in some cases take the animals to the vaccination centres (Dessalegn, 1991, Bogalech, 1998; Tangka et al, 2000). Men on the other hand take care of the slaughtering, animal treatment and sale of the livestock (Tangka et al, 2000). Bogalech (1998) in her paper refers to Wudenesh (1997) who revealed that in the southern regions of Ethiopia, women perform 70% of livestock production activities as opposed to 33-37% of the crop production tasks. Similarly, Bogalech reports studies carried out in the Amhara, Tigray and Afar regions, which equally emphasize the important role played by women in animal production (ibid).

ILRI's report (Tangka et al, 2000) states that in Ethiopia women are more involved in livestock production than in arable farming. They clean cow sheds, milk the cows, look after calves and sick animals, cut the grass and supervise feeding and grazing of cows, make dung cakes, butter and cheese and sell these products once or twice a week. Women distribute the milk to different uses. Men feed the oxen and take the animals for veterinary treatment when need arises. Joint decisions by husband and wife are made on the purchase and sale of livestock. Boys, and sometimes girls, generally graze ruminant livestock. During the rainy season, women assist in keeping the animals away from growing crops (Whalen, 1983).

In terms of livestock rearing, women have an important role in supplying fodder, feeding, watering, tending animals and cleaning their shed, etc among the Konso. Although women take care of animals in the home, cattle herding is carried out exclusively by men (Yilma, 2002). Further, for the fodder supply, both men and women cut grass from the home garden. However, since women visit the farm plot everyday, they supply the greatest portions of animal fodder. Furthermore, women provide fodder to and take care of animals kept at home as they spend most of their time in home. However, it is also common to see men milking animals and churning the milk, in the absence of male's women can also milk animals (ibid). In Menz for example, Helen Pankhurst (1990) noted

that although the division of work around the livestock is not rigid, women end up doing 'most of the dirty work'. This study tries to assess the gender division of roles in hoe and plough culture. It also attempts to investigate what elements are changed and continued in gender division of roles in hoe and plough culture due to changes in socio-cultural, economic and political conditions as well as technological changes in the Gedeo farming community.

2.3 Women's Access to and Control over Land and other Agricultural

Resources

Access can be defined as the opportunity to use resources without having the right to decide on the produces/output and the exploitation methods. While control indicates the power or full authority to decide on how resources and outputs of the resources are used, having access to them as well. Within the pastoralist system, control of resources is determined by local customs predominantly controlled by men. Shaped by ideological, religious, ethnic, economic, and social determinants, gender differences affect the distribution of resources between men and women (PFE, 2008).

Access, ownership and control of land and other valuable agricultural resources and inputs like cattle, water resources, credit/ finance, information, technology, and other support services is in most cases a major premise of men. According to Bogalech (2001), the traditional patriarchal system of resource control limits women's access to and control over productive resources such as land, their access to credit schemes, and training. This in turn impedes their effective participation in development and puts them in a position in which they can not benefit from agricultural extension services (ibid).

Land is a capital asset offering opportunities for social and economic empowerment and thereby a springboard from which to escape from poverty. Advocates for better land access for the poor and more equitable land distribution frequently focus on the importance of land for food security. At the most basic level, access to agricultural land provides a means of food production which makes a fundamental contribution to food security by making food more readily and cheaply available to the poor (Carter 2003).

Access to land contributes to food security, households' nutritional wellbeing and the ability to withstand shocks (Binswanger and Deininger 1999).

Access to land is not static, nor is tenure over land (Doss, 1999). As circumstances change, farmers' access and secure tenure to land may also change. These circumstances may include legal revisions, such as the formal registration of land, or economic changes, such as increased agricultural productivity or population pressures on land and these circumstances may in-turn affect the gendered aspects of access to and control over land. Many such changes have been occurring in Africa. Formal land titling programs may affect women's access to land. Although, in theory, many places register land in either women's or men's names, in practice most of the land registered in the name of men (Pala, 1983 in Doss, 1999). For example, among the Jolvo of Kenya, 97% of the women reported in 1983 that their land was already registered: however, 91% of the land was registered in the names of men, who have exclusive rights to allocate or sell it (ibid).

Livestock are important assets to women and can help them accumulate wealth more easily than by acquiring land, provided women control the decision-making and management of the livestock and have full discretion over how livestock-generated income is spent. This can allow women to bring wealth to the family, which in turn increases their status within the household. Women have a greater say over the management of livestock that are reared primarily for family food, and less of a say in livestock reared for selling. Gender division of labor and participation in decision-making processes are influenced by the value and uses of animals and their products. If the animals serve purposes that are within the domain of women's responsibilities, such as feeding the family, women will have greater influence on decisions regarding the animals. Women participate less in decision making regarding animals such as draft oxen that are mostly used by men for ploughing (Martin, 1990).

Men's ownership rights over animals are guaranteed by a near universal set of inheritance rules that are gender biased and rooted in religion and patriarchal kinship systems (Dahl, 1987). Okitoi et al (2007) reported that ownership of rural poultry is shared among the family members but is predominantly by women and children in western Kenya. FAO (1998) reported that in Tanzania, the animals belong to the husband and even in case of

divorce; the wife cannot take the animals with her. However, in Pakistan, women continue to own the animals they brought as a part of their dowry. They can decide by themselves what to do with them, but if they want to sell livestock, then they need men's agreement (FAO, 1998; Reddy, 2005).

Control over land and other resources is a crucial issue in the gender division of roles in agricultural production. In Ethiopia many empirical studies confirm that only men have access to and control over agricultural resources. Among the people of Wollo, women culturally are denied the right of access to and control over land except for widows or divorcees (Nahusenay, 2004: 125). Women's access to and control over the agricultural produce is very much limited among the people of the Gamo highlands (Getahun, 2004:149). In Ethiopia, Yisehak (2008) noted that men owned more cattle, sheep, goats and equine; while small animals like chicken were mainly owned by women. Despite women's considerable contribution in terms of caring for animals, they have no ownership rights among the Konso (Yilma, 2002:127).

With regard to household decision-making numerous studies note that men and women in Africa frequently engage in different production activities and that in many cases they are not jointly managed. This suggests that it is important to treat individual production activities separately, while also examining the relationships between them. In addition, men and women may be involved in separate consumption activities, often described as men and women having separate purses (Guyer, 1980 in Douglas et al, 1981). Despite the women's vital role in food production among the Konso, yet they have no decision-making power over scarce economic resources (land, livestock, grain in the granary, house, etc.) A study conducted in Konso further confirms that 85% of household income is controlled by men (Alemtsehay and Worknesh, 2000). This study tries to investigate women's access to and control over land in the traditional Gedeo community. Further it assess whether women's access to and control over land changed or not due to changes in the socio-cultural, economic and political conditions as well as technological changes.

2.4 Patterns of Cash cropping, Land use and Gender Division of Roles

With regard to the impact of cash cropping on gender roles, Guyer and White (1984), note that the introduction of cash crop production attracted men in to commercial agriculture and with the increased investment of men in such productive sphere; women were relegated to domestic chores. In support of this argument, Nelson (1981) states that when cash crops were introduced they were grown and marketed by men, often to the detriment of women's food production. Women are more involved in food crop production whereas men are more involved in cash crop production (ibid). Henn (1984: 13) argues that cash economy brought dependence on cash crops which alters the nature of gender based division of labor in agriculture. Accordingly, men became responsible for cash crops and women only for tasks in the production of food crops and the domestic sphere (ibid).

In Africa where women actively participate in the production of agriculture, a gender assignment of crops is common (Sachs, 1996; Davison, 1988). According to Sachs (1996) gender assignment of crops even takes a global phenomenon. Several researches assert that after the advent of cash cropping, the gender division of roles in African agriculture was changed in to one based on a division between cash crops and subsistence crops. Men became engaged in cash cropping while women remained subsistence producers (ibid).

Studies on gender and agricultural supply response in Sub-Saharan Africa typically assume that women do not participate on the sale of cash crops (Darity, 1995). Generally, crops produced for household consumption or for the domestic market are cultivated and marketed by women; this is the case, for example, in sub-Saharan Africa for most vegetables and tubers. More commercial or industrialized crops cultivated on a much larger scale for direct export or for further processing, such as cotton or sugar, are more frequently the economic domain of men. Thus, asymmetric supports in favor of large-scale commercial farming may put household food production and subsistence farming, and the livelihoods of those involved, at risk (Koehler, 1999).

In the earlier days, many African societies had their own customary land holding system in which women farmers had the right to own land (Bryson, 1981; Zenebework, 1982). Women's easy access to and control over land was for a long time ensured by the low densities and the absence of demand for export crops (Boserup, 1970:18; Bryson,1981:38; Caplan,1981:100; Lewis, 1984:47). In many cases, it is believed that women use their land primarily for subsistence crops to feed their families while men cultivate cash crops and keep the income.

The importance given to cash crop production has been accompanied by a variety of modernizing schemes transformed the value of ownership and control of land, methods of production and division of labor by sex. Rogers (1980) maintained that men's engagement in the production of cash crops is one of the major forces that eroded women's rights to land, which in-turn adversely affected women's role in agriculture. More profitable land use opportunities may also reduce women's access to land. For example, in Zimbabwe, the introduction of cash crops has resulted in a reduction in the amount of land a woman is granted for planting her crops (Muchena, 1994, in Doss, 1999). With increased land productivity provided by new technologies or new crops, men may place more emphasis on agriculture and require that more of the land be under their control (ibid).

In Ethiopia research out-put reveals that there is division of gender roles in agricultural production based on cash-subsistence distinctions. For instance, among the Sidama the production of coffee is the domain of men while women play a dominant role in Enset production (Sintayehu, 2000). In contrast to this, among the Mejenjier coffee production is not the exclusive domain of men, but women too contribute labor to coffee production (Wessen, 2008). Therefore, this study assess whether the expansion of cash cropping in the study area brought changes in women's access to and control over land. In line with this, it also attempts to investigate the existence of changes in gender division of roles in agricultural production due to the expansion of cash cropping.



2.5 Marriage Patterns, Inheritance System and Gender Division of Roles

The division of roles by sex in agricultural production, in a particular setting, may well determine in a considerable measure the preferred form of marriage. In this regard, Boserup (1970:33-34) has formulated a link between system of agriculture and patterns of marriage. From economic point of view, she contends that hoe-based or shifting agriculture, where women make a significant contribution, is associated with polygamy form of marriage while plough agriculture, where men contribute a lot in agricultural production, is associated with monogamous form of marriage (ibid). Murdock (1949), Heath (1958) and others have also argued that the degree of female contribution to subsistence is a predictor of the degree of polygamy. Bryson (1981) took the argument one step further and suggested that in addition to the cultivation system, the prevalence of polygamy in Sub-Saharan Africa is highly related to the system of land holding arrangement. In the traditional land holding pattern where land is abundant men tend to have additional wives, through whom they increase wealth and power (ibid).

Apart from the association between farming system and types of marriage, Boserup (1970:49) also tries to link farming systems with forms of marriage payment. In regions where women do most of the agricultural work, it is the bride groom who must pay bride wealth, but where women are less actively engaged in agricultural production, marriage payments come usually from the girl's family as dowry (ibid).

Goody (1976:34) also draws similar conclusions regarding the relationships between type of agricultural production, marriage system and mode of marriage payment. However, unlike Boserup he links rule of inheritance to type of agricultural production. He argues that societies of intensive plough agriculture practice widely diverging rule of inheritance, where property goes to children of both sexes, and the marriage payment is dowry, where parental property is given to a daughter on her marriage. In African hoe system of agriculture homogeneous inheritance system predominates and where household property goes to male children and bride wealth payment is the rule (ibid). However, regardless of the type of farming system, Wilbers (2003) observed that

traditions of patrilineal inheritance limit women's access to acquire land to live and do subsistence farming.

In Ethiopia, only few studies have considered the relationships between type of farming system and marriage patterns, marriage payments and inheritance system. However, the available findings indicate that there is no relationship between hoe-based farming system and the incidence of polygamy among the Tsamako people in Southern Ethiopia (Melese, 1995:137). Among the Sidama people in Southern Ethiopia, where hoe-based farming system is in practice, monogamy is the prevalent form of marriage irrespective of the type of farming system and bride wealth is the only form of marriage payment (Sintayehu, 2000:125). With regard to rule of inheritance system, in Ethiopia different types of property inheritance systems exist. Among the people of Tigray in Northern Ethiopia both men and women can inherit parental property (Kiros, 1995:202). In other cases like among the Dorze people of Southern Ethiopia only male members of the society can inherit parental property (Getahun, 2004:149) and that of the Sidama (Sintayehu, 2000). Inheritance rights among the Majangier community operate under the complete influence of patriarchy (Wessen, 2008). The fundamental reason for the constraints of women's right to possess and use scarce resources among the Konso lies in the social structure of the community. This is due to the pattern of exogamous marriage, male-dominated inheritance system through which only male clan members access scarce resources and the gender-based thinking by which women are considered inferior to men by birth. Part of the justification for the denial of women's access to resources is also that since women are expected to own and use their husbands' property, they have no rights to inherit from their family. Men dominantly inherit parental property among the Konso people (Yilma, 2002:127). This study attempts to assess patterns of marriage and inheritance arrangement in the traditional Gedeo community. It also tries to investigate whether there are changes in marriage system and inheritance arrangement in the contemporary Gedeo community. Above all it tries to investigate the relationship between gender divisions of roles on the one hand and marriage patterns and inheritance arrangement on the other hand in the study area.

2.6 Changes and Continuity in Gender Division of Roles in Agricultural Production

As gender relations in general, gender relations of production are also socially, culturally and historically constructed and re-constructed. Gender relation is dynamic and contingent upon economic, political, and socio-economic conditions, as well as technological changes. So, arrangement of gender relations of production is not static but it is a changing process and situated in particular context. This means that gender relations of production are continuously reorganized in order to be relevant to production process which is influenced by both internal factors (such as lifecycle of a household, desire of producer) and external factors (such as changes in state policies, in technical renovation, in input and output markets, and so on). However, labor reorganization is not determined by an authority, but it is considered as a process of negotiation of actors under certain social structure.

Although, tradition often specifies some tasks or crops as women's and some as men's, these may change over time. Several researchers have been confirmed that gender based division of roles are a social construct liable to change as the society's socio-cultural, economic and political settings change. With new opportunities arising, gender division of roles in many places is becoming less rigid (Kranz and Fiege 1983, Saito, 1994 in Doss, 1999). Whatever the culturally ideal position of men and women may be, major economic and social transformations taking place in the globalize world are rapidly and substantially changing household formations and patterns of obligations. The gender division of labor appears to change in response to changing economic opportunities. The extents to which these changes benefit or disadvantage women and men is not always clear, and it is difficult to predict apriority of what changes will occur.

Many changes in the gender division of tasks are related to increasing out-migration of men from agricultural communities, as they seek higher earnings elsewhere. As men leave the area, women take over many of the traditional male tasks (Pala, 1983, in Doss, 1999). In addition, when men move in to non-farm activities, women may become more involved in cash cropping (ibid). Although, the gender division of labor may be changing, it does not appear that men are taking over women's agricultural activities, specifically, the production of food for home consumption. When men move in to activities that are traditionally women's, they usually are not substituting their labor for their wives' labor

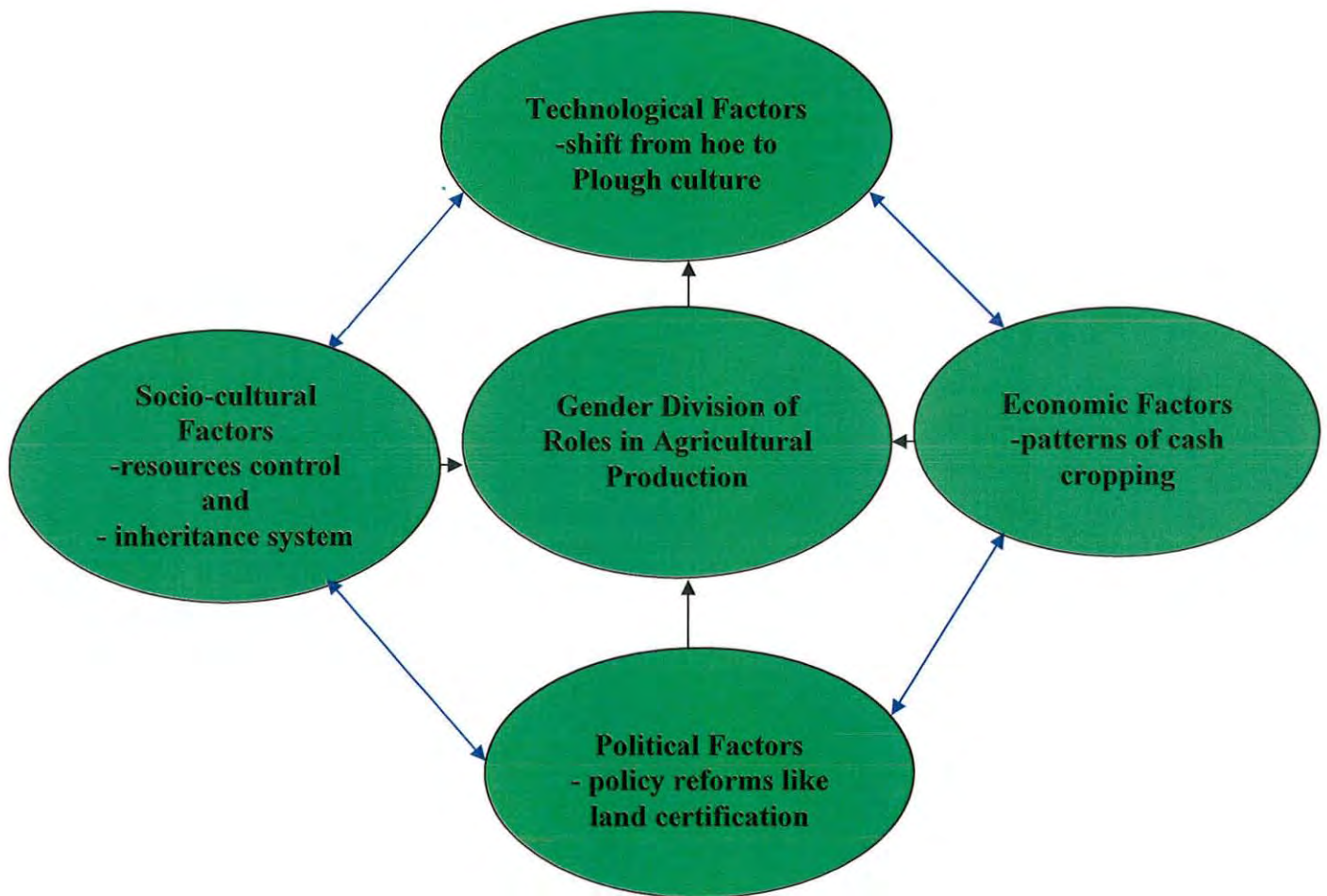
with in the household. Rather, usually some new opportunity has arisen and activities that had been considered women's activities have become more productive or profitable. For example, in Burkinafaso, women traditionally picked shear nuts. Now that the sale of these nuts is profitable, men are becoming involved in these activities, often with the assistance of their wives (Zuidberg, 1994, in Doss, 1999). Nevertheless, some scholars argue that gender roles tend to be rigid for persistent over a period of time. Chafetz (1989), for instance, proposes a theory that addresses the issue of how existing gender roles are perpetuated. Accordingly, gender division of labor, in most cases, reinforces male's superiority and places high amount of resources in the hands of male members of a society (ibid).

In Ethiopia, there are limited studies on the issue of whether gender division of roles in agricultural production changed with socio-economic and political transformation. The available evidence indicates that despite change in socio-economic and political settings there is no change in gender division of roles in agricultural production. For instance, the Sidama underwent changes, among others, in the customary tenure system, cropping patterns and agricultural technology. Despite these changes long established gender roles remain unchanged (Sintayehu, 2000). The Majangier community has experienced socio-economic changes. In spite of these changes, however, the existing gender based division of labor remained unchanged (Wessen, 2008).

2.7 Conceptual Framework

The changes and continuity in gender division of roles in agricultural production discussed above can be shown in the following conceptual framework. This conceptual framework is developed to be used as a general skeleton for the analyses and interpretation in the next chapters.

Figure 2.1 Conceptual framework of the study: developed by the researcher on the basis of literature review, 2010.



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Gender relation is dynamic and contingent up on socio-cultural, economic and political conditions as well as technological changes. Gender relation in agricultural production is not exceptional. In this regard, gender division of roles in agricultural production can be affected by different factors. As discussed in the literature review part, gender division of roles in agricultural production can be affected by change in agricultural technology, i.e. shift from hoe to plough culture, patterns of cash cropping, access to and control over agricultural resources, marriage system and inheritance arrangement. The inter-play between these factors is discussed as follows:

The shift from hoe to plough culture affects patterns of cash cropping and land allocation for these crops and vice versa. The use of fully manual techniques of production will limit the productivity and expansion of cash cropping and the efficient use of land for these crops. This is mainly due to the fact that a hoe technique of production is dependent on human power and as such the production and expansion of cash crops is liable to human strength. Advance in agricultural technology makes agricultural development more efficient and effective. Thus, the use of animal draw techniques of production, as an advanced method of production, makes production of cash crops more efficient and land use for these crops will also be more effective. Use of animal power is more efficient and effective than use of fully manual techniques of production. Patterns of cash cropping can affect the type of farming system one can promote. The use of fully manual /hoe techniques of production limits agricultural productivity. The productivity of the agricultural sectors is depends up on the advancement of agricultural technology. Consequently, the production and expansion of cash crops necessitates change in methods of production. Thus, advance in agricultural technology enhances the patterns of cash crop production.

Access to and control over agricultural resources can affect patterns of cash cropping and vice versa. It is obvious that the productivity of the cash economy sectors depends on access to and control over land and cash. Access to and control over land is essential to decides on land issues which give power to enhance cash cropping patterns. Access to and control over cash enables one to purchase and use agricultural inputs for the productivity of the cash economy sector. Patterns of cash cropping and land allocation for

these crops affects access to and control over agricultural resources. If only man has power on the cash economy sector, woman's access to cash and land will be affected negatively. Thus, man's mere control over cash crops can disproportionately affect women's access to and control over agricultural resources. Access to and control over agricultural resources determines inheritance arrangement and vice versa. In a society where agricultural resources are under the absolute control of man, inheritance arrangement would most likely to follow patrilineal line. This kind of arrangement negatively affects women's inheritance right which in turn undermines agricultural development. Inheritance arrangement can also determine who has access to and control over agricultural resources. In a society where man's and woman's inheritance right is guaranteed, both have equal access to and control over agricultural resources.

Marriage system can affect inheritance arrangement and vice versa. In polygamy marriage system it is difficult to decide as whom, among wives, should inherit agricultural resources like land and livestock. However, it is easier to arrange inheritance right in monogamy marriage system. Inheritance arrangement will be difficult in polygamy marriage system. Inheritance arrangement can also affect marriage pattern. In a society where only man's inheritance right is guaranteed, woman's subordination in marriage relationship is inevitable. The shift from hoe to plough culture can affect marriage system and vice versa. As argued by Boserup (1970) and Goody (1976), in hoe culture polygamy marriage system prevails while monogamy is dominant in plough culture. The form of marriage system can also affect farming system. Since women's contribution for agricultural production is high in hoe culture, the preferred form of marriage is polygamy. The need for more women's labor necessitates polygamy form of marriage in hoe culture. Since women's contribution for agricultural production is low in plough culture, monogamy form of marriage is desired.

Chapter Three

Methodology

3.1 Study Design

The research site is located in Wenago Woreda. The researcher's familiarity to the area is a fundamental reason for selecting the area. Wenago Woreda, among the Zonal Woredas', is known in its two system of farming i.e. hoe and plough culture. Since the study's intention was to investigate changes and continuity in gender division of roles in hoe and plough culture, the Woreda is appropriate for this purpose. With in the Woreda, there are 17 Kebele Administration. Among those kebeles, Tumata-Chirecha and Sugalle were selected as the research site, purposefully.

3.2 Research Site

I. Tumata-Chirecha

Tumata-Chirecha is the one among the 17 KAs that are found with in Wenago Woreda. This kebele has a total population of 6919. With regard to agro-ecological zone, topographically Tumata-Chirecha is covered by plain lands as a result it enjoys both Woyinadega and dominantly Kolla type of climate. The dominant crops that are grown in the kebele includes: Cash crops like coffee, fruits and vegetables, roots and tubers crops like sweat potato, field crops like maize and sorghum, sugarcane, teff and others. Farmers with in the kebele have adopted plough culture with the view to boost agricultural productivity. Thus, farmers' of the kebele are practicing plough farming system.

II. Sugalle

It is the one among the 17 KAs of the Woreda. The kebele has a total population of 7122. Sugalle has a mountainous type of topography and has a Woyinadega and Dega type of agro-ecological zone. It grows cash crops like coffee and fruits and vegetables, roots and tubers crops, sugarcane and maize. However, farmers' of the kebele are using hoe techniques in agricultural production. Thus, hoe farming system is the characteristics of the kebele.

Cross-sectional survey method was used to assess the effect of change from hoe to plough farming system and patterns of cash cropping on institutional arrangements,

resources control, marriage patterns and inheritance system and all in-turn on the gender division of roles in agricultural production. This method was chosen instead of longitudinal approach owing to the study's limitation in terms of both time and money. Unlike the longitudinal approach, cross-sectional survey method is efficient for one time data collection and analysis. Besides, it is the most frequently used method in most social science researchers (ECSC, 2008).

3.1.2 Sampling Techniques

A four-stage sampling strategy was used to select farm households for the study. First, the researcher contacted Woreda Agricultural and Rural Development Bureau officers and experts and identified the number of KAs in the Woreda. There are 17 KAs in the Woreda. Second, the researcher stratified those farmers kebele according to farming system i.e. plough vs. hoe culture. Accordingly, Tumata-Chirecha, Bele-Bukissa, Gemjemo, Kara-Soditi and Deko are categorized under plough culture. Sugalle, Hasse-Haro, Tokicha, Kelecha, Wotiko, Sokicha, Debota, Gelelicho, Mokinissa, Dederero, Danko-Okoto and Halemo are hoe areas. Third, purposive sampling was used to select two KAs, i.e. one plough and the other hoe cultivation area, based on their accessibility and dominantly inhabited by Gedeo community. Accordingly, from the 17 KAs that are found in Wenago woreda, two KAs were purposively chosen as the research site i.e. Sugalle (hoe area) and Tumata Chirecha (plough area). Fourth, after preparing a sample frame from kebele registration file 60 farm households from Tumata-Chirecha and 60 farm households from Sugalle were selected employing simple random systematic sampling method. As shown in section 3.1.3, the sample size was determined using statistical methods.

3.1.3 Population and Sample Size

The study was conducted in two KAs. The available data in the Woreda Agricultural and Rural Development Office reveals that 1200 (1013 male and 187 female) are found in Tumata-Chirecha KA and 1450(1118 male and 332 female) households in Sugalle KA (WWARDO, 2010).

Sample size determination is not an easy task since it is affected by several factors. Sample size for instance, depends on the type of research design, the desired level of

confidence, population characteristic, cost and time availability. To minimize the problem and to keep the representativeness of the sample in the population, in this research the following formulas were used to determine the sample size, the formulas often used in most social science researches when the target population is less than 10,000 (ECSC, 2008).

$$1. n = (z\alpha/2)^2 pq / d^2 \quad 2. nf = n / 1 + ((n - 1) / N)$$

Where: n - is desired sample size (when the population is greater than 10,000)

nf - is the desired sample size (when the population is less than 10,000)

$z\alpha/2$ - is the standard normal deviate at the required (95%) confidence limit
(1.96)

p - is 0.1 (Proportion of in the target population to be included in the sample)

q - is 1 - p (1 - 0.1 = 0.90)

d - is the level of statistical accuracy (margin of error) set usually at 0.05

N - is the total number of the population

Using the above formulas, the desired sample size (nf) is calculated as follows:

$$n = (Z\alpha/2)^2 pq / d^2 \quad \text{Therefore } n = (1.96)^2 (0.1 * 0.9) / (0.05)^2 = 138$$

Substituting the value of n (138) in the second formula the actual sample household number is calculated as follows:

$$nf = n / 1 + ((n - 1) / N)$$

$$nf = 138 / 1 + ((138 - 1) / 2389) = 120$$

The method resulted in a sample size of 120 rural households. However, out of 120 sample households, 117 valid samples (59 plough culture household heads and 58 hoe culture household heads) were entered in to the analysis. The remaining samples (1 sample household from plough culture and 2 sample households from hoe culture) were accounted to be unacceptable because enumerators missed pertinent variables at the time of data collection and it was not viable to make another data collection for the second time due to time and money constraints. Besides, the researcher believes that such insignificant number will not have any major effect on the results of the study.

3.1.4 Data Type and Sources

The research was used both primary and secondary sources to collect data for the study. Primary data were collected through structured and semi-structured questionnaires of open ended and close-ended type, key informant and focus group discussion techniques. Secondary data were collected from relevant documents such as books, articles, magazines, news papers, statistical reports and above all from documentary records of Wenago Woreda Agricultural Office (WWARDO) and Wenago Town Information Desk.

The study made use of both qualitative and quantitative data types. The former were data collected from focus group discussions, key informant interviews and response from structured questionnaires. While the later were data on the number of livestock owned, farm size, Family size, number of children of sample households.

3.1.5 Data Collection Instruments

Numerous data collection techniques can be used in any scientific investigation. However, the study employed selected data collection techniques such as formal survey questionnaires, Key informant interviews, In-depth case interview and FGDs. Close-ended structured questionnaires was used to collect data that doesn't need further explanation where as semi-structured questionnaires was used to collect information that needs further probing. Key informant interviews were chosen to collect general information from rural kebele and Woreda government officials. Focus Group Discussions and In-depth case interview were used to collect information that is hardly to be caught by other methods to triangulate the reliability and validity of data collected by other methods. In addition to these, Personal observation was also used in order to triangulate the accuracy of information gathered using the aforementioned techniques, to observe farming activities of rural farmers and different photos were taken around the farm environment of the study area.

i. Structured Questionnaire:

Since the study is multidimensional; four separate groups of structured questionnaires were prepared for plough and hoe culture farmers. The questionnaires consist of both open and close-ended questions. Prior to actual data collection process, the questionnaires were translated in to native language (*Gedeoffa*) and their reliability was pre-tested to take corrective measures. After the correction, enumerators were chosen based on educational status (all the six enumerators were agricultural extension workers in the Woreda), experience and previous data collection familiarity. All enumerators were given trainings on how to conduct face-to-face interviews and fill the survey questionnaires. To overcome any difficulty of understanding from respondents' side, interviewers read each question, elaborate it, recorded the response, and allow minimizing non-response rates and missing values.

ii. Focus Group Discussion (FGD):

To triangulate the reliability of data collected by other instruments, two FGDs "with 10 men farm household members from hoe and plough culture" was established independently in each of the kebele. Selection of FGD members was made through the help of DAs and kebele officials. The researcher himself and two enumerators recorded the information obtained from the FGDs manually.

iii. In-Depth Case Interview:

Information's that were difficult to obtain through other instruments, four in-depth case interviews were independently conducted with women farmers from hoe and plough culture to triangulate the information obtained from men farmers in hoe and plough culture through FGDs. Accordingly, separate discussion was conducted with four women from hoe culture. Similarly, independent discussion was held with four women farmers from plough culture. The selection of women farmer was done through the help of development agents in each kebele and kebele officials.



iv. Key Informant Interview:

In addition to the above instruments, key informant interview was used to gather relevant information from Woreda government officials to assess the changes and continuity in gender division of roles in hoe and plough culture. In this approach, development agents of sample KAs, chairperson of sample KAs, key officials and experts in Wenago *Woreda* Agricultural and Rural Development Office (WWARDO) and Key officials and experts in Wenago Woreda Women Affair Office(WWWAO) were included. The researcher himself and an enumerator recorded the information obtained from the key informant interview manually.

V. Personal Observation:

In order to triangulate, the accuracy of information gathered using the preceding instruments, personal observation of the researcher to sample KAs, farmers while in field work and the agricultural environment were made and relevant photos were taken and included in the result and discussion part of the study.

3.1.6 Methods of Data Analysis

Initially, the data clearing process was conducted to identify any missing value and to take corrective measures by cross-checking the corresponding questionnaires. The data gathered was analyzed using various descriptive and statistical tools. To make the analysis simple, response gathered from open and closed-ended questions were edited and coded. The coded responses fed into computer and analyzed using appropriate SPSS (Statistical Program for Social Sciences).

Analysis of data was conducted to show important relationships of variables under the study. To this end mixes of qualitative and quantitative methods used in the study. Descriptive statistics was used to analyze and describe the data quantitatively by making use of SPSS version16.0. Besides, the researcher used narration to analyze and present the qualitative data. More specifically, data gathered through FGDs, key informant interview, personal observation and open-ended questions were analyzed through narration.

3.2 Description of the Study Area

3.2.1 Location and Population of the study Area.

Gedeo zone is found in Southern Nations, Nationalities and peoples' Regional State (SNNP). According to the 2007 Population and Housing census, the region has a total population of 15,042,531, out of which 7,482,051 and 7,560,480 constitutes male and female population respectively. The annual population growth rate for the period 1994-2007 of the region was 2.9%. From the total population of the region, the Gedeo ethnic group constitutes 879,749 populations (male, 441,301, female 438,368) and lives and work in Gedeo zone (CSA, 2007). Wenago Woreda is the one among the six Woredas' of the zone, located at about 374 kilometers South of Addis Ababa and 100 kilometers South of Hawassa, capital of Southern Nations, Nationalities and Peoples' State and 14 kilometers South of Dilla, which is the capital of Gedeo zone. Wenago Woreda has a total population of 117,630 (male 58,522, female 59,108), both Rural and Urban. Among the Zonal Woredas', Wenago Woreda has the highest population density in the Zone. There are 17 KAs in the Woreda. This study was carried-out in Tumata-Chirecha which has a total population of 6919, and Sugalle which also has a total population of 7122 (WWIB, 2010).

3.2.2 Climate, Altitude and Vegetation

Wenago Woreda enjoys different climatic condition. Among the climatic zones of the Woreda, the following are dominant: Woyinadega, Dega and Kolla which constitutes 54.5%, 39.5% and 6% respectively. The Woreda is characterized by an annual temperature 29.23c (highest) and 11.23c (lowest) and with an annual rainfall 1449mm (highest) and 873mm (lowest). Altitude affects the distribution of both rainfall and temperature. The Woreda is found at an elevation of 1570-2070 above sea level (WWARDO, 2010). With regard to vegetation cover, Wenago Woreda has vegetation cover that ranges from small bushes and acacia trees to very long endemic trees.

3.2.3 Administrative Structure

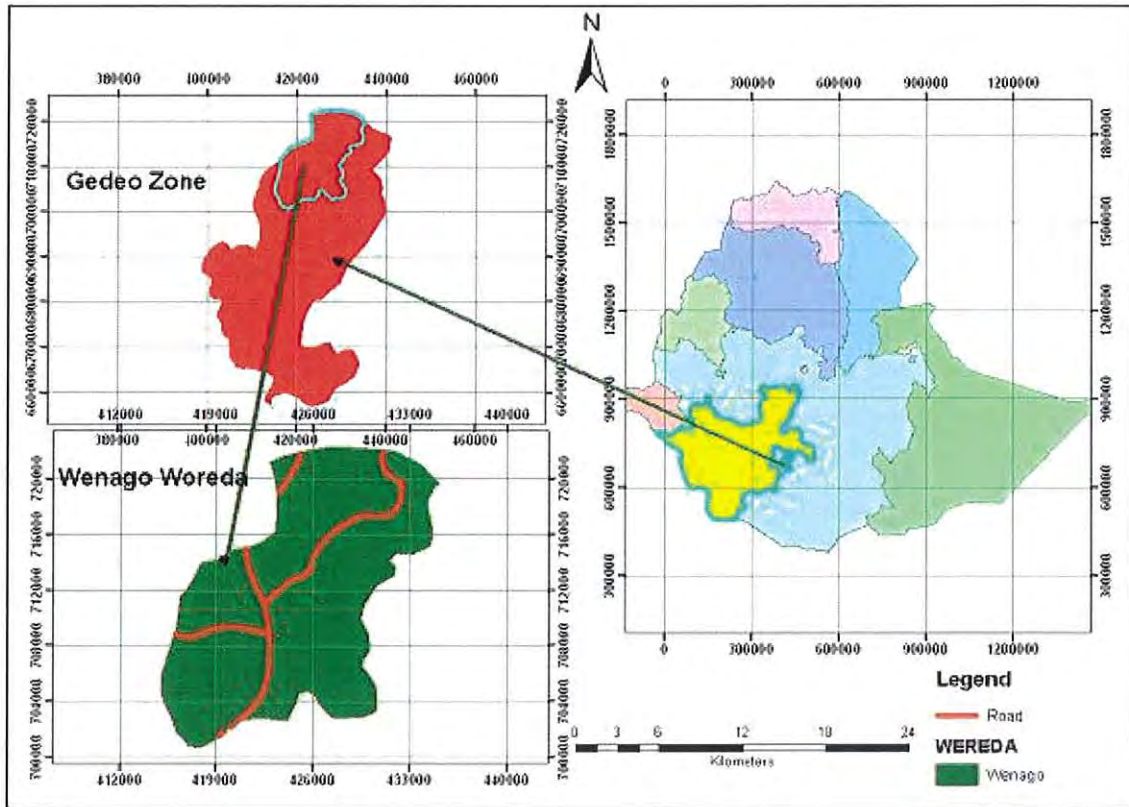
Gedeo Zone is one of the 13 Zones in Southern Nations, Nationalities and Peoples' regional state. The Zone is divided into Six Woredas ; Wenago, Yirgachife, Bule, Dilla Zuria, Kochere, Gedeb Woredas'. Dilla is the capital city of the Zone.

3.2.4 Economic Basis of the Study Population

The Gedeo community is dominantly an agrarian society and agriculture is the main-stay of the community. The Gedeo belong to the enset-complex farming system. It represents a mixed type of sedentary agriculture with intensive utilization of land resulting from the increasingly high population pressure. The Gedeo highland is characterized by the combination of enset, coffee, fruits and vegetables and household level livestock production.. The livelihood of the community is dependent on the production of cash crops. Coffee, being the first agricultural out-put, is the main sources of cash in the community. The Gedeo communities are known by their coffee production, notably Yirgachife coffee is produced by this community. Next to coffee, the livelihood of the community depends on the production of fruits and vegetables. The Gedeo communities are known in their fruits and vegetables not only in the region but also at national level. Therefore, the economic basis of the society is agriculture i.e. the production of cash crops. Small scale animal husbandry is also carried-out by the community. Enset is a staple food of the community. The production of enset which is left for women is the main food crop of the community. The current land use structure of the Woreda reveals that 679.95 hectare is covered by annual crops, 11559.5 hectare is covered by perennial crops, 203.94 hectare is (fragment) forest, 530.36 hectare is covered under construction, 543.96 hectare is grazing land and 81.5 hectare is others (WWARDO, 2010). Currently, the community is practicing agro-forestry farming system. Due to land degradation, land fragmentation and prevalence of soil erosion and land degradation, the community is promoting agro-forestry system of farming. With in the agricultural fields, there are different types of trees which use as a shade for coffee production.



Figure 3.1 Study Area Map



Sources: Ethio-GIS, 2010

Figure 3.2 Agro-forestry Farming System



Source: own Survey, 2010

Chapter 4: Results and Discussion

4.1 Socio-Economic Characteristics of Sample Households

In this section, the demographic characteristics of rural households are described. Basic demographic variables: age, marital status, level of education, and occupation, are summarized from the field survey data to offer bird's eye-view to readers on the general characteristics of the studied population.

4.1.1 Sex and Ethnic Composition of the Sample Households

Demographic characteristics of sample rural households reveal that all respondents are male headed household. The ethnic composition of the people in the study area is basically Gedeo. As a result, all respondents belong to the Gedeo ethnic group who speak Gedeogna, a language shared by that particular community.

4.1.2 Educational Status of the Respondents

The following table (Table 4.1) illustrates the educational background of sample households

Table 4.1 Educational status of sample households

Education Level	Plough culture (N=59)	Hoe culture (N=58)
	Frequency	Frequency
Illiterate	10(16.9)	5(8.6)
Primary level (1-6)	33(55.9)	30(51.7)
Junior level (7-8)	8(13.6)	15(25.9)
High school level (9-12)	8(13.6)	8(13.8)
Tertiary level (college)	-	-

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

From the above table one can infer that the number of illiterate relatively exceeds in plough culture unlike hoe culture. In relative term unlike hoe culture farmers, the majority of plough culture farmers attained primary level of education. Unlike plough culture farmers, the majority of hoe culture farmers attended junior level education.

Almost equal number of hoe and plough culture farmers attended high school level education.

4.1.3 Age Structure of Sample Households

Table 4.2 Age structure of the respondents

Age structure (in years)	Plough culture (N=59)	Hoe culture (N=58)
	Frequency	Frequency
Less than 18	-	-
18-34	40(67.8)	23(39.7)
35-50	16(27.1)	26(44.8)
51-60	1(1.7)	8(13.8)
Above 60	2(3.4)	1(1.7)

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

As to the above table, no respondents were found in the age category of less than 18 years of age from both hoe and plough culture. The majority of plough culture farmers, unlike hoe culture, were found in the age category of between 35-50 years of age. Unlike plough culture farmers, the majority of hoe culture farmers were found in the age category of between 51-60 years of age. Relatively most plough culture farmers, unlike hoe culture, were found in the age category of above 60 years of age

4.1.4 Household Size of Sample Households

Table 4.3 Number of children of the respondents

Number of children	Plough culture (N=59)	Hoe culture (N=58)
	Frequency	Frequency
No children	-	-
One	2(3.4)	-
Two	1(1.7)	2(3.4)
Three	14(23.7)	8(13.8)
Four	13(22.0)	17(29.3)
Five	8(13.8)	12(20.7)
Six and above	21(35.6)	19(32.8)

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

The above table reveals that plough culture respondents have one child unlike hoe culture. Unlike plough culture, hoe culture respondents have two children. Relatively more respondents from plough culture, unlike hoe culture, indicated that they have three children. Unlike plough culture, more respondents in relative term indicated that they have four children. Distinct from plough culture, relatively more respondents from hoe culture indicated that they have five children. Almost equal number of respondents from both hoe and plough culture indicated that they have six and more children.

4.4 Family Size of the respondents

Family size	Plough culture (N=59)	Hoe culture (N=58)
	Frequency	Frequency
One	-	-
Two	-	-
Three	-	-
Four	3(3.4)	1(1.7)
Five	15(25.4)	9(15.5)
Six and above	42(71.2)	48(82.8)

Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages

As to the table, no respondents from both hoe and plough culture indicated that they have a family size of one, two and three. All sample rural households have more than three family members. Unlike plough culture, fairly more respondents from hoe culture indicated as having four family members. Quite more respondents from plough culture, unlike hoe culture, showed as having five family members. Relatively more respondents from hoe culture, unlike plough culture, indicated that they have six and more than six family members. Thus, unlike plough culture, hoe culture farmers have comparatively large family size. Hoe culture farmers have minimum 4 and maximum 12 family members, while plough culture farmers have minimum 4 and maximum 10 family members. The average family size of hoe culture is 5.8 family members while plough culture 5.5 family members.

4.1.5 Marital Status of the Sample Households

Traditionally, the Gedeo communities were known in their polygamy of marriage. However, currently monogamy prevails in the community.

4.1.6 Economic Activities and Sources of Cash Income

All respondents are engaged in agricultural activities, major crop farming with minor livestock production. Among the major crops grown on sample rural household farm plots, coffee, banana, enset, sugarcane, fruits and vegetables, and Sweet potato are the major ones. Among the livestock production the following are dominant: cattle rising, poultry and bee keeping.

Table 4.5 Average Annual Income of Sample Households

Average annual income (in birr)	Plough culture(N=59)	Hoe culture (N=58)
	Frequency	Frequency
Less than or equal to 1500	3(5.1)	25(43.1)
1501-3000	34(57.6)	24(41.4)
3001-4500	17(28.8)	8(13.8)
4501-6000	2(3.4)	-
6001-7500	-	-
7501-9000	-	-
9001-10500	-	1(1.7)
Above 10500	3(5.1)	-

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

From the above table, the writer infers that a significant number of hoe culture farmers, unlike plough culture, had average annual income of less than 1500birr. The majority of plough culture farmers, unlike hoe culture, are categorized in the average income category of between 1500-3000birr. Unlike hoe culture, the majority of plough culture farmers had average annual income between 3001-4500birr. Only plough culture farmers, unlike hoe culture, were found in the average annual income category of 4501-6000birr. Likewise, unlike plough culture, only hoe culture farmers were found in the average income category of 9001-10500birr. In contrast to hoe culture, only plough culture farmers were found in the average income category of more than 10500birr. The majority (84.5%) of hoe respondents have an annual average income of less than or equal to 3000birr. The majority (91%) of plough culture have an annual average income of less than or equal to 4500birr. Responses obtained from plough culture indicates that the minimum and maximum average annual income is less than 1500 and 10500birr respectively. While the minimum and maximum average annual income of hoe culture is

less than 1500 and 9001 birr respectively. Thus, the average annual income of plough culture is relatively better than the average annual income of hoe culture.

4.2 Land Holding and Ownership System

Land is a capital asset offering opportunities for social and economic empowerment and thereby a springboard from which to escape from poverty.

Table 4.6 Land Holding Size of Sample Households

Land size (in hectare)	Plough culture (N=59)	Hoe culture (N=58)
	Frequency	Frequency
Less than one	22(37.3)	38(65.5)
One-two	22(37.3)	15(25.9)
Two-three	7(11.9)	2(3.4)
Three-four	8(13.6)	-
Above four		3(5.2)

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

The above table reveals that a significant number of hoe culture farmers, unlike plough culture, have a land size less than 1 hectare. In contrast to hoe culture, the majority of plough culture farmers have a land size of 1-2, 2-3 and above 4 hectare of land. Distinct from hoe culture, only plough culture farmers have a land size of 3-4 hectare. The minimum and maximum size of land among hoe culture is less than 1 hectare and “between” 3-4 hectare respectively. While the minimum and maximum land size among plough culture is less than 1 hectare and greater than 4 hectare. Thus, in-terms of land holding size plough culture have relatively large land holding size than hoe culture. With regard to land registration, all hoe and plow cultivators have registered their land. Certification for ownership of land have done under both husband’s and wife’s name. From this the writer infers that land is administered not only by husband’s will but also wife has equal power on land issues.

4.3 Gender Division of Roles in Crop and Livestock Production among

Hoe and Plough Culture

The gender division of roles in agricultural production by tasks is common in the study area. The data gathered from both hoe and plough culture indicates that there are tasks that are assigned to husbands and there are also tasks given to wife. However, now a day these demarcations of tasks are not absolute. Women and men among the Gedeo community participate in different agricultural tasks in various degrees.

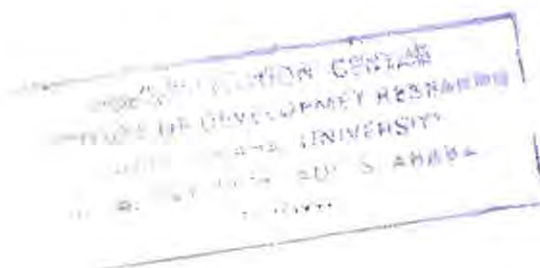
4.3.1 Gender division of roles in crop production among hoe and plough culture

In the traditional Gedeo community women had limited role in agricultural production. As to the FGDs, the role of women in agricultural production was limited to the preparation of enset for household consumption and marketing purpose. In addition to these, Women in the community were responsible for household tasks. Almost all farming tasks in crop production were done by men. Farming tasks like land clearing and preparation, hoeing, planting, weeding, harvesting, storing were considered as the responsibilities of men farmers in the community. These tasks were culturally considered as men's activities in the community. As a result, women's involvement in agricultural production was discouraged. However, women can participate in marketing activities. The following case explains this point:-

Case-1 women's role in agricultural production was low among the traditional Gedeo communities

W/o Adanech Bogale is 39 years of old. She is from plough culture. For the question that what is your traditional agricultural tasks? She responded that:-

"In the traditional setting it was our duty to provide husbands' with food and coffee while they work on agricultural field's and returns back for our domestic chores. Apart from these, our role in agricultural production was limited to marketing cabbage, and enset products." Although in a limited extent, we also involve in marketing fruits and vegetables production."



The above idea was also reflected among women farmers from hoe culture during the in-depth case interview.

However, in recent years the involvement of women in agricultural production has been increased. The reason for this, as revealed in FGDs and in-depth case interview, is the changes in the socio-cultural, economic and political life settings of the community. The socio-cultural attitudes had not allowed women for instance to inherit and control agricultural resources like land, livestock and categorized agricultural tasks like land clearing and preparation, hoeing, planting, harvesting and storing under men's tasks. However, the awareness created by different stakeholders like NGOs working on gender and agriculture in the Woreda, Woreda women affair office, Woreda agricultural and rural development office and extension workers contributed a lot in changing those socio-cultural attitudes. Traditionally, the production and marketing of cash crops particularly coffee considered as men's task. However, the integration of Gedeo community in to local and international market through coffee production (as economic element) changed the gender aspects of tasks in agricultural production. In the customary land holding system, women had only access to land through their husband. Control over land belongs to the husband. However, policy reforms like the formal land certification processes, as a political element, enabled woman to have access to and control over land. As a result of changes in the aforementioned factors, women's involvement in agricultural production has been increased and now a day use family labor is common in the study area.

Therefore, in the contemporary Gedeo farming community women share certain responsibility with their men in agricultural production. The gender division of roles in agricultural production in this way seems to take another direction (Table 4.7).

Table 4.7 Gender division of roles in crop production

Farming Tasks	Plough culture (N=59)				Hoe culture (58)			
	Responsible person				Responsible person			
	Husband	Wife	Both, mainly husband	Both, mainly wife	Husband	Wife	Both, mainly husband	Both mainly wife
Land clearing & preparation	50(84.7)	-	9(15.3)	-	58(100.0)	-	-	-
Ploughing	59(100.0)	-	-	-	-	-	-	-
Hoeing	-	-	-	-	58(100.0)	-	-	-
Planting	39(66.1)	-	20(33.9)	-	42(72.4)	-	16(27.6)	-
Weeding	15(25.4)	-	44(74.6)	-	5(8.6)	1(1.7)	52(89.7)	-
Harvesting	-	-	59(100.0)	-	3(5.2)	7(12.1)	48(82.8)	-
Transporting the harvest	-	-	48(81.4)	11(18.6)	5(8.6)	1(1.7)	47(81.0)	5(8.6)
storing	12(20.3)	-	47(79.7)	-	4(6.9)	-	54(93.1)	-
Marketing	12(20.3)	-	47(79.7)	-	3(5.2)	1(1.7)	49(84.5)	5(8.6)

Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages

As to the above table, the gender division of tasks in crop production indicates that land clearing and preparation is dominantly carried-out by men among hoe and plough culture. This result found in contradiction to Yilma's and Emily's assertion. Yilma (2002) concluded that land clearing and preparation is chiefly conducted by women among the Konso community. Likewise, Emily (1999) asserted that land clearing and preparation is women's primary agricultural responsibility. However, in both system of farming land clearing and preparation is men's primary responsibility among the Gedeo farming community. Unlike hoe culture, to some extent women among plough culture participates

in land clearing and preparation. Thus, there is a difference between hoe and plough culture on the task of land clearing and preparation. All respondents from plough and hoe culture indicated that ploughing and hoeing is men's exclusive (husband's) task respectively.

Among the Gedeo farming community (both plough and hoe culture) there are farm activities that a wife don not actually under-take. Responses obtained from survey open-ended questionnaires reveals that all respondents from plough culture indicated that ploughing and land clearing and preparation are not the task of women. Factors that influence women's participation in such farm activities includes: a significant (91.5%) number of respondents indicated physical weakness while the rest, 5.1% and 3.4% responded that these farm activities are culturally male tasks and others (health problems) respectively. Consistent to this, all respondents from hoe culture indicated that hoeing and land clearing and preparation are not wife's farm activities. The majorities (77.6%) of hoe respondents indicated physical weakness as a reason while the rest, 20.7% and 1.7% responded that these farm activities are culturally male tasks and women are culturally prohibited to do these farm activities respectively. (Annex 4) This is also confirmed in FGDs. As to the discussion ploughing and hoeing are not women's task. This is mainly due to the fact that such tasks require huge efforts and as such only men can handle them.

With regard to planting, men play a dominant role in both farming system (hoe and plough culture). Despite this, women also can take part in planting among hoe and plough culture. In both system of farming weeding is the responsibility of men with helps from women, though there is a slight difference between hoe and plough culture. Unlike plough culture, one respondent from hoe culture indicated that weeding is the responsibility of women. All respondents from plough culture indicated that harvesting is done by both, mainly husband. Although a significant number of respondents from hoe culture, unlike plough culture, indicated that harvesting is the responsibility of men, women also participate in harvesting crops. However, insignificant difference has observed between hoe and plough culture on harvesting crops.

(2002) also asserted that men contribution in plough culture is high among the Konso farming community.

It is true that the contribution of men in agricultural production is high among the Gedeo plough culture. The results of this study found consistent with Dessalegn's conclusion. Dessalegn (1991) found out that the contribution of women in agricultural production is found low among the Wollo plough culture farmers. Although, to some extent share of responsibilities have been observed, the contribution of women among the Gedeo plough culture found low. In this regard Boserups and Goody and Yilma asserted that the low contribution of women in agricultural production is due to the shift in agricultural technology i.e. from hoe to plough. Boserup (1970) and Goody (1976) found out that the contribution of women farmers in plough culture is low. Likewise, Yilma (2002) concluded that the contribution of women in agricultural production found low among the Konso plough culture. However, the situation in the Gedeo farming community is different. Irrespective of the farming system (hoe or plough), man plays a vital role in agricultural production among the Gedeo community. The contribution of women farmers in both hoe and plough culture has found almost similar. As to Bryson (1981), the writer believes that the reasons for the low contribution of woman in agricultural production must be sought in factors other than technology; an important part of the answer could be the "social structure".

Figure 4.7 Gender division of labor in hoe culture



Source Own Survey, Feb. 2010

Figure 4.8 Gender division of labor in plough culture



Source own survey, Feb. 2010

4.3.2 Gender division of roles in livestock production among hoe and plough culture

Women in the traditional Gedeo community play a vital role in the operation and management of livestock production unlike their role in arable farming. The FGDs revealed that women unlike their men counter parts take the biggest share in livestock production. Women in earlier days take full charge of tasks like barn cleaning, milking and milk processing, marketing milk and its products and poultry production. The following case explains this point:-

Case-2 in the traditional Gedeo community women take active role in the operation and management of livestock production.

W/o Amarech Deyiasso is 46 years of old. She is from hoe culture. She explained women's traditional role in livestock production in a way that:-

“Unlike our men counter parts; we had been taking the day -to –day activities in the livestock production. We were responsible in barn cleaning, milking, marketing milk and its products. Indeed, herding, supplying fodder and taking animals to the health center were mainly conducted by men. However, now a day we also participate in every aspects of livestock production.”

The above idea is true irrespective of farming system. This is because the same idea was reflected among women farmers from plough culture.

This indicates that beyond their role under the traditional settings, women now a day play great role in the operation and management of livestock production.

The gender division of roles in livestock production among the Gedeo farming community is shown in Table 4.8. As the Table reveals, women take the largest task share in the sector.

Table 4.8 Gender division of roles in livestock production

Tasks in livestock production	Plough culture (N=59)					Hoe culture(N=59)				
	Responsible person					Responsible person				
	Husband	Wife	Both, dominantly husband	Both, dominantly wife	Others	Husband	Wife	Both, dominantly husband	Both dominantly wife	Others
Herding	2(3.4)	-	28(47.5)	17(28.8)	12(20.3)	-	4(8.3)	7(14.6)	12(25.0)	25(43.1)
Supplying fodder	2(3.4)	-	43(72.9)	13(22.0)	1(1.7)	3(6.2)	-	40(69.0)	5(8.6)	-
Barn cleaning	2(3.4)	38(64.4)	5(8.5)	14(23.7)	-	-	34(58.6)	-	14(24.1)	-
Milking	2(3.4)	42(71.2)	8(13.6)	7(11.9)	-	-	35(74.5)	3(6.4)	9(19.1)	-
Milk processing	-	56(94.9)	-	3(5.1)	-	-	40(85.1)	-	7(14.9)	-
Attending sick animals	50(84.7)	-	8(13.6)	1(1.7)	-	34(70.8)	-	13(27.1)	1(2.1)	-
Poultry production	-	8(13.6)	8(13.6)	43(72.9)	-	2(4.3)	30(65.2)	7(15.2)	6(13.0)	1(2.2)
Bee keeping	19(48.7)	-	15(38.5)	5(12.8)	-	24(96.0)	-	1(4.0)	-	-

Source Own Survey, Feb. 2010

* Figures in parenthesis are percentages

* Others (children, relatives and herd)

In the study area, as revealed in the above tables, unlike hoe culture, in which herding is the responsibility of others (i.e. children, herd and relatives), a majority of respondents from plough culture responded both, mainly husband. However, in both farming system women participates in herding animals.

This finding contradicts with Yilma's (2002) conclusion that herding is exclusively carried-out by men among the Konso farming community. However, among the Gedeo community, unlike Konso community, herding is a task shared by both, wife and husband; though husband takes the largest share. Although herding is a task shared by man and woman in hoe and plough culture, a slight difference has observed between hoe

and plough culture. With regard to supplying fodder, a significant number of respondents from hoe and plough culture indicated that supplying fodder is the responsibility of men and women, although man takes the biggest share. Similarly, in both system of farming women also take part in supplying fodder. This finding is contrary to Yilma's study that women take the greatest portion in providing animal fodder. The majority of respondents from hoe and plough culture indicated that barn cleaning is the responsibility of women. This study found consistent with ILRI's report that barn cleaning is a major responsibility of wife (Tangka et al, 2000).

Significant number of respondents from hoe and plough culture indicated that milking and milk processing is the task of wife. This result conforms to Martins (1990) and IRLI's conclusion that milking and milk processing is the responsibility of wife. However, it is contrary to Yilma's (2002) finding i.e. husband take the major responsibility in milking and milk processing among the Konso. Thus, among the Gedeo farming community women have better access to and control over the production and marketing of milk and milk processing which in-turn positively affect women's means of income.

The majority of hoe and plough respondents indicated that attending sick animals is the responsibility of husband. However, in both system of farming woman can also participate in attending sick animals. This finding found in conformity with ILRI's report that men take the primary responsibility in taking animal to health treatment.

With regard to the responsibility of poultry production, women in both hoe and plough farming system takes the largest share. However, men can also participate in poultry production among hoe and plough culture. Although women take the biggest share, there is a difference between hoe and plough culture on the issue of poultry production. The result of this study was found consistent with Dessalegn's (1991) and Bogaleche's (1998) finding that women take a prime responsibility in looking after poultry. In both farming system, bee keeping is man's primary task. Here, women also participates in bee keeping in both hoe and plough cultivation system. However, difference has observed between hoe and plough culture on the task bee keeping.

Generally, women in the Gedeo community take active role in livestock production than in arable farming. ILRI report has also indicated the same at country level. They involve in herding, attending sick animals and supplying fodder. However, they take a significant share in barn cleaning, milking and milk processing and in poultry production. This entails that women participates in every aspects of livestock production. However, the participation of men in the sector limited to herding, attending sick animals and supplying fodder. Results obtained from FGDs also reveal that the livestock sector almost left for women. This is because men farmers are highly attracted to coffee production. Therefore, from the above data, FGDs and in-depth case interview one can conclude that among the Gedeo community (hoe and plough culture) women take the largest share in livestock production.

4.4 Gender Division of Roles in Cash Crop Production

All respondents from hoe and plough culture indicated that they produce cash crops. Coffee is the dominant cash crop for domestic and international market while Fruits and vegetables are the second cash crop in the study area for local market. Others cash crops include: sweat potato, sugarcane, some grains like sorghum, maize and teff for local market, though insignificant.

4.4.1 Gender division of roles in coffee production

Under the traditional settings, women had no role in coffee production. As to the FGDs tasks like planting, weeding, harvesting, storing and marketing coffee were considered as men's responsibilities. The following case explains this point:-

Case-3 the production and marketing of coffee production considered as the economic domain of men.

W/o Tadelech Dalke is 43 years old. She is from plough culture. I asked her about whose domain is producing coffee production? She responded that:-

"In our culture, the production and marketing of coffee was regarded as husbands' responsibility. Our role was to provide meals while they were working at field. Despite sharing certain farm tasks, still to day the coffee sector

considered as the economic domain of men.”

Women farmers from hoe culture responded in similar way that coffee production considered as men crop.

In response to the high demand for coffee production in local, national and international markets, however, the community began to use women’s labor with the view to increase the productivity of the sector. Thus, unlike their role under traditional settings, women to day are involving in harvesting, storing and marketing activities. Nevertheless, the coffee sector still considered as the economic domain of men. This was revealed in the subsequent discussions.

With regard to the responsibilities in producing cash crops, coffee, the majority (78.0) of plough culture responded husband and 22.0% responded both (husband and wife). While almost equal number (77.6%) of respondents from hoe culture indicated husband is responsible for the production and marketing of coffee and 22.4% responded that it is the responsibility of both (wife and husband). Thus, one can infer that the production of coffee for local and international markets is the responsibility of men among the Gedeo community (Table 4.9).

Table 4.9 Gender division of roles in cash crop production, Coffee

Farming Tasks in cash crop production(coffee)	Plough culture (N=59)				Hoe culture (N=58)			
	Responsible person				Responsible person			
	Husband	Wife	Both, mainly husband	Both, mainly wife	Husband	Wife	Both, mainly husband	Both mainly wife
Planting	59(100.0)	-	-	-	58(100.0)			
Weeding	59(100.0)	-	-	-	52(89.7)	-	6(10.3)	-
Harvesting	3(5.1)	-	56(94.9)	-	-	-	55(94.8)	3(5.2)
Storing	3(5.1)	-	56(94.9)	-	5(8.6)	-	53(91.4)	-
Marketing	7(11.9)	-	52(88.1)	-	6(10.3)	-	52(89.7)	-

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

As indicated in the above table, planting and weeding is the responsibility of men among plough culture. Although men take the biggest share, women are also involved in

weeding among hoe culture, unlike plough culture. The responsibility of harvesting among hoe and plough culture is given to men and women, although husband take active role. However, unlike plough culture, women among hoe culture take active role in harvesting. With regard to storing and marketing, almost equal number of respondents from both hoe and plough culture indicated men and women, although husband takes the greater share. What is observed in both hoe and plough culture, no tasks in coffee production exclusively and/or with the domination of wife are being carried out with the exception of harvesting in hoe culture. This entails that the production and marketing of coffee dominantly controlled by men. The incomes obtained from sale of coffee are largely spent on house construction and agricultural inputs.

4.4.2 Gender division of roles in fruits and vegetables production

The production of fruits and vegetables among the Gedeo community held the second position next to coffee as a cash crop. However, unlike coffee, fruits and vegetables are produced only for local market. As to the FGDs, in the past this sector was dominated by husbands'. However, unlike coffee in which women had no role, women share certain tasks in fruits and vegetables production. For instance, women take active role in harvesting, storing and marketing activities. As the economic return from coffee increases men began to leave the sector for their wife.

Case -4 the production and marketing of fruits and vegetables are the domain of women.

W/o Lemlem Gobena is 35 years old and she is from hoe culture. For the question that whose domain is producing and marketing fruits and vegetables? She responded in a way that :-

“In the traditional setting we had better role in fruits and vegetables production unlike coffee and crop production. With the exception of planting and weeding, we share tasks with our husbands in every aspects of the sector. But now due to the expansion of coffee in the area and its good economic returns, men began to leave the cultivation and marketing of fruits and vegetables for us. As a result of this, the bulk of tasks in the sector are taken by us.”

The above idea was reflected in women's from plough culture. Thus, in both hoe and plough culture similar patterns of gender division of roles have been observed.

Now- a -day the responsibility of producing fruits and vegetables are given mainly to women among the Gedeo communities. This proved true among hoe and plough culture. A significant (77.6%) number of respondents from plough culture indicated that producing and marketing fruits and vegetables is wife's responsibility and 22.4% responded both (wife and husband). Likewise, the majority (81.0%) of respondents from hoe culture responded wife while 19.0% responded both (Table 4.10).

Table 4.10 Gender division of roles in cash crop production, Fruits & Vegetables

Farming Tasks in cash crop production (fruits & vegetables)	Plough culture (N=59)				Hoe culture (N=58)			
	Responsible person				Responsible person			
	Husband	Wife	Both, mainly husband	Both, mainly wife	Husband	Wife	Both, mainly husband	Both mainly wife
Planting	41(69.5)	-	14(23.7)	4(6.8)	43(74.1)	-	7(12.1)	8(13.8)
Weeding	44(74.6)	-	15(25.4)	-	41(70.7)	-	14(24.1)	3(5.2)
Pesticide	44(81.5)	-	10(18.5)	-	13(22.2)	-	1(5.6)	4(22.2)
Harvesting	-	11(18.6)	18(30.5)	30(50.8)	-	37(63.8)	10(17.2)	11(19.0)
Storing	-	11(18.6)	18(30.5)	30(50.8)	-	37(63.8)	11(19.0)	10(17.2)
Marketing	-	12(20.3)	13(22.0)	34(57.6)	2(3.4)	39(67.2)	4(6.9)	13(22.4)

Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages

From the above table one can infer that the responsibility of planting and weeding is not only the responsibility of men among hoe and plough culture, women also participate in planting and weeding fruits and vegetables. The majority of respondents from both (hoe and plough) cultivation system indicated application of pesticide is carried-out by men. However, some hoe culture, unlike plough culture, indicated that women dominantly are involved in applying pesticide to crops. Farming tasks like harvesting, storing and marketing fruits and vegetables, although men participate, women take the biggest share among hoe and plough culture. However, unlike plough culture, in which men help women, women alone play active role in the production and marketing of fruits and

vegetables among hoe culture. This is mainly due to the fact that hoe culture farmers have relatively small plots and less surplus production. Thus, the production and marketing of fruits and vegetables is mainly given to wife. However, farmers in plough culture have large farm plots and relatively surplus fruits and vegetables production. This necessitates the involvement and help of husband in the sector. In both hoe and plough culture, wife plays a great role in covering the income necessary for household food consumption through the sale of fruits and vegetables.

So far, there seems no difference in the gender division of labor in crop, cash crops and livestock production in hoe and plough culture. However, elements of change and continuity in gender division of roles have been observed in both hoe and plough culture.

The finding of this study revealed that the cultivation and marketing of cash crops didn't restrict women in the production of food crops. Koehler's (1999) study found out that women are involved more in crops produced for household consumption and for domestic markets. Likewise, women, in both hoe and plough culture, are more involved in crops produced for household consumption like enset and cabbage production and in fruits and vegetables which are cultivated and marketed for the domestic market. However, coffee among the Gedeo is a more commercialized crop cultivated on a much larger scale either for direct export or for further processing is the economic domain of men.

As observed in the gender division of roles in crop production, most farming tasks among hoe and plough culture are carried-out by men with little support from women. Women among the Gedeo community have low role in arable farming as compared to their role in livestock production. These facts are not exceptional in the production of food crops although women take certain responsibilities. The FGDs also indicated that women's active role in the preparation of enset for household consumption and marketing purpose, in cabbage production and in some homestead food crops still persisted. Therefore, the cultivation and marketing of cash crops seems not eroded women's role in food crops production. Rather, it brought women to involve more in the production and marketing of fruits and vegetables while men are being playing a dominant role in the production and marketing of coffee. What observed here is that women help men's tasks in the

production of coffee while men help women's task in the production of fruits and vegetables as indicated in Table 4.9 and 4.10.

The result of this study is found to be consistent with Syntayehu's and Wessen's conclusion. Sintayehu (2004) asserted that men play a vital role in the production of coffee while women take active role in the production and marketing of enset products. Wessen (2008) insisted that women share certain tasks in the production of coffee with their men among the Mejengier farming community. Like Syntayehu's assertion, Men among the Gedeo community play a dominant role in the cultivation and marketing of coffee while women have vital role in the production, processing and marketing of enset production parallel with the cultivation and marketing of fruits and vegetables. Like Wessen's insistence, women share certain tasks with their men in the production of coffee in the Gedeo community.

4.5 Cash Cropping and Women's Access to Land

Concerning use of land for cash crops (coffee and fruits and vegetables) the majority of respondents from both hoe and plough culture indicated that use of land for the aforementioned cash crops limited their allocation of land for food crops like enset and some other root and grain crops. For instance, from the total land coverage of the woreda, 13,599.3hectare, 11,559.59 of land is covered by coffee production (WWARDO, 2008). This implies that the production and expansion of coffee, which is dominated by men, not only impeded food crops cultivation but also the production and expansion of fruits and vegetables as cash crops, which is dominated by women, in the study area.

A significant (79.7%) number of respondents from plough culture indicated that use of land for cash crops and the expansion of cash crops in their area limited their allocation of land for food crops and 20.3% responded that use of land for cash crops didn't affect their allocation of land for food crops. Similarly, the majority (82.8%) of hoe culture respondents indicated that land use for cash crop negatively affected their allocation of land for food crops while 17.2% responded as it has no effect on their allocation of land for food crops. These indicates that both hoe and plough culture have accepted the fact that land allotted for cash crops reduced their allocation of land for food crops. This



perception of farmers has revealed in Table 4.11. Accordingly, the majority of respondents from hoe and plough culture responded that use of land in favor of cash crop has increased. A significant number of respondents from hoe and plough culture indicated that allocation of land for food crops has decreased. Since the economic return from coffee is high, farmers of the study area expanded coffee production while clearing lands covered by enset and some roots and grain crops. The majority of respondents from hoe and plough culture indicated that women's access to and control over land has increased. This means that women's access to and control over land is not hampered by the expansion of cash crops. This is because to day women have better access to and control over land unlike their condition under the customary land holding system. Above all, fruits and vegetables production is controlled by women and as such land too allotted for these cash crops. However, the expansion of cash crops particularly coffee constrained the household to devote land for food crops like enset and some grain crops.

On the issue of women's access to and control over land, Bryson's (1981) and Zenebework's (1982) work reveals that the customary land holding system in many African societies had given women the right to own land. However, unlike their assertion, the FGDs indicated that the customary land holding system among the Gedeo didn't permit women to own land. The result of this study contradicts Boserup (1970), Bryson (1981), Lewis (1984) and Rogers (1980) conclusion that women's access to and control over land ensured by the low densities and the absence of demand for export crops. Unlike their assertion, women's denial of access to and control over land has nothing to do with the low densities of population and the presence of export crops in the Gedeo community. The Fundamental explanation to this is found in the socio-cultural components of the society. As revealed in the FDGs and in-depth case interview, women in the Gedeo community were culturally denied to own land. Here, the experience of Zimbabwe (Muchena, 1994 in Doss 1999) i.e. land use for cash crops reduced women's access to and control over land; seems to fit the situation in the Gedeo community. The FGDs, in-depth case interview and responses obtained from closed-ended questionnaires indicated that use of land for cash crops (coffee) is reduced women's access to and control over land. Sine coffee production in the community considered as the economic domain of men, the expansion of coffee in the study area would negatively affect

women's access to and control over land. At the same time, a more profitable land use opportunity for cash crops production particularly for coffee has resulted in a reduction in the amount of land a household can use for planting food crops.

4.6 Effect of Patterns of Cash Cropping on Gender Division of Roles in Hoe and

Plough Culture

With regard to the question, does cash cropping and land use allocation for cash crops changed the gender division of roles in agricultural production? The majority of plough and hoe culture farmers responded in affirmative way. A significant (52 (88.1%)) number of respondents from plough culture indicated that cash cropping and land use for cash crop changed the gender division of role in agricultural production while (7)11.9% responded that gender division of roles is not changed due to cash cropping and land use for cash crops. Similarly, the majority ((49)84.5%) of respondents from hoe culture indicated that cash cropping and land use for cash crop changed the gender division of roles and (9)15.5% responded that gender division of roles is not changed as a result of cash cropping and land use for cash crop. In the traditional Gedeo community, almost all tasks in coffee production were carried out by men. In the community women were culturally considered as playing supplementary role in providing husbands' with meals. However, the production and expansion cash crops both coffee and fruits and vegetables caused men and women farmers' to take active role in the sector. The use of men labor alone found insufficient to boost coffee production. Thus, men farmers' sought women's labor in the sector. As result, share of responsibilities have been observed in coffee production particularly in harvesting, storing and marketing activities (Table 4.9). At the same time, women take the largest share in the production and marketing of fruits and vegetables unlike their role under the traditional settings (Table 4.10).

Table 4.11 Elements of change in gender division of roles due to patterns of cash cropping

Changes in gender division of roles		Plough culture (N=52)				Hoe culture (N=49)			
		Freque.	%	Valid %	Cumulative %	Freque.	%	Valid%	Cumulative %
Woman's role in the production of food crops	Increased	11	18.6	21.2	21.2	16	27.6	32.7	32.7
	Decreased	23	39.0	44.2	65.4	21	36.2	42.9	75.5
	Remained the same	18	30.5	34.6	100.0	12	20.7	24.5	100.0
Woman's role in the production of cash crops	Increased	32	54.2	61.5	61.5	29	50.0	59.2	59.2
	Decreased	8	13.6	15.4	76.9	7	12.1	14.3	73.5
	Remained the same	12	20.3	23.1	100.0	13	22.4	26.5	100.0
Woman's role in the over all agricultural production	Increased	39	66.1	75.0	75.0	24	41.4	49.0	49.0
	Decreased	4	6.8	7.7	82.7	7	12.1	14.3	63.3
	Remained the same	9	15.3	17.3	100.0	18	31.0	36.7	100.0
Man's role in food crops production	Increased	11	18.6	21.2	21.2	10	17.2	20.4	20.4
	Decreased	28	47.5	53.8	75.0	29	50.0	59.2	79.6
	Remained the same	13	22.0	25.0	100.0	10	17.2	20.4	100.0
Man's role in cash crops production	Increased	31	52.5	59.6	59.6	36	62.1	73.5	73.5
	Decreased	6	10.2	11.5	71.2	3	5.2	6.1	79.6
	Remained the same	15	25.4	28.8	100.0	10	17.2	20.4	100.0
Man's role in the over all agricultural production	Increased	34	57.6	65.4	65.4	32	55.2	65.3	65.3
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	18	30.5	34.6	100.0	17	29.3	34.7	100.0
Use of land in-favor of cash crops like coffee	Increased	39	66.1	75.0	75.0	35	60.3	71.4	71.4
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	13	22.0	25.0	100.0	14	24.1	28.6	100.0
Allocation of land for food crops	Increased	-	-	-	-	-	-	-	-
	Decreased	41	69.5	78.8	78.8	35	60.3	71.4	71.4
	Remained the same	11	18.6	21.2	100.0	14	24.1	28.6	100.0
Woman's access to land	Increased	40	67.8	76.9	76.9	37	63.8	75.5	75.5
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	12	20.3	23.1	100.0	12	20.7	24.5	100.0

Source Own Survey, March 2010

As to the above table, almost equal number of respondents from hoe and plough culture indicated that women's role in the production of food crops has decreased. Similarly, men's role in food crops has decreased in both hoe and plough farming system. However, women's and men's role in the production of cash crops has increased in both hoe and plough culture. As revealed in the FGDs, stakeholders' supports in providing agricultural inputs and extension services have been increased in the last twenty years. This support increased the productivity of the cash economy sector and helped farmers of the study area to obtained cash from the sector. This in-turn encouraged women and men farmers in the study area to participate highly in the production of cash crops.

In both hoe and plough culture use of land for cash crops has increased. However, land allotted for food crops has diminished. As to the FGDs, in-depth case interview and key informant interview, the expansion of cash crops, both coffee and fruits and vegetables in the study area forced men and women to leave the food sector in favor of cash crops. Thus, the increased role of men (in the cultivation and marketing of coffee) and women (in cultivation and marketing of fruits and vegetables) in the cash economy sector created a negative influence on the food sector. Due to a higher rate of return from coffee production farmers of the study area began to clear enset and some other food crops cultivation in favor of coffee production. This clearance of enset production, which is the staple food among the Gedeo community, coupled with high rate of population growth created problem on food productivity in the study area. The argument presented by Koehler (1999) also tends to support the condition in the Gedeo community. Asymmetric supports in favor of large-scale commercialized coffee production have put household food production and subsistence farming, and the livelihoods of those involved, at risk (Koehler, 1999). This revealed in the in-depth case interview in the way that:-

Case-5 the expansion of cash crops production affected food productivity in the study area negatively.

Amarech Gelgele is 48 years old. I asked here about how cash crop expansion affected food production? She responded in away that:-

"For instance enset production among the Gedeo community is used to be largely produced for local market and for the central market. However, in the last twenty years enset is cultivated and produced only for household consumption. Even it is not enough for household consumption. This is mainly due to the fact that we are largely engaged in the production of cash crops, coffee and fruits and vegetables."

The above idea was also reflected among women farmers from hoe culture during the interview. Thus, the expansion of cash crops in the area attracted farmers to engage more in coffee which negatively affected food productivity in the study area.

The over all roles of women and men in agricultural production have increased in both hoe and plough farming system. The traditional low involvement of women in agricultural production has now increased due to changes in the socio-cultural (change in resource control and inheritance arrangement), economic (the integration of the community in national and international market through coffee production) and political (policy reform, land certification) life of the community. Men in the traditional Gedeo community play vital role in agricultural production. However, their involvement was highly limited by the provisions of agricultural inputs, material supports and other supports necessary for agricultural development. Now due to the expansion of extension services, modern agricultural inputs and other technical supports from the concerned bodies targeting cash crops increased men involvement in agricultural production. These all provision helped men and women farmers to take active part in agricultural production (as revealed in-depth case interview, key informant interview and FGDs). Thus, despite the low involvement of men and women in the food sector, the over all roles of men and women in agricultural production have increased.

4.7 Resources Control, Marriage Patterns and Inheritance Arrangement and

Gender Division of Roles in Agricultural Production

There has been observed changes in resources control, marriage patterns and inheritance system in the study area. The FGDs, in-depth case interviews, key informant interviews and responses gathered through survey questionnaire revealed that in the traditional Gedeo community agricultural resources were under the control of men, polygamy

marriage system were prevailed and only men had the right to inherit parental properties irrespective of farming system. However, in the contemporary Gedeo community institutional arrangements in resources control, marriage patterns and inheritance system have changed.

In the contemporary Gedeo community, agricultural resources are under the control of men and women, monogamy type of marriage prevails and men and women can inherit parental properties in both hoe and plough culture. These changes in institutional arrangements in resources control, marriage patterns and inheritance system, however, are not due to technological changes, shift from hoe to plough culture. As shown in the descriptive analysis part, there are similar patterns in resources control, marriage and inheritance systems in both hoe and plough culture. Thus, shift from hoe to plough culture is not induced changes in institutional arrangements. Rather, the explanation to this is found in other factors.

Evidences from the FGDs, in-depth case interview and key informant interview disclosed that resources control, marriage patterns and inheritance system changed in response to changes in socio-cultural, economic and political life settings of the community. Elements of change that are observed in the socio-cultural components of the community include ownership of agricultural resources (land, livestock and income from cash crop) and inheritance system. The change in the economic aspects of the community life includes the high integration of the Gedeo community in the national and international market through coffee production enabled the society to use both men and women labor to boost coffee production. Further more, this integration strengthen the household economy and enabled women farmers to have access to and control over the cash obtained from the production and marketing of cash crops. Policy reforms like the formal land certification as political factors enabled women farmers to have equaled right on land issues. Therefore, it is in response to these changes that resource control, marriage patterns and inheritance arrangement changed in the Gedeo community.

4.7.1 Ownership and control of resources and gender division of roles in agricultural production

I. Land

Land is an asset offering opportunities for social and economic empowerment and thereby a springboard from which to escape from poverty.

Among the Gedeo community land is a fundamental resources up on which their livelihood depend. As an agricultural society their economic, social and political well-being very much connected with land. The customary land holding system among the Gedeo favors ownership of land by men. Women under such system have access to land through their husband, but have no control over it. Further, as to FGDs and in-depth case interview results indicated, Women were not entitled to inherit land. Consistent to Doss (1999), as revealed in the FGDs and in-depth case interview, access to and control over land among the Gedeo is changed as a result of policy revisions, such as the formal registration of land, or economic changes, such as increased agricultural productivity or population pressures on land and these circumstances may in-turn affect the gendered aspects of access to and control over land. Currently, legally land among the Gedeo community is the property of husband and wife. The response obtained from both hoe and plough culture also indicates that land is registered under both husband's and wife's name. Thus, this finding contradicts Pala (1983) conclusion that in theory many places registered land either women's or men's names, in practice most of the land registered in the name of men among the Jolvo of Kenya.

Therefore, the law entitled both husband and wife equal power to make decision on land issues. However, as to FGDs and in-depth case interview, decision making on land issues among hoe and plough culture is dominantly the responsibility of husband, though wife also take part. The following data (Table 4.12) reveals that, decision making on land issues husband take a prime figure with little involvement of wife.

Table 4.12 Decision making processes in agricultural production

Decision making on land issues and crop production	Plough Culture (N=59)		Hoe Culture (N=58)	
	Responsible person		Responsible person	
	Husband	Both dominantly husband	Husband	Both dominantly husband
Decision on how much land to plant?	20(33.9)	39(66.1)	16(27.1)	42(72.4)
Decision on to share crop the land?	18(30.5)	41(69.5)	18(31.0)	40(69.0)
Decision on to rent the land?	18(30.5)	41(69.5)	16(27.6)	42(72.4)
Decision on what crops to plant?	21(35.6)	38(64.4)	25(43.1)	33(56.9)
Decision on whether to use fertilizers and other agricultural technology?	6(10.2)	53(89.8)	25(43.1)	33(56.9)
Decision on whether and when to hire labor?	-	59(100.0)	15(25.9)	43(74.1)

*Source Own Survey, Feb. 2010 * Figures in parenthesis are percentages*

From the above table, one can infer that in both systems of farming decision making on land issues and crop production is dominantly the responsibility of husband with little involvement of wife. However, unlike hoe culture, in which husband's mere power prevails, all respondents from plough culture indicated that the power to make decision on whether and when to hire labor is the responsibility of both with the domination of husband.

One can conclude from the above data that though the customary land holding system which only permits women to have access to land through their husband's and denies women's tenure over land, the formal land registration ensured women the right to have access to and tenure over land among the Gedeo community. Decision making on land issues among hoe and plough culture is dominantly carried out by men with little involvement of women. However, in the community men's unilateral decision making processes are still prevalent. The result of this study found in contradiction to Nahusenay's (2004), Getahun's (2004) and Yilma's (2002) conclusion that access to and control over land restricted to men among the people of Wollo, Gamo high lands and Konso in that order. However, access to and control over land among the Gedeo community is not only restricted to men, but women also have equal access to and control over land issues.

II. Livestock

Livestock are important assets to women and can help them accumulate wealth. This can allow women to bring wealth to the family, which in turn increases their status within the household. ILRI's report (Tangka et al 2000) states that in Ethiopia women are more involved in livestock production than in arable farming. Like wise, among the Gedeo community women play a significant role in the operation and management of livestock. With regard to access to and control over livestock resources, the Gedeo community for a long period of time had been excluding women from ownership of livestock. The evidence obtained from FGDs and in-depth case interview results indicated that traditionally women among the Gedeo had no right over livestock resources. Despite this, women play a vital role in the operation and management of live stock production. However, in response to socio-economic changes, ownership of livestock resources among the Gedeo community have been changed (Table 4.13).

Table 4.13 Ownership of livestock resources

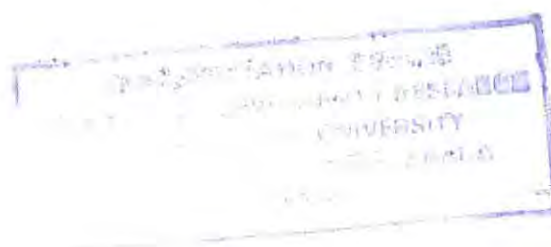
Livestock resources	Plough Culture (N=59)					Hoe Culture (N=59)				
	Responsible person					Responsible person				
	Husband	Wife	Both	Children	Others	Husband	Wife	Both	Children	Others
Oxen	11(18.6)	3(5.1)	45(76.3)	-	-	7(24.1)	3(10.3)	18(62.1)	1(3.4)	3(8.3)
Cows	8(15.1)	11(20.8)	34(64.2)	-	-	6(16.7)	5(13.9)	22(61.1)	-	-
Sheep	19(90.5)	-	-	2(9.5)	-	-	-	18(94.7)	1(5.3)	-
Goats	-	-	5(100.0)	-	-	-	-	4(100.0)	-	-
Donkeys	-	-	2(100.0)	-	-	-	-	3(100.0)	-	-
Horses	-	-	3(100.0)	-	-	-	-	2(100.0)	-	-
Muels	-	-	-	-	-	1(100.0)	-	-	-	-
Poultry	-	-	52(89.7)	6(10.3)	-	-	1(2.4)	28(66.7)	13(31.0)	-

Source Own Survey, Feb. 2010

* Figures in parenthesis are percentages

*Others (children and relatives)

From the above table, one can infer that in both system of farming women like that of men have equal right to own livestock resources. What observed in both system of



farming is that women alone do own oxen and cows. However, one respondents from hoe culture indicated that mule is owned by husband.

The FGDs and in-depth case interview revealed that traditionally women were not allowed to inherit and own livestock resources. Unlike women, men have the right to own and inherit livestock. However, this situation now has changed in response to changes in socio-cultural, economic and political components of the community. As a result, ownership of livestock is a right both women and men are entitled to. From the above data, the writer concludes that ownership of livestock among hoe and plough culture is not restricted to men, but women also have equal right to own livestock. Contrary to Yilma's (2002) and Yisehak's (2008) finding i.e. among the Konso only men own livestock resources, livestock among the Gedeo community is the property of husband and wif.

III. Decision making process on household resources

With regard to household decision-making numerous studies note that men and women in Africa frequently engage in different production activities and that in many cases they do not jointly manage (Guyer, 1980). Similarly, traditionally among the Gedeo community household decision making is the sole power of husband. Evidence from FGDs and in-depth case interview indicated that women had no place in the household decision making process. However, as the communities entertain change in their socio-cultural, economic and political arena, decision making on the household resources have also been changed. Now, women have their own saying on the household resources. The result of this study found contrary to Yilma's (2002) and Nahusenay's (2004) assertion that women have no decision making role on household resources among the Konso and Wollo in that order. Among the Gedeo community decision making on household resources is not only the responsibilities of men. Though husbands' domination is prevalent, wife can also participates in decision making processes (Table 4.14).

Table 4.14 Decision making power on household resources

Who make decision on how to use the following household resources	Plough Culture (N=59)					Hoe Culture (N=58)			
	Responsible person					Responsible person			
	Husband	Wife	Both, dominantly husband	Both, dominantly wife	Others	Husband	Wife	Both, dominantly husband	Both, dominantly wife
Household income	16(27.1)	-	43(72.9)	-	-	16(27.6)	-	42(72.4)	-
Land	16(27.1)	-	43(72.9)	-	-	18(31.0)	-	40(69.0)	-
Cash crops(coffee)	17(28.5)	-	42(71.2)	-	-	28(48.3)	-	30(51.7)	-
Cash crops (vegetables & Fruits produced)	-	18(30.5)	9(15.3)	32(54.2)	-	-	33(56.9)	8(13.8)	17(29.3)
Food crops	-	18(30.5)	41(69.5)	-	-	-	40(69.0)	12(20.7)	6(10.3)
Livestock	11(18.6)	10(16.9)	38(64.4)	-	-	9(17.0)	10(18.9)	34(64.2)	-
Milk & its products	-	16(27.1)	11(18.6)	32(54.2)	-	1(1.7)	28(52.8)	9(17.0)	15(28.3)
Poultry and its product	-	15(25.4)	7(11.9)	34(57.6)	3(5.1)	-	33(56.9)	9(15.5)	16(27.6)

Source Own Survey, Feb. 2010

* Figures in parenthesis are percentages

*Others (children and relatives)

From the above table, one can infer that decision on how to use the household income, a significant of respondents from hoe and plough culture indicated husband with little involvement of wife. In the same token, decision making on land issues among hoe and plough culture belongs to both with husband's higher influence. On the issue of cash crops, coffee, a majority of respondents from both system of farming indicated that it is husband's responsibility with low involvement of wife. However, still men domination on land issues, coffee and household income prevails in both system of farming (hoe and plough culture).

The majority of respondents from both hoe and plough culture responded that decision on how to use livestock resources is the responsibility of both with husband domination. Like that of men, women also have the power to make decision on certain livestock resources in both system of farming. With regard to cash crop, fruits and vegetables, husband alone has no power in hoe and plough culture. Unlike plough culture, wife in

hoe culture has sole power in deciding on how to use fruits and vegetables. In one way or another, women are responsible on the issue of how to use fruits and vegetables in both system of farming.

Unlike plough culture, a majority of respondents from hoe culture indicated that decision making on as how to use food crops is the responsibility of wife. In plough culture although wife alone make decision, a majority of respondents indicated that decision on as how to use food crops is the responsibility of both with the domination of husband. Concerning milk and its products and poultry and its products, wife takes a prime responsibility in both system of farming. However, unlike hoe culture, husband among plough culture share certain responsibility in decision making on how to use milk and its product and poultry and its product. This is due to the fact that some plough culture farmers have small-scale poultry and livestock production. As a result husband provides certain supports to his wife and this make him held responsible on poultry and milk issues. Despite this, poultry and milk production is predominantly the responsibility of wife among hoe and plough culture.

IV. New patterns of resources control

Access to land is not static, nor is tenure over land (Doss, 1999). As circumstances change, farmers' access and secure tenure to land may also change. There is observed change in resources control in the study area. These changes may be attributed to different factors. As revealed in FGDs, socio-cultural, economic and political changes are positively affected access to and control over resources among the Gedeo community. Traditionally, resources control among the Gedeo community was confined to men. This patriarchal system of resources control limited women's access to and control over agricultural resources, which in-turn undermined agricultural development in the study area.

However, in response to change in the socio-cultural, economic and political changes, access to and control over agricultural resources are changed. This is clearly depicted as follows: With regard to changes in resources control, a great number of sampled households from plough and hoe culture indicated that the Gedeo community has

experienced change in agricultural resource control. A considerable (83.1%) number of respondents from plough culture responded that there is a change in resources control while 16.9% responded that there is no change in resources control. corresponding to this, 87.9% and 12.1% of respondents from hoe culture indicated that there is change in resources control and there is no change in resources control respectively. As revealed in the FGDs , in-depth case interview and key informant interview, it is true that there are changes in agricultural resources control. Women's access to and control over agricultural resources found better than their status under the traditional settings. However, still men's access to and control over agricultural resources like land, livestock, household income and products of cash crops are dominant. This new patterns of resources control has changed the gender division of roles in agricultural production in the study area (Annex 5)

4.7.2 Patterns of marriage system and gender division of roles

Among the Gedeo community marriage arrangement is dominantly traditional. Marriage system seems to follow different stages depending up on the values and norms of the different social groups in the Gedeo communities. However, generally all social groups of Gedeo community have something to share. They arrange marriage through family affairs. The parents of young man (boy) send elders to the parents of the girl to be part of the family through marriage, with-out consulting the girl. However, this pattern of marriage system is now exhibiting change due to the expansion of formal and informal education, religious education, and change in the socio-economic, cultural and political life of the Gedeo community. Now-a-day, marriage arrangement among the Gedeo is dominantly done through the will of parties, (boys and girls).

The FGDs results indicated that traditionally the Gedeo communities were known in their polygamy of marriage. This is mainly due to the fact that in the traditional Gedeo community land is abundant. As a result, large land holding size forced men to marry more than one wife. Because owner of large land holding needs more wife to protect his property and leaves each of his wife on each of his land plots as a protector. Thus, the prevalence of polygamy in the traditional Gedeo community arranged not for need of women's labor as argued by Boserup (1970) and Goody (1976) under the context of

Gedeo. Rather, the prevalence of polygamy in the traditional Gedeo community was highly related to the system of land holding arrangement as argued by Bryson (1981). However, currently culture of monogamy is prevailing in the community. These facts are revealed in the following Table 4.15.

Table 4.15 Marriage patterns and gender division of roles in hoe and plough culture

Marriage patterns		Plough culture (N=59)				Hoe culture (N=58)				
		Frequ e.	%	Valid %	Cumulativ e %	Frequ e.	%	Valid %	Cumulativ e %	
How many wives do you have?	One	57	96.6	96.6	96.6	52	89.7	89.7	89.7	
	Two	1	1.7	1.7	98.3	6	10.3	10.3	100.0	
	>= Three	1	1.7	1.7	100.0	-	-	-	-	
Why you have married more than one wife?	Need for more land	1	1.7	1.7	1.7	-	-	-	-	
	Desire for more children	-	-	-	-	6	10.3	10.3	10.3	
	Others	1	1.7	1.7	1.7	-	-	-	-	
What are the forms of marriage payment in your culture	Bride wealth	59	100.0	100.0	100.0	58	100.0	100.0	100.0	
	Dowry	-	-	-	-	-	-	-	-	
Changes in marriage patterns	Culture of monogamy	Increased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	-	-	-	-	-	-	-	-
	Culture of polygamy	Increased	-	-	-	-	-	-	-	-
		Decreased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Remained the same	-	-	-	-	-	-	-	-
	Payment made for marriage arrangement	Increased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	-	-	-	-	-	-	-	-

Source Own Survey, March 2010

As to the above table, a significant number of respondents from both hoe and plough culture indicated that they have married only 1 wife. The result of this study found in contrary to Boserup's (1970), Murdock's (1967), and Heath's (1958) conclusion that

there is an association between marriage patterns and farming system. However, marriage system among the Gedeo community has nothing to do with farming system. In both system of farming (hoe and plough) monogamy of marriage prevails. Rather, the finding of this study is similar with that of Melese (1995) and Sintayehu (2000) who indicated that marriage system is not related with farming systems.

Among sampled rural plough culture farmers only two respondents have married more than one wife while the rest are married only one wife. The justification for having more than one wife, as given by two plough culture respondents, was the need for more land and other factors held predominant, accounting 1.7% and 1.7% of respondents respectively. While from hoe culture only six respondents have married more than one wife and the rest married only one wife. The reason given for having more than one wife, as provided by six respondents from hoe culture, was need for more children are the only answer accounting 10.3% of respondents.

With regard to the form of marriage payment, all respondents from hoe and plough culture indicated bride wealth are the only form of marriage payment, i.e. the boy family provides payment for the girl's family. This result falsifies Boserup's (1970) and Goody's (1976) assertion that bride wealth is a marriage payment in hoe culture while dowry is in plough culture. Nevertheless, marriage payment among Gedeo hoe and plough culture expressed through bride wealth, i.e. the bride groom who must pay bride wealth to the girl's family. The finding of this study is similar with Sintayehu's (2000) assertion that in both hoe and plough culture bride wealth is the only marriage payment among the Sidama community. Thus, irrespective of farming system bride wealth is the prevalent form of marriage payment in the Gedeo community. Payments made for marriage arrangement has been increased in the last twenty years. Accordingly, all respondents from hoe and plough culture indicated that payments made for marriage arrangement has been increased. The FGDs has disclosed that traditionally the boy family was expected to pay 12 birr in cash and honey and ox/sheep in kind as a bride wealth to the girl's family. In addition to these, a man will cover all costs necessary for dressing the girl but not an obligation. However, in the contemporary Gedeo society the

boy's family is expected to pay 1000-1600 birr in cash as a bride wealth and should cover all the necessary costs in dressing the girl. This is not the effect of urban culture.

All respondents from hoe and plough culture have perceived changes in marriage patterns. All respondents from hoe and plough culture indicated culture of monogamy has increased. Similarly, all respondents from hoe and plough culture responded that culture of polygamy has decreased. This indicates that traditionally culture of polygamy was prevalent among the Gedeo community. However, culture of monogamy prevails in the contemporary Gedeo community. Thus, in both system of farming (hoe and plough) monogamy is the dominant form of marriage.

Therefore, the gender division of roles in agricultural production in both hoe and plough culture has nothing to do with marriage system. This new patterns of marriage didn't affect the gender division of roles in agricultural production in the study area. This is clearly depicted as follows: A significant (72.9%) number of respondents from plough culture indicated that marriage patterns didn't affect the gender division of roles while 27.6% responded that marriage patterns did affect the gender division of roles in agricultural production. Similarly, the majority (69.0%) of respondents from hoe culture responded that marriage patterns didn't affect the gender division of roles while 31.0% indicated that marriage patterns did affect the gender division of roles. The FGDs results also indicated that changes have observed in the marriage patterns among the Gedeo community. However, the new patterns of marriage have not changed the gender division of roles in agricultural production in the study area.

4.7.3 Patterns of inheritance system and gender division of roles

According to the FGDs results, in the traditional Gedeo community women had no right to inherit parental property. This indicates that the community promotes patrilineal system of inheritance. Women among the Gedeo were not entitled to inherit land, livestock and other agricultural resources. However, in response to socio-cultural, economic and political changes with-in the communities, some changes in inheritance system have been observed (Table 4.16).

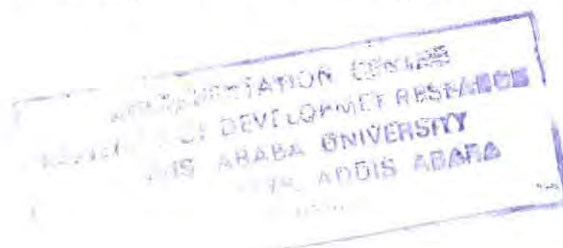
Table 4.16 Inheritance arrangements in hoe and plough culture

			Plough culture (N=59)				Hoe culture (N=58)			
			Freque.	%	Valid %	Cumulative %	Frqqe.,	%	Valid %	Cumulative %
Elements of change in inheritance system	Women's rights to inherit land	Increased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	-	-	-	-	-	-	-	-
	Women's rights to inherit livestock	Increased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	-	-	-	-	-	-	-	-
	Women's rights to inherit other agricultural resources	Increased	59	100.0	100.0	100.0	58	100.0	100.0	100.0
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	-	-	-	-	-	-	-	-
	Man's rights to inherit land	Increased	-	-	-	-	-	-	-	-
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	59	100.0	100.0	100.0	58	100.0	100.0	100.0
	Man's rights to inherit livestock	Increased	-	-	-	-	-	-	-	-
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	59	100.0	100.0	100.0	58	100.0	100.0	100.0
	Man's rights to inherit other agricultural resources	Increased	-	-	-	-	-	-	-	-
		Decreased	-	-	-	-	-	-	-	-
		Remained the same	59	100.0	100.0	100.0	58	100.0	100.0	100.0

Source Own Survey, March 2010

As to the above table, all respondents from hoe and plough culture responded that inheritance system has been changed. Accordingly, Women's right to inherit land, livestock and other agricultural resources have increased among both hoe and plough culture. However, men's right to inherit land, livestock and other agricultural resources among hoe and plough culture have remained the same. This means that the right of men to inherit agricultural resources is persisted, i.e. whether in the traditional or contemporary Gedeo community, the right of men to inherit agricultural resources remained the same.

On the issue of whether inheritance system affect the gender division of roles in agriculture, a majority (76.3%) of respondents from plough culture responded that



inheritance system did affect the gender division of roles while 23.7% indicated that it didn't affect the gender division of roles in agricultural production. Similarly, 74.1% of respondents from hoe culture indicated that inheritance system did affect the gender division of roles while 25.9% responded that it didn't affect the gender division of roles in agricultural production. The FGDs and in-depth case interview also reveal that women's right to inherit land, livestock and other agricultural resources encourage and enabled them to take active role in agricultural production and begin to develop sense of belongingness as a partner in the development processes.

This finding contradicts Goody's (1976) association of farming system and rule of inheritance. According to Goody, in intensive plough culture society's children of both sexes can inherit parental property where as in hoe culture societies only male children can inherit parental property. However, irrespective of farming system, hoe and plough culture, both male and female children can inherit parental property like land, livestock, and house among the Gedeo community. This finding also contradicts Sintayehu's (2000), Getahun's (2004), Wessen's (2008) and Yilma's (2002) conclusion that only male children can inherit agricultural resources among the Sidama, Gamo high lands, Mejengier and Konso in that order. Inheritance system among the contemporary Gedeo community is not patrilineal. Any more, the result of this study supports Kiros's (1995) finding. Both male and female children can inherit parental property among the Gedeo community.

4.8 Changes and Continuity in Gender Division of Roles in Agricultural Production

In the traditional Gedeo community productive tasks and community affairs were left to men. Women were responsible in preparing enset and producing cabbage for both household consumption and marketing purpose and domestic tasks. Almost all tasks in agricultural production were done by men. This is true irrespective of farming system. Farming tasks like land clearing and preparation, hoeing, planting, weeding, harvesting, transporting the harvest, storing and to some extent marketing activities were considered as the domain of men. Women's role in agricultural production limited to meals preparation while their husbands' were at field work.

However, as gender relations in general, gender relations of production are also socially, culturally and historically constructed and re-constructed. Gender relation is dynamic and contingent upon economic, political, and socio-economic conditions, as well as technological changes. The gender division of labor appears to change in response to changing economic opportunities (Doss, 1999).

As the FGDs, in-depth case interviews and key informant interviews results indicated, in the study area gender division of roles in agricultural production changed in response to economic factors like the integration of the community in the national and global market through the production and marketing of coffee and the expansion of fruits and vegetable production. High demand for coffee production necessitated women's labor in the sector. Now-a-day in both hoe and plough culture women take share of responsibilities, though in the community men take the greatest tasks share particularly in crop and coffee production, in agricultural production (Table 4.7). Further, women's participation found increased in coffee production particularly in weeding, harvesting, transporting the harvest, storing and marketing activities unlike their role under the traditional settings (Table 4.9). The use of women's labor enabled the household to boost coffee production and to get better economic returns. Like wise, women take primary role in the production and marketing of fruits and vegetables in both hoe and plough culture. In the traditional Gedeo community, tasks like planting and weeding fruits and vegetables production considered as men's activity. However, women to-day shares these tasks in the sector (Table 4.10).

Policy reforms like land certification as a political factors contributed its share for the changes in gender division of roles in agricultural production. Traditionally, women had no say on land issues and the fruits of land among the Gedeo community belong to the men. Women's lack of tenure over land eroded their decision making power on land issues. As a result, the contribution of women farmers in agricultural production have found low. However, in the contemporary Gedeo community among both hoe and plough culture women's tenure over land has increased. As such, though the domination of men prevail, women now-a-day participate in decision making on land issues. Using their decision making power on land issues and their own labor women began to produce

surplus fruits and vegetable production for local and domestic markets. Thus, the formal land certification encouraged women farmers to take active role in agricultural production.

In the traditional Gedeo community, women had no inheritance right and control over agricultural resources like land, livestock and income obtained from cash crops. Consequently, control over agricultural resource limited to men members of the community. Like wise, only men members of the community had right to inherit parental property irrespective of farming system. These socio-cultural elements of the community were by large hindered women's role in agricultural production. Culturally farming tasks like land clearing and preparation, hoeing, planting, weeding, harvesting and storing were considered as men's domain. Traditionally the communities believe that tasks like looking after children, domestic chores and preparing meals were the domain of women. Since gender division of roles are more of socio-culturally constructed, changes in the socio-cultural components of the community would enable women farmers to contribute their best in agricultural production.

However, the socio-cultural elements of the community are now becoming less rigid. As a result, to-day women among the Gedeo community have rights to own and inherit agricultural resources. Women's right to have access to and control over agricultural resource has improved than their status under the traditional settings. This enabled women farmers to contribute their own for agricultural development. Women are also begun to participate in farming tasks that are traditionally considered as men activities. Therefore, as a result of new socio- cultural, economic and political opportunities, gender division of roles in the study area is becoming less rigid. However, the result of this study negates Sintayehu's and Wessen's conclusion that although there is changes in the socio-cultural, economic and political components, no change has observed in the gender division of roles in agricultural production among the Sidama and Mejenjier communities in that order. Accordingly, as revealed in FGDs, in-depth case interview, key informant interview and responses gathered through closed-ended questionnaires, in response to socio-cultural, economic and political changes the gender division of roles in agricultural production has changed among the Gedeo community. The old domination of

men in the sector seems to relinquish and new ways of division of roles between men and women has emerged in the agricultural sector.

In the contemporary Gedeo community, women are largely participating in agricultural production. Now-a-day women and men take share of responsibility in the agricultural sector and in the domestic tasks and use of families' labor (husband, wife and children) are dominant. Some writers' like Boserup (1970), Goody (1976), and Yilma (2002) have argued that changes in gender division of roles are attributable to the shift from hoe to plough culture. However, Contrary to this assertion, this study found out that although the Gedeo community exhibited change in the gender division of roles in agriculture; the shift from hoe to plough cultivation system had no contribution for the change. As observed in the gender division of roles in crop, cash crops and livestock production, there is no difference in the gender division of roles between hoe and plough culture. This justifies that the gender division of roles changed not due to the change in agricultural technology, shift from hoe to plough, but changed in response to socio-cultural, economic and political settings of the community. As a result, in the contemporary Gedeo community, women participates in land clearing and preparation, planting, weeding, harvesting, transporting the harvest, storing and marketing activities in both hoe and plough culture.

Apart from the above changes, farmers perception indicated that women's and men's role in the production of food and cash crop production has increased in both hoe and plough cultivation system as compared to that under traditional settings. Similarly, women's farm work load has increased in hoe and plough culture. In both system of farming, women's and men's role in farm management has scaled-up. Men seem to share certain responsibility in the domestic tasks in both farming system. Unlike men's role in livestock operation and management, women's task in the livestock sector has increased in both, hoe and plough, cultivation system. In both system of farming, women's and men's access to land and other productive agricultural resources have increased in the last twenty years. Women's role in agricultural production increased as compared their contribution under traditional settings (Annex 6).

Despite the above observed changes, certain gender division of roles in hoe and plough culture has continued. The traditional division of role in agricultural production has still observed in both hoe and plough culture. For instance, farming tasks like land clearing and preparation totally in hoe culture and to some extent in plough culture, ploughing in plough culture, planting and weeding with the exception of fruits and vegetables, have still continued as men activities in both hoe and plough culture. In the livestock sector, tasks like herding, supplying fodder and bee keeping has still carried-out with the domination of husband in both hoe and plough culture. Certain women's roles in farming activities and domestic spheres have persisted. For instance, women's task like preparing enset and producing cabbage for both household consumption and marketing purpose has still persisted in both hoe and plough culture among the Gedeo farming community. Women's traditional task in fruits and vegetable production like harvesting, storing and marketing activities has still persisted. Traditional tasks in the household chores like caring children, preparing meals, collecting fire woods, fetch water have still carried out by women. Women's task in livestock production under the traditional settings likes barn cleaning, milking and milk processing and sale of milk products has still continued.

Chapter Five

Summary and Recommendation

5.1 Summary

Agriculture and rural development that is equitable, effective and sustainable can not be pursued without an explicit recognition of the tremendous contribution of rural women to food and agricultural production and their crucial role in determining and guaranteeing food security and well-being for the entire household.

The Gedeo community is dominantly agricultural society with hoe techniques of production. However, farmers of the study area have adopted plough culture with the view to increase agricultural production. Thus, studying changes and continuity in gender division of roles in hoe and plough culture and analyzing the impact of change from hoe to plough culture on gender division of roles in agricultural production would enable the concerned bodies to devise appropriate policy to impact positively the need of hoe and plough culture farmers in the study area.

The primary objective of this study is to find-out changes and continuity in gender division of roles in hoe to plough culture among the Gedeo farming community.

Accordingly, two research sites, one plough area (Tumata-Chirecha) and the other hoe area (Sugalle) were selected. The finding of this study reveals that there are changes in gender division of roles in hoe and plough culture in the study area. In the study area women's roles in agricultural production have increased unlike their role in the traditional settings. However, similar patterns of change have observed in gender division of roles in hoe and plough culture. These changes in gender division of roles in hoe and plough culture are attributable to changes in socio-cultural, economic and political life settings of the community. In this regard, the production and expansion of cash cropping as an economic variable; change in resources control and inheritance arrangement as socio-cultural element and policy reform like formal land certification as a political factor contributed a lot for the changes in gender division of roles in agricultural production in the study area. Consequently, in both hoe and plough culture husband and wife take share of responsibilities particularly in weeding, harvesting, storing and marketing activities,

although husband still in the community take the biggest share in crop and coffee production. Contrary to this, women take the largest share in fruits and vegetables and livestock production.

This study also uncovered the existence of similar patterns of changes in institutional arrangement in resource control, marriage patterns and inheritance system in both hoe and plough farming system. Thus, the shift from hoe to plough culture has nothing to do with the changes in resource control, marriage system and inheritance arrangement in the study area. Rather, the changes in socio-cultural, economic and political life components of the community were responsible for the changes in resource control; marriage system and inheritance arrangements in both hoe and plough culture.

The finding of this study discloses that the use of land for cash crop production, particularly for coffee, limited farmers' allocation of land for food crops in the study area. Cash crops in the study area have been expanded at the expense of land covered by enset and some roots and grain crops. As a result the food production sector is at stake.

Therefore, recognizing the contribution of both women and men farmers' enables to achieve equitable, effective and sustainable agricultural development. To this end, identifying the role of men and women in different farming system is paramount necessary. This is because in different farming system men and women assigned to different farming tasks. Differentiating farming tasks enables extension workers, agricultural experts and policy makers to provide the necessary support accordingly. In the study area, there is similar gender division of roles in agricultural production in both system of farming (hoe and plough culture). This enables the concerned bodies, extension agents, institutions working on agriculture and gender issues, policy makers etc, to provide technical, moral, financial, and material supports, in a coordinated and full fledged manner for the productivity of the agricultural sector.

5.2 Recommendations

The study has scrutinized changes and continuity in gender division of roles in hoe and plough culture in Wenago Woreda taking only two KAs as case study. It is therefore, the writers' opinion that future researchers should study the nature, type and dimension of gender division of roles in hoe and plough culture at other Woredas' and Zonal level to get a wider out-look of gender division of roles profiles and policy implications.

Different stakeholders working on gender and agriculture should appreciate and encourage the changes in gender division of roles and take a prime action to give it a firm ground for the productivity of the agricultural sector.

Different stakeholders should promote shared and joint decision making processes on agricultural resource control and production and marketing of cash crops.

Stakeholder, before providing the necessary agricultural inputs, extension services and other supports should identify and substantiate the need of both hoe and plough culture farmers and should treat their need separately.

Farmers of hoe and plough culture in the study area need to commensurate the production of cash crops with that of food crops production. To this end, stakeholders should encourage and give technical, financial, moral and material support for farmers engaged in the food sector and should balance the way of delivering the necessary support between cash crops and food crops.

Different stakeholders should give special emphasis for women farmers so as to promote food productivity at household and community level.

Stakeholders should create awareness, training and give the necessary support on as to how promote and coordinate coffee with that of fruits and vegetables production.

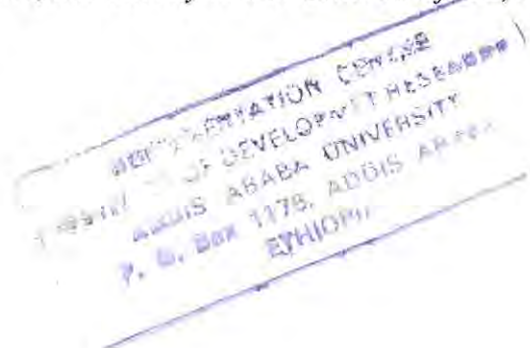
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Annex 1: Household survey questionnaire for household heads

Instruction: This is an MA thesis research a student of Addis Ababa University College of Development Studies Department of Environment and Development. As a partial requirement for the completion of the program he is undertaking a research entitled as The Effect of change from hoe to plough culture; Implications for gender division of roles in agricultural production: The Case of Gedeo Community, Southern Ethiopia. The purpose of this questionnaire is to capture first hand information on the effect of change from hoe to plough culture and institutional changes on the gender division of roles in agricultural production, socioeconomic characteristics and other related issues. All questions to be asked are purely for academic purpose. Your individual answers will be kept strictly confidential. The answers from all respondents will be anonymously combined in the research analysis and no reference will be made to you in particular. Therefore, please feel free to respond to the questions to the best of your knowledge so as to realize the objectives of this study which will be unsuccessful exercise with out your whole hearted cooperation.

Instruction: The enumerator should circle the answer of the respondent under each question.

Thank you in advance for your collaboration.

Name of the enumerator _____

Date/Month/Year _____ Time begin (local time) _____ Time
end (local time) _____

Name of the kebele _____

Type of farming system _____

PART ONE: General information about the household

1. Gender of the household head?
 1. Male
 2. Female
 3. Other (please specify _____)
2. Are you married?
 1. Yes
 2. No
3. Educational status of the household head.
 1. Illiterate
 2. Can read and write
 3. Primary level (1-6)
 4. Junior level (7-8)
 5. High school level (9-12)
 6. Tertiary level (college level)
 7. Others (please specify _____)
4. Age categories of the household head?
 1. Less than 18
 2. Between 18-34
 3. Between 35-50
 4. Between 50-60
 5. Above 60
5. What is the size of your family? _____
6. What is your household average annual income (in Birr)?
 1. Less than 1500 birr
 2. 1501 – 3000 birr
 3. 3001- 4500birr
 4. 4501-6000 birr
 5. 6001-7500 birr
 6. 7501-9000 birr
 7. 9001- 10500 birr
 8. More than 10500 birr
7. Does your household have an agricultural land?
 1. Yes
 2. No
8. If your answer to question number 7 is Yes, what is the size of the land (in Hecter)?
 1. Less than 1hec.
 2. 1-2hec.
 3. 2-3hec.
 4. 3-4hec.
 5. above 4hec.
9. If your answer to question number 7 is No, Why not?

10. Is your household farm land registered?
 1. Yes
 2. No
11. If your answer to question number 10 is yes, under whose name is registered?
 1. Only by husband
 2. Only by wife
 3. By both
 4. Others (Please specify) _____

12. In which type of activity your household engaged?

1. Agriculture 2. Fishery 3. Forestry
 4. Others (please specify) _____

13. What type of crops you grow on your farm land? _____

14. Do you have livestock? 1. Yes 2. No

PART TWO: Gender Division of Roles in Hoe and Plough culture and Changes in Crop and Livestock production.

1. Is your household engaged in agricultural production?

1. Yes 2. No

2. If your answer to question number 1 is yes, which members of the household are engaged in the following tasks in Crop production in the household?

S. N.	Activities	Responsible persons				
		Husband	Wife	Both mainly husband	Both mainly wife	Others (specify)
1	Hoeing					
2	Ploughing					
3	Planting					
4	Weeding					
5	Harvesting					
6	Transporting the harvest					
7	Storing					
8	Marketing					

3. Are there farm activities that your wife don't actually under-take?

- 1. Yes
- 2. No

4. If your answer to question number 3 is yes, what are these farm activities?

5. What factors do influence your wife's participation in these farm activities?

- 1. Because she is physically weak
- 2. Because these tasks are male's job
- 3. Because there is no need for her involvement
- 4. Because she is preoccupied with household chores and caring for children
- 5. Because she is culturally prohibited to do these farm activities
- 6. Because there is shortage of farm land and farm implements
- 7. Others (please specify) _____

6. If you use animal draw to cultivate your household land, when did you start plough culture? _____

7. If your answer to question number 1 is yes, who is responsible for the following tasks in livestock production in the household?

S. N.	Activities	Responsible individuals				
		Husband	Wife	Both dominantly husband	Both dominantly wife	Others (specify)
1	herding					
2	supplying fodder					
3	barn cleaning					
4	milking					
5	milk processing					
6	attending					

	sick animals					
7	poultry production					
8	bee keeping					

8. Have you experienced change in the gender division of roles in agricultural production?

1. Yes

2. No

9. If your answer to question number 8 is yes, what are the changes in the gender division of roles in agricultural production?

Change in gender division of roles in agriculture.	Increased	Decreased	Remained the same
Women farm work load			
Man's role in the production of cash crops			
Man's role in food crops production			
Woman's role in the household chores			
Woman's role in food crops production			
Woman's role in cash crop production			
Man's role in farm management			
Woman's role in farm management			

Man's role in the operation of livestock production			
Man's role in livestock management			
Woman's role in the operation of livestock production			
Woman's role in livestock management			
participation of man in the domestic spheres			
participation of man in productive activities			
Woman's access to land and other productive resources			
Man's access to land and other productive resources			
Others(please specify)			

PART THREE: Institutional arrangement in resources control, marriage and inheritance system and gender division of labor.

I. Ownership and Control of Resources and Gender division of roles

1. Who make decision on the household farm land on the following issues?

S. N.	Issues to decide	Husband	Wife	Both dominantly man	Both dominantly woman	Others (specify)
1	on how much land to plant					
2	what crops to plant					
3	to share crop the land					
4	to rent the land					
5	whether to use fertilizers and other technologies					
6	whether and when to hire labor					

2. Indicate as to who owned the following livestock?

S. N.	Type of livestock	Total number	Owned by				
			Husband	Wife	Both	Children male/female	Others (specify)
1	Oxen						
2	Cows						
3	Sheep						
4	Goat						
5	Donkeys						
6	Horses						
7	Mules						

8	Poultry						
9	Others (specify)						

3. Indicate as to who decides on the sale of the following products?

Household resources	Decided by				
	Husband	Wife	Both mainly husband	Both mainly wife	Others (specify)
Food crops					
Cash crops					
Livestock					
Vegetables and fruits					
Milk and Milk products					
Poultry and its products					

4. Who does make decision on how to use the following household resources?

S. N.	Resources	Decided by				
		Husband	Wife	Both dominantly husband	Both dominantly wife	Others (specify)
1	Cash crops					
2	Food crops					
3	Land					
4	Livestock					
5	Milk and its products					

6	Vegetables and fruits produced					
7	Household Income					

5. Have you observed change in resources control in your farming system?

1. Yes 2. No

6. If your answer to question number 5 is yes, what are the changes?

Change in resources control	Increased	Decreased	Remained the same
Woman's access to and control over land			
Man's access to and control over land			
Woman's access to and control over livestock and their products			
Man's access to and control over livestock and their products			
Woman's access to and control over the income obtained from cash crops			
Woman's access to and control over the income obtained from sale of food crops			
Man's access to and control over the income obtained			

from cash crops			
Man's access to and control over the income obtained from sale of food crops			
Woman's access to and control over other agricultural resources			
Man's access to and control over other agricultural resources			
Other (specify)			

7. Do u think change in resources control affected the gender division of roles in agricultural production?

1. Yes

2. No

II. Marriage system and Gender division of roles

1. How many wives do you have? _____

2. Why you have married more than one wife?

1. Because of desire for more children

2. Because of demand for more labor for agricultural production

3. Because for pride and wealth

4. Because need for more land

5. Others (Please specify) _____

3. What are the forms of marriage payment in your culture?

1. Bride wealth

2. Dowry

3. Others (Please specify) _____

4. Do you think that patterns of marriage affect the gender division of roles in agricultural production?

1. Yes 2. No

5. Is (are) your wife (wives) involved in decision making regarding household resources use, Farm operation and management, livestock management, land use and labor arrangements?

1. Yes 2. No

6. Have you observed change in marriage patterns?

1. Yes 2. No

7. If your answer to question number 6 is yes, what are the changes?

Change in marriage patterns	Increased	Decreased	Remained the same
Culture of Monogamy			
Culture of polygamy			
Payments made for marriage agreement			
Other (specify)			

III. Inheritance System and Gender division of roles in agricultural production.

1. Have you observed change in inheritance system?

1. Yes 2. No

2. If your answer to question number 1 is yes, what are the changes?

Change in inheritance system	Increased	Decreased	Remained the same
Woman's right to inherit land			
Woman's right to inherit livestock			
Women's right to inherit other agricultural resources			
Man's right to inherit land			
Man's right to inherit livestock			
Man's right to inherit other agricultural resources			
Other (specify)			

3. Do you think that inheritance system affect the gender division of roles in agricultural production?

1. Yes 2. No

PART FOUR. Patterns of cash cropping, land use and gender division of roles in agricultural production.

1. Does your household produce cash crop?
 1. Yes
 2. No
2. What are the type of cash crops your household produce, put according to their sequence from the dominant to the least dominant? _____
3. If your answer to question number 1 is yes, whose domain is producing cash Crop?
 1. Husband's
 2. Wife's
 3. Both
 4. Others (please specify) _____
4. If you are Coffee producer, who is responsible for the following activities in coffee/chat production?

S.N.	Activities	Responsible persons				
		Husband	Wife	Both mainly husband	Both mainly wife	Others (please specify)
1	Planting					
2	Weeding					
3	Pesticide					
4	Harvesting					
5	Storing					
6	Marketing					



5. If you produce Fruits and Vegetables, who is responsible for the following tasks?

S.N.	Activities	Responsible persons				
		Husband	Wife	Both mainly husband	Both mainly wife	Others (please specify)
1	Planting					
2	Weeding					
3	Pesticide					
4	Harvesting					
5	Storing					
6	Marketing					

6. Who decides on the use of land for coffee/fruits and vegetables production?

1. Husband 2. Wife 3. Both 4. Others (please specify)_____

7. Does use of land for coffee/fruits and vegetables production affected your allocation of land for food production like Enset or Grain production?

1. Yes 2. No

8. Who decides on the income derived from sale of coffee/fruits and vegetables production?

1. Husband 2. Wife 3. Both 4, Others (please specify)_____

9. Where does your household mainly spend the income obtained from sale of coffee/chat?

1. For household food consumption
2. For children's school payment
3. For family clothes
4. For agricultural inputs like fertilizers, insecticide.
5. Others (Please specify)_____

10. Does cash cropping and land allocation for cash crops changed the gender division of roles in agricultural production?

1. Yes 2. No

Annex 2: Issues for Focus Group Discussion and In-depth Case Interview

Time FGD Started _____

Time FGD Ended _____

Number of participants _____

1. Did you notice change in gender division of roles in agricultural production? How has the division of roles in agricultural production changed? Why has the gender division of roles changed?
2. Did you observe changes in the patterns of cash cropping and land use?
3. What marriage system exists in your culture? In which farming system culture of polygamy prevails? And Why? What are the payments made for marriage?
4. Did you observe changes in resource control, marriage and inheritance system?
If change occurred, what factors are contributed for the change? Did these change accompanied with change in gender division of roles in agricultural production?
5. Did you observe change in gender division of roles in agricultural production due to patterns of cash cropping?
6. Did change in agricultural technology, shift from Hoe to Plough, changed the patterns of institution in resources control, marriage and inheritance system?

Annex 3: Check Lists for Key Informant Interview

Time FGD Started _____

Time FGD Ended _____

1. Does your institution identified problems and opportunities that women farmers face in Hoe and Plough cultivation system?
2. Did your institution detect change in gender division of roles in agricultural production? How has the division of roles in agricultural production changed ? Why has the gender division of roles changed?
3. Does your institution observed change in the patterns of cash cropping and land use?
4. In which farming system culture of polygamy prevails? And Why?
5. Does your institution observe change in resources control, marriage and inheritance system? If change occurred, What factors are contributed for the change? Did these change accompanied with change in gender division of roles in agricultural production?
6. Does your institution observe change in gender division of roles in agricultural production due to patterns of cash cropping?
7. Does change in agricultural technology, shift from Hoe to Plough, changed the patterns of institution in resources control, marriage and inheritance system?
8. Do women face institutional handicaps such as tenure security, that will reduce their contribution in the agricultural sector? How does current agricultural sector policy addresses this issue?
9. Does your institution provide the necessary agricultural inputs and services to women food producers alike men coffee/chat producers?

Annex 4: Reasons why women farmers can not under take certain farming tasks

		Plough culture				Hoe culture			
		Frequ.	%	Valid %	Cumulative %	Frequ.	%	Valid %	Cumulative %
Are there agricultural activities your wife not under-take?	Yes	59	100.0	100.0	100.0	58	100.0	100.0	100.0
	No	-	-	-	-	-	-	-	-
What factors influence your wife's participation in those farm activities	Because she is physically weak	54	91.5	91.5	91.5	45	77.6	77.6	77.6
	Because these farm activities are male's tasks	3	5.1	5.1	96.6	12	20.7	20.7	98.3
	Because she is culturally prohibited to do these farm activities	-	-	-	-	1	1.7	1.7	100.0
	Others	2	3.4	3.4	100.0	-	-	-	-
Total		59	100.0	100.0		58	100.0	100.0	

Source Own Survey, March 2010

Annex 5: Resources control and gender division of roles in agricultural production

		Plough culture				Hoe culture			
		Frequ.	%	Valid %	Cumulative %	Frequ.	%	Valid %	Cumulative %
Do you think change in resources control affected the gender division of roles in agricultural production?	Yes	38	64.4	64.4	64.4	41	70.7	70.7	70.7
	No	21	35.6	35.6	100.0	17	29.3	29.3	100.0
	Total	59	100.0	100.0		58	100.0	100.0	
Have u observed change in resources control?	Yes	49	83.1	83.1	83.1	51	87.9	87.9	87.9
	No	10	16.9	16.9	100.0	7	12.1	12.1	100.0
	Total	59	100.0	100.0		58	100.0	100.0	
Woman's access to & control over land	Increased	38	64.4	77.6	77.6	37	63.8	72.5	72.5
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	11	18.6	22.4	100.0	14	24.1	27.5	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
Man's access to & control over land	Increased	11	18.6	22.4	22.4	12	20.7	23.5	23.5
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	38	64.4	77.6	100.0	39	67.2	76.5	100.0
	Total	49	83.0	100.0		51	87.9	100.0	
Woman's access to & control over livestock & their products	Increased	36	61.0	73.5	73.5	38	65.5	74.5	74.5
	Decreased	-	-	-	-	-	-	-	-
	Remained the same	13	22.0	26.5	100.0	13	22.4	25.5	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
	Increased	9	15.3	18.4	18.4	11	19.0	21.6	21.6

Man's access to & control over livestock & their products	Decreased	25	42.4	51.0	69.4	26	44.8	51.0	72.5
	Remained the same	15	25.4	30.6	100.0	14	24.1	27.5	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
	Increased	32	54.2	65.3	65.3	34	58.6	66.7	66.7
Woman's access to & control over the income obtained from cash crops	Decreased	5	8.5	10.2	75.5	4	6.9	7.8	74.5
	Remained the same	12	20.3	24.5	100.0	13	22.4	25.5	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
	Increased	32	54.2	65.3	65.3	28	48.3	54.9	54.9
Woman's access to & control over the income obtained from sale of food crop	Decreased	2	3.4	4.1	69.4	12	20.7	23.5	78.4
	Remained the same	15	25.4	30.6	100.0	11	19.0	21.6	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
	Increased	13	22.0	26.5	26.5	14	24.1	27.5	27.5
Man's access to & control over the income obtained from cash crops	Decreased	22	37.3	44.9	71.4	25	43.1	49.0	76.5
	Remained the same	14	23.7	28.6	100.0	12	20.7	23.5	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
Man's access to & control over the income obtained from sale of food crops	Increased	14	23.7	28.6	28.6	6	10.3	11.8	11.8
	Decreased	25	42.4	51.0	79.6	29	50.0	56.9	68.6
	Remained the same	10	16.9	20.4	100.0	16	27.6	31.4	100.0
	Total	49	83.1	100.0		51	87.9	100.0	
Woman's access to & control over other agricultural resources	Increased	33	55.9	67.3	67.3	35	60.3	68.6	68.6
	Decreased	4	6.8	8.2	75.5	5	8.6	9.8	78.4
	Remained the same	12	20.3	24.5	100.0	11	19.0	21.6	100.0
Man's access to & control over other agricultural resources	Total	49	83.1	100.0		51	87.9	100.0	
	Increased	35	59.3	71.4	71.4	33	56.9	64.7	64.7
	Decreased	3	5.1	6.1	77.6	6	10.3	11.8	76.5
	Remained the same	11	18.6	22.4	100.0	12	20.7	23.5	100.0
Total	49	83.1	100.0		51	87.9	100.0		

Source Own Survey, March 2010

Annex 6: Farmers' perception of changes in gender division of roles in agriculture

Change in gender division of roles	Plough Culture			Hoe Culture		
	Increased	Decreased	Remained the same	Increased	Decreased	Remained the same
Man's role in the production of cash crops	31(66.0)	0	16(34.0)	35(74.5)	12(25.5)	0
Man's role in the production of food crops	34(72.3)	4(8.5)	9(19.1)	11(23.4)	22(46.8)	14(29.8)
Woman's role in the production of cash crops	28(59.6)	7(14.9)	12(25.5)	26(55.3)	11(23.4)	10(21.3)
Woman's role in the production of food crops	25(53.2)	10(21.3)	12(25.5)	31(66.0)	5(10.6)	11(23.4)
Woman's farm work load	34(72)	2(4.3)	11(23.4)	22(46.8)	10(21.3)	15(31.9)
Woman's role in the household chores	25(53.2)	9(19.1)	13(27.7)	32(68.1)	3(6.4)	12(25.5)
Man's role in farm management	29(61.7)	6(12.8)	12(25.5)	27(57.4)	7(14.9)	13(27.7)
Woman's role in farm management	22(46.8)	9(19.1)	16(34.0)	25(53.2)	9(19.1)	13(27.7)
Man's role in the operation of livestock production	11(23.4)	29(61.7)	7(14.9)	10(26.3)	19(50.0)	9(23.7)
Man's role in livestock management	9(19.1)	30(63.8)	8(17.0)	9(22.5)	19(47.5)	12(30.0)
Woman's role in the operation of livestock production	28(59.6)	7(14.9)	12(25.5)	26(65.0)	6(15.0)	8(20.0)
Woman's role in livestock management	31(66.0)	6(12.8)	10(21.3)	28(70.0)	5(12.5)	7(17.5)
Participation of man in productive activities	38(80.9)	9(19.1)	0	36(76.6)	6(12.8)	5(10.6)
Participation of man in domestic spheres	23(48.9)	3(6.4)	21(44.7)	21(44.7)	11(23.4)	15(31.9)
Woman's access to land & other productive resources	29(61.7)	8(17.0)	10(21.3)	30(63.8)	6(12.8)	11(23.4)
Man's access to land & other productive resources	26(55.3)	6(12.8)	15(31.9)	26(55.3)	6(12.8)	15(31.9)

Source Own Survey, Feb. 2010

* Figures in parenthesis are percentages

Declaration

I, the undersigned, declare that the thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

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