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Mapping of Gender Roles and Relations along Onion Value Chain in Mene sibu Woreda, Oromia, Ethiopia

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Abstract
Ethiopia is a developing country situated on Africa's horn. Ethiopia ranks 173rd on United Nations human development index where the least developed country ranks 186. About 85% of all Ethiopians are employed in agriculture. Onion is one of the basic ingredients in the Ethiopian cuisine and thus an important crop in Mene sibu district as well. Previous studies on fruits and vegetables in Ethiopia points at post-harvest losses between 15% and 70%.To estimate the losses for onions in Ethiopia a supply and value chain analysis has been made. A literature review on supply chain management, value chain analysis, onion cultivation, and agricultural and logistical conditions in Mene sibu district of Ethiopia has been made in order to acquire a holistic view of the topic.Interviews from interpreters have been made to gather the necessary information from the chain actors. The chain actors have been identified and the losses at each level of the chain quantified and analyzed. The value chain for onions in Mene sibu district of Ethiopia has been researched to identify the different actors and their activities carried out when the onions move from producer to consumer. All expenses related to the activities in each step has been studied to find the value added and to calculate the profit for each actor. The complete chain consists of six actors; farmer, broker, transporter, wholesaler, retailer and consumer. The onions can reach the end-consumer without passing through all steps; broker, transporter and retailer are not always involved.
Keywords: Value Chain, Onion Mene Sibu, Actors and Supply Chain

1. INTRODUCTION

Onions are cultivated in many regions of the world, but mainly on the northern hemisphere. Onions are part of the Liliaceae family, of the genus *Allium* that contains several hundreds of species (Shigyo and Kik, 2008, p.121). The Latin name of the most common onions worldwide is *Allium Cepa,* which includes the red and yellow onion. *Allium Cepa* is the second most popular vegetable in the world following tomatoes (Desalenge and Aklilu, 2003, p.2).

Onions are treated as an annual crop even though it is biennial. The seed production requires two seasons since it takes one season for the onion to produce dry bulbs and another season for the production of the flower stalk, from which the seeds are harvested. Temperature is the one environmental factor that has the highest impact of onion growth. The optimal temperature condition for onions is mild climate around 21°C without any extreme heat or excessive rain. (Desalenge and Aklilu, 2003, p.5-7) It takes almost 2 months for the onion seeds to develop seedlings, roughly 2 months for the seedlings to develop visible bulbs and then an additional 2.5 months from the stage of visible bulbs to maturity of the onions.

Farmers can cultivate seeds to seedlings at small farmlands and then transplant the seedlings to bigger farmlands for the ripening of onions, which need more space than the seedlings, and in that way only use the larger fields for about 4-4.5 months. It takes up to 12 months to produce new seeds since it takes 5-6 months for flower stalk development from onion bulbs.

Onion fields should be rotated with other crops at least every fourth year to prevent soil borne diseases. (Desalenge and Aklilu, 2003, p.25) Improvements in soil nutrients (from compost, dung or inorganic fertilizers), water holding capability and texture can positively benefit the growth of onion bulbs. Examples of two inorganic fertilizers are DAP (Diammonium phosphate) and Urea. The amount of fertilizer needed is dependent on the soil type. (Desalenge and Aklilu, 2003, p.29)

Two common diseases of onions are purple spots and leaf mold. A fungus called *Alternaria porri* causes the purple blotches and the leaf mold is caused by the plant pathogen called *Peronospora destructor.* Thrips (*Thrips tabaci*) is a common pest to attack onions. Weeds can also be a problem since onions are poor competitors to weeds. Onions are especially vulnerable for weeds the first 6 weeks. (Desalenge and Aklilu, 2003, p.32). Onions are vulnerable to too much moisture and the risk for onions to be condemned by diseases increases in probability with humid weather conditions. There are various disease protections available to keep the onions from getting attacked by fungus or pests, for example Mancozeb, Karate, Selekron, Profit and Ridomil.

Small farmers, private growers and some larger state enterprises in many parts of Ethiopia cultivate onions. Areas with good soil and weather conditions for the cultivation of onions are the Awash valley, Lake region and areas close to the Sudan border (Desalenge and Aklilu, 2003, p.8-9). In Ethiopia, the planted area for onions was 22,036 hectare (ha) in 2011, which corresponded to about 0.5 % of all onion-cultivated areas in the world. The production of onions in Ethiopia in 2011 was estimated to 236,922 tons, which was about 0.27% of

all world onion production (FAOSTAT, 2013). The two cities Meki and Ziway are located in the fertile Lake region, this area is known as the onion belt of Ethiopia. Of the 46,600 inhabitants in Meki, 11,320 are farmers working with onion cultivation in an area of 5,650 ha. Of the 56,100 inhabitants in Ziway, 7,700 are farmers in an onion cultivation area of 11,500 ha (Citypopulation, 2013). The onion production is estimated to be 135,600 tons/year in Meki and 34,766 tons/year in Ziway (Meki & Ziway agricultural office, 2014). The onion crops have contributed to Ethiopian economy by exports of bulbs and cut flowers (Desalenge and

Aklilu, 2003, p.3). Onions can be produced throughout the year in Ethiopia due to the mild climate and the rainy season that provide water for irrigation. The red onions (Figure 2) are culturally most accepted in Ethiopia. The emphasis of this research lies on the red onion since those are the most cultivated species in the vicinity of the city of Addis Ababa, where the research was conducted. Two big families of the red onion species are Adama Red and Bombay Red. Adama Red has the longest storage ability of the two. (Desalenge and Aklilu, 2003, p.15)

The importance of agriculture in fostering socio-economic development of poor countries like Ethiopia can never be over-emphasized. Many developing countries focus on agriculture production as a poverty reduction strategy. In that regard, massive efforts and resources are being spent on improving agricultural production, productivity and promoting market access by smallholder producers (Nang'ole*et al.*, 2011). Value chain intervention usually focus on economic activities like crops, animals, crop or animal products that have potential to contribute significant income to the involved actors, hence improve food security and reduce poverty. It is anticipated that value chain development initiatives like this will benefit farmers in gaining better prices for their produces. Apart from the government, non-governmental organizations that support government initiatives have adopted the value-chain approach in addressing the problems of agricultural production and marketing.

In Ethiopia, value chain development approach has been adopted by many development organizations, nongovernmental organizations (NGOs), research institutions and government programmers including ILRI, FAO, SNV, and Plan International. Others include, USAID, Techno serve, and Oxfam GB, just to mention but a few (Match Maker Associates (MMA). 2012). Most of these value chains intervene along food crop commodities such as: organic ground nuts, fresh fruits and vegetables, tomatoes, onions, maize, cotton and sunflower. The focus of most of these value chains interventions has been on facilitating smallholder farmers' linkage to the market in order to increase profit and reduce poverty. Much less attention has been paid on the impact of these value chain interventions on changes in traditional gender roles and relations especially in production and accessing markets of the agricultural products.

Traditions affect the roles that men and women play in value chains as it is in many other production activities (KIT *et al.*, 2012). According to (Laven*et al.*, 2009) in order to understand how gender roles and relations change in value chains it is important to combine value chain analysis with the gender approach on a development activity. However, most value chain development interventions involve women in the chain development activities based on what they already do in producing the crops and other related products. This generic value chain intervention anticipates that, as women are involved in value chain development activities the benefits obtained will also trickle down to women involved. (Laven*et al.*, 2009) argue that the work that women and men take up within the chain may have implication on other economic activities such as subsistence farming for other crops, income generating activities or household tasks and on gender roles and relation within the household or at the community level. Generalizations of the impact of value chain intervention on gender roles and relations are always tricky as farming systems differ from place to place (KIT *et al.*, 2012). It is imperative to have empirical evidence from as many perspectives as possible whether value chain interventions change gender roles and relations and how such changes impact on women.

In agricultural value chains, women make up a large part of the work force (KIT *et al.*, 2012). However, women rights and benefits they derive from their participation in the value chain are frequently violated, and their contribution to the economy is largely invisible. In the context of value chain development, excluding women, results in underutilization of their labor force which may decrease agricultural productivity. While women involvement in agricultural production has increased; their participation in value chain development activities is concentrated in lower levels of the value chain especially in production (KIT *et al.*, 2006; Lastarria, 2006). According to the (World Bank and IFAD, 2008), there is a growing trend of more women being involved in agriculture as men seek alternative income generating activities in non-farm activities. Nevertheless, due to patriarchal nature of most rural societies, women generally do not have the same rights to productive resources as men. While women involvement in agricultural production contributes to increased production and export of high value crop (Lastarria, 2006), women do not equally benefit as men this is partly because of the gender relations that segregate women from participation or benefit from certain tasks in agricultural value chains.

Women in developing countries are widely recognized as the face of farming, especially among smallholders (United States Agency for International Development (USAID). 2009). The growing trend of women's Tanki in agriculture, commonly referred to as feminization of agriculture, has resulted in changes in gender roles, for example (Muza, 2009) cited by KIT *et al.* (2012) found that: in some areas women participation

in agricultural activities has increased due absence of men who have moved out into non-agricultural income generating activities in urban areas. In such instances women are responsible for taking care of the family farm, participate more in nonfarm activities to supplement income from farm activities, receive wages and start making marketing decisions over all household issues that were the male domain. Changes in gender relations is an important factor in determining the division of labor between what is considered productive and reproductive; this is argued to be the basis for the distribution and allocation of work, income, wealth and assets, and productive inputs (Lastarria, 2006). During the past three decades research on gender issues in agriculture and natural resource management has been given amplified consideration. New research focusing on agricultural credit, land tenure security, managing risk, access to assets, and the agricultural policy environment aim to discover how gender roles and relations affect these issues (United States Agency for International Development (USAID). 2009).

Research on gender and agriculture in Ethiopia also indicates that traditional gender roles in agriculture are changing, although causes for such changes are different and location specific thus difficult to generalize (Leavens and Anderson, 2011). Value chain intervention or upgrading strategies that do not consider gender relations are more likely to have negative impacts on women. Therefore, there is need to understand gender relations in value chain development activities and how changes in gender relations impact on men and women.

In Ethiopia, post-harvest losses for fruits and vegetables are estimated to range between 15% and 70% according to previous research in the project *African fruits*. Ethiopia at the same time is ranked as one of the poorest countries in the world by the UNDP-index (United Nations Developing Programme, 2013). About 85% of the employments in Ethiopia are in the agricultural sector, which accounts for 46% of the GDP. This makes it the most important occupation, but it also makes the country's economy vulnerable when harvests are destroyed due to drought or exceeding water amounts during the rainy periods (CIA, 2013). Onions are one of the most important ingredients in the Ethiopian kitchen and used especially during fasting times, when the people who fast only eat vegetarian food. Fasting occur every Wednesday and Friday and during longer periods, for example, around Christmas and Easter.

Onions are low value products but important for many farmers in Mene sibu district of Ethiopia. Therefore, there is a need to review the onion chain to quantify the losses and trace where and why they occur, which can be done by Supply chain management approach and value chain analysis. These approaches provide tools to analyze the flows in the chain and weak points may be detected so that the chain can get optimized. With these approaches the security of the supply might increase, providing more secure sales for the producers and also bring food safety for the consumers.

2. METHODOLOGY

2.1. Study Location and Justification for its Selection

This study was conducted in Mene sibu District in Oromia Region in Ethiopia. Eight villages that are actively involved in onion production and marketing were purposefully selected from four peasant associations. The peasant associations selected were Chala, Gebo, Wama and Dangi; the villages were Harawe, Benga, Como, Tenki and Wanki , Gunfi, Chala, and Wama. All the four peasant associations from which the eight villages were selected are traversed by the Dabus River Basin where irrigation farming, especially onion production, is an important economic activity. Onion farmers use both traditional and improved forms of irrigation systems. The dominant ethnic groups in Menesibu District are Oromo; other ethnic groups include the Amhara, Gurage, Tigire, Gumuz and Mao. Apart from traditionally being pastoralists, few Oromo are now actively Tankid in crop production and are among the important actors in the onion value chain. Oromo represents a good example of patriarchy societies in Ethiopia where men dominate decision making in the household and women have little chance or do not participate in decision making especially the ownership of income or participation in activities in which men are also involved. Therefore, it is a good case to reflect and learn how gender roles and relations are changing as they Tanki in onion value chain development activities.

2.2Research Design and Data Collection

The study adopted a cross-sectional research design and a mixed method approach was used in data collection. A sequential exploratory design was used to collect and analyze quantitative and qualitative data in consecutive phases. Data collection methods included focus group discussions and key informant interviews. Quantitative data were collected using household questionnaire. The sampling unit was individual women participating in the onion production activities and those not participating in the onion value chain. Focus group discussions (FGDs) involved women onion farmers participating and those not participating in onion production and marketing but were involved in other group activities like saving and credit groups in the villages. The focus group discussion composed of between six and eleven people. In these focus group discussions issues of gendered participation and sharing of benefits accrued from onion value chains were discussed.

Other issues discussed included: perception on changes in men's and women's roles and gender

relations in production and marketing of onion, ownership of assets, income and money accrued from onions sales, factors promoting or hindering women decision making especially in onion marketing, group networks and interactions. The FGD were also used to provide additional information needed to establish profitability levels in onion value chain through participatory budgeting exercises. Key informant interviews were used to explore the main economic activities and sources of livelihood in the area, NGOs and government activities in relation to onion value chain development activities in the area and gendered participation in productive and non-productive activities.

The household questionnaire was used to solicit information on the patterns, trends and relationships among different value chain actors. The household questionnaire was also used to seek information on what value chain actors were doing; their socioeconomic status, participation in value chain development activities and in establishing income and benefit obtained by women at different nodes in the onion value chain. Data were collected during October, 2012 to February, 2013 where 402 respondents completed the household questionnaires of whom 207 (51.2%) were participating in the onion value chain development activities and 195 (48.5%) were non-participants.

2.3. DATA ANALYSIS

Onion value chain mapping was done by identifying and charting existing value chain as discovered during key informant interviews and focus group discussions. Value chain mapping were done to identify women positions in the chain and the type of activities that they are mostly involved in. The value chain mappings also were aimed at identifying women's positions and roles in different markets where onions were sold. Profitability analysis was done by calculating the gross margins and simplified gross margins to establish the profit margin that different chain actors earned; this was done to provide a basis for understanding actors' benefits along the onion value chain. Gross margins and simplified gross margins were calculated by considering different production costs (minimum, median and maximum) and selling seasons (May-August, October-September and November-December) of the year when onion prices fluctuated markedly. This was done to provide evidence and lessons to guide farmers and practitioners on better upgrading strategies that has potential to increase income and profit along the onion value chain. Data obtained through focus group discussions and from program me and project documents were analyzed using ethnographic content analysis with constant comparison techniques.

3. RESULTS AND DISCUSSIONS

3.1. Onion Value Chain and Gender Relations

Onion cultivation in Mene sibu District is generally smallholder-based whereby 66.3% of respondents cultivate less than an acre and 31.7% cultivate between one and five acres, very few respondents (2%) had field plot sizes of more than five acres. Onions from Mene sibu District exchange many hands before reaching the final consumers. This study identified three major channels through which Mene sibu onions pass before reaching final consumers within and outside. The observed flow of the onions is shown in Figure 1 and gender division of labour among actors at each stage of the value chain are described is the following subsections. The first channel is starts with Input supply, producer, middleman, wholesaler, retailer and finally to the consumers. The second channel which carries the biggest volume starts with input supply, producer, local traders, large traders, wholesaler and retailer to the final consumer. The third channel which is the second in importance with regard to the volume traded and starts with input supply, producer, local trader, SME Onion traders, regional trader, wholesaler, retailer to the final consumer.

3.2. Input supply

Onion seeds, fertilizers, and pesticides are the major inputs that determine onion productivity in Mene sibu District. The inputs are supplied by specialized companies' and institutions such as Harawe traders located in mendi, and other research institutes such as Bako Institute located in Western Wellega, other inputs are obtained from small retail agro-vet shops mostly found at peasant associations or district headquarters. Extension officers also help in supplying the inputs or link the farmers to input suppliers, mostly through established farmer groups. Input supply in the villages surveyed is dominated by men who can easily travel long distances to purchase them from whole sellers located in urban areas. Less women's participation in the input supply business is partly due to restriction on

Figure 1.Onion value chain map in Mene sibu district,Oromia

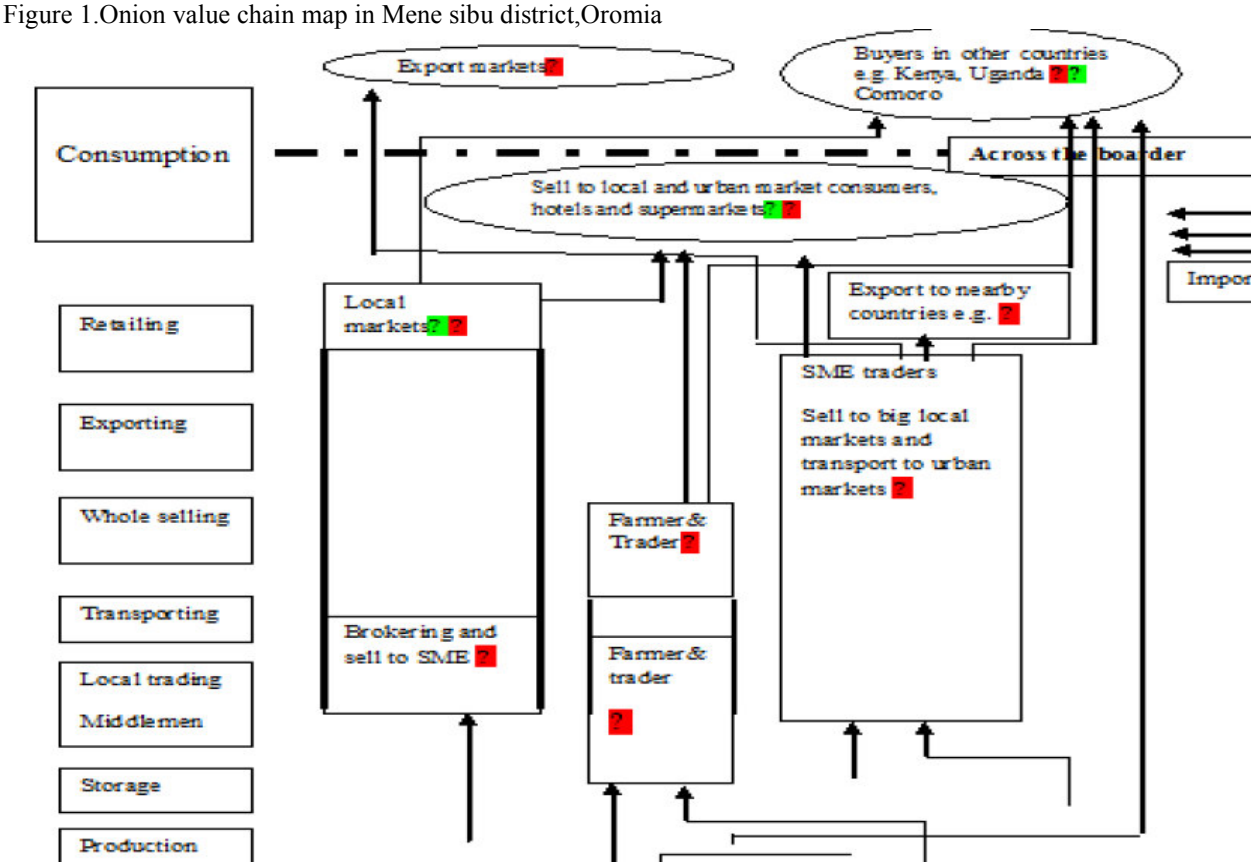

Figure 1.Onion value chain map in Mene sibu district,Oromia

♀= male, ♂=female

Movement placed by husbands which reduces their potential to Tanki in input supply activities.

Onion Production Level

Production of onions is a labor intensive enterprise; it involves a variety of procedures such as land clearing, land tillage, drawing block lines, sowing seeds in a nursery bed, transplanting, irrigating, spraying or weeding and harvesting, cutting, transporting and storage before sale. Most farmers do not have adequate family labor, thus they usually employ daily workers, who are paid in cash or exchange for food. Onion production trend in Mene sibu District is expanding rapidly, more and more onion growers from within and outside Mene sibu District are Tank in onion production. Men, women and children are involved in different onion production activities. Some activities are mostly done by men only while others are done by women; almost all activities are done by both men women. However, some activities are referred to as men's or women's activities because traditionally such duties have been allocated to men or women e.g. clearing a new field, drawing lines, blocks and water ways in the field are mostly done by men.

During this study it was reported that land clearing is mostly done by men (64.6%) and only 7.4% of this activity is done by women. Land tillage including drawing of blocks and water ways were done by men 71.4% versus 5% for only women. In the activity of drawing furrows the scores were 69.2% and 4.6% for men and women only respectively. There are some activities which were reported to be done mostly done by women e.g. Transplanting 36.8% for women versus 17.6% by men only and harvesting of onion where 32.9% were done by women and 18.7% by men. Children are also involved in onion production activities especially in transplanting (2.7%) and harvesting where (26.1%) of these activities were done by children only.

In Mene sibu district children are involved in different activities in their households and in others farms outside their households for pay, thus they are used as cheap laborers in production. Involvement of children in production activities denies them opportunity for schooling and may retard their mental development. Overall, traditional divide between men and women activities in onion production is becoming blurred; some activities that were usually done by men are also done by women and vice versa. For example 36% of the respondent reported that they were doing activities that were considered men's activities because of the lack of male support in their own activities. The majority of women who were married reported that when they start and manage their own farm plots they are compelled to perform all the tasks required in the onion production. On top of that

women are also expected to perform other household chores which increase their workload burden.

One of the reasons for a shift in gendered roles and participation to some activities was mentioned to result from less support from husbands or male partners and inability to afford high labor costs for the onion production activities. This was emphasized during focus group discussions where it was reported that: *"When we start our own farm plots, husbands do not support us in most of the activities… we don't have money to afford the costly labor so we do it ourselves"* (Women FGD Tanki village).

On the other hand, unmarried women or those who lived as singles reported that it is labor constraints and lack of capital for onion production that forces them to Tanki in some activities that were considered men activities. Women who live as singles reported to benefit more in the onion value chain as they had final decision and control in deciding over the use of money accrued from the onion. Despite the fact that they also face similar challenges as married women in terms of access to and ownership of productive resources including land when they acquire such resources with support they get from their farmer groups, through direct purchase or rent they participate in all of the activities in the onion value chain including marketing which id dominated by men. Furthermore, while men and women are involved in most of the activities in the onion production most of the activities were reported to be men's only work.

Overrepresentation of men in most of the onion production activities was mentioned to result from men's involvement in these activities both in their households and as laborers in other people's farms. Respondents in this study reported on the basis of who was mostly involved in a particular activity regardless of whether it was from family or hired labor. The only difference in activities that men did at home and away of home plots was that men were willing to do activities considered to be women's activities as long as they were paid for. Focus group discussions revealed that men also tended to Tanki in activities that were traditionally referred to as women's work when such works gained attractive payment. An FGD participant emphasized:
"Some activities like transplanting used to be women and children only activities, but as the labor costs have increased in recent years men have now come in...Whenever an activity gain monetary value they usually want to be part of it" (Women FGD Harawe village).

Onion Trading

Onions in Ethiopia and Mene sibu District in particular are traded in different markets, which include local village markets, supermarkets in urban areas, regional markets, national markets and export markets. Each market usually represents different customers who demand for different qualities of onions. Therefore, onions to be sold in these markets are arranged in different grades, those with good round shape and skin are sold at relatively higher prices to urban markets, supermarkets, and export markets prefer this type of onion while those with blemishes, twins, bad shape and small bulb sell at lower prices. These low grade onions are sold mostly in local and village markets. Traders in local markets, usually sell the onions to final consumers who usually buy small quantities. This study found that the majority of farmers (77.2%) usually sold their onion immediately after harvest while 22.2% of the respondents stored their onions for about three to four months before selling; it was also observed that few farmers (0.6%) sell their onions while they are still in the field just before harvesting. Traders who buy onion before they are harvested exploit farmers by offering them lower prices (Eaton *et al.*, 2008). Due to lack of alternative sources of income farmers are sometimes compelled to sell their products while they are still in the fields to meet other urgent family needs.

In Mene sibu District, as it is in many other rural markets in Ethiopia, onion trading by farmers is not well organized; most of the onions are sold on spot deals to whoever arrives in the village and offers a relatively better price. The marketing chain usually starts from a farmer or rural brokers who, for a fee, introduce wholesale traders to farmers who have onions for sale. The trader buys onions from the farmer, packs and stores them to wait for better prices or transport to urban markets like Asossa and Nekemte. From these urban market places the onions are sold to final consumers or repackaged for export markets. Generally, onions sales at farm level are done by both men and women, although men usually dominate the decision of when and how much to sell. This emanates from traditional setup norms whereby men's have an upper hand in decision making at household level. Wholesale marketing which is usually done in urban markets is also a male dominated activity while the final sales in retail shops and in open market places are dominated by women who combine onions sale with other pet businesses.

Focus group discussion with women established that lack of capital and experience in big business enterprises were among the barriers for women participation in onion whole sale marketing. Women also complained that the wholesale markets are often not even accessible for them because of broker cartels of whom the majority are men who control marketing transactions at big markets where whole-sale buyers do not have direct contact with farmers. These marketing arrangements make it difficult for farmers, especially women, to sell at whole-sale markets. However, women dominate onion retail marketing as it doesn't require big startup capital and is usually done in their living areas or neighboring villages. Such a marketing arrangement is preferred by women as it overcomes the problem of limited mobility imposed by their husbands or male partners. Some factors hindering more women participation in onion trading are presented in Table 1 where lack of capital

needed to transport onion to urban markets was the most popular limitation. Others were lack of marketing or bargain skills, poor support from husbands or male partners, and restrictions on movement placed by their husbands or male partners. Similar findings have also been reported in literature.

Table-1.Factors that limit women participation in onion trading

SN	Statement	Percent (N=187)
1	Lack of capital needed in onion business	41.4
2	Lack of marketing skills e.g. bargaining	15.1
3	Lack of support from husbands	14.2
4	Men dominate decision of onion marketing	9.0
5	Restrictions of movement placed by husbands	8.2
6	Too many family responsibilities	7.1
7	Inadequate or unreliable means of transport	3.0

Women's time constraints and restriction on movement placed by their husbands or partners and social norms regarding interactions between men and women was also reported to hinder effective women participation in marketing agricultural crops (Susan, 2004). Women in Mene sibu district as it is the in all other parts of rural Ethiopia, are involved in most of the household chores such as farming, cooking, fetching water and firewood and taking care of the household members, especially children and the elderly. Therefore, engaging in productive activities like participation in value chain development activities is an additional burden, and they may also don't have time to fully Tanki is such activities. Furthermore, women's business relationships are often limited to those that they know and trust and overlap with social relationships; this limits their Tanki in selling their products. Moreover, the breadth and depth of the commercial networks in which they Tanki can isolate them from making contacts that would facilitate their entry into value chains or expand into more wealth creating activities (Riisgaard*et al.*, 2010).

These gendered patterns of participation in value chains result into fewer options for women and place them at lower and less profitable nodes in the value chain. Women involvement in onion value chain development activities were anticipated to help in forming up both horizontal and vertical bonding networks with other upstream chain actors. However, this study found that, women were more likely to join horizontal networks in the form of farmer and women groups. Furthermore, there was little interaction amongst women involved in different group activities. The mapping of onion value chain (see Figure 1) revealed also that most women are concentrated in production and retailing nodes of the chain; therefore, they have less Tanki with other actors in the chains. They access most of other services through their farmers' groups.

Brokers

Brokers and middlemen are important actors in onion marketing in Mene sibu District; they are the intermediaries between farmers and traders. Their position and roles result from lack of working relationship and trust between farmers and traders and lack of reliable information on availability of onions and prices. Farmers and traders rely on brokers who know their requirements in terms of prices and onion supplies. Due to irregular contact between farmers and traders they usually lack business trust as they only contact each other during harvest periods. Onion value chain intervention has facilitated farmers' and trader's access to marketing information through farmer groups but the linkage has not developed so much and the free flow of information is still relatively low. The onion traders usually contact men who are traditionally believed to be the head of households, but also women who live as singles and own their onion plots are equally contacted by these traders and brokers.

Brokering activities in Men sibu District are dominated by men who travel frequently to urban areas and have frequent contacts with traders in different markets; most of them are also in contact with farmers in different villages, hence easy search for prices and other marketing information such as about means of transport. Although mobile phone usage in the area has increased in the recent years; its usage is still on individual basis based on who they know. The mobile phone usage in the area has not established market information system that farmers would use to access market information especially onion prices in different market places. Brokers usually offer small contractual loans to farmers who eventually sell their onion to them at relatively lower prices and usually use non-standard units of measure such as bags which are overfilled. Although farmers complain that brokers reduce the benefits they receive from onion marketing; they also acknowledge the marketing linkages that are facilitated by brokers.

Storage

Onions are stored in structures which are constructed using locally available materials such as grass and bamboo sticks to prevent them from direct sunlight and to allow some ventilation. Traditionally men are mostly involved in construction and maintaining of the storage structures. This study also found that men were mostly responsible

for maintenance of the storage structures (53.7%). Although profitability analysis revealed that the onion prices increased with storage time, very few onion farmers were able to store their onions to wait for better prices as they don't have alternative sources of income to meet other needy household expenditures. Furthermore, construction of the storage structure is male dominated activities, hence its control and this deny women opportunity to store their onion and wait for better prices if they are not able to hire or pay or the storage fees.

Transportation of Onions

Due to very poor infrastructure in Mene sibu District, only a few farmers are able to transport their products for the wholesale in urban markets; it is too expensive and very time consuming. Farmers use oxen carts and small tractors (power tillers) to transport onions from their fields to the household or storage structures. Due to higher transporting costs most farmers opt to sell their onion to traders at farm gate price in the villages, few farmers who transport their onions to urban markets are mostly men. Women face challenges to transport their onion s to the market. They also face restriction on movement placed by husbands which further limit their participation in onions trading. This study found that 75.3% of all onion produced were sold at the farm gate prices, 20.4% were sold in the village markets after storage and only small quantity (4.3%) were sold in distant markets by farmers themselves.

Onion Consumption

Onions from Mene sibu Districts exchange many hands before they reach the final consumers in both rural and urban markets. Generally, it was anticipated that consumers in different markets would have influence on the quality of the onions produced and sold. However, periodic high demand for the onion is the only driving force for onion production in the district. Consumers in urban areas and institutions such as supermarkets are sensitive to quality and consistency of supply. Therefore, producers and traders aiming to sell onions at such markets need to ensure conformity to the quality required, if they are to remain competitive in that market segment. On the other hand, consumers in rural areas and most of the retail shops are sensitive to prices; they are also willing to buy low quality onions if they sell at lower prices. Most consumers in export markets require consistency in quality, quantity, traceability and safety standards, thus farmers and traders aiming at this markets need to adhere to these quality standards.

3.3. PROFITABILITY ANALYSIS

This study found that farmers selling their onions just after harvesting make very little profit and some losses (Simplified gross margin ranged from -3.5% to 75%) (See Table 3). The analysis also shows that the profits increased with storage time; when farmers are able to store for about 3 months or more (i.e. selling by November - December) the gross margins increases up to 81.47% at current agronomic practices. Within Mene sibu District the profit that farmers get per acre varies due to different costs and technology used to grow onions. For example farmers at Chala peasant associations had the lowest profit margins of all the peasant associations surveyed. They usually incurred losses if they sold just after harvesting, and with storage time their simplified gross margins only got up to less than 40%. This is due to the higher fuel costs involved in supplementary irrigation using water pumps. The infrastructure and proximity of a production area to town or other formal/commercial activities have impacts on labour costs; in more remote areas the labour costs are relatively low. Villages located closer to towns or highways have advantages as many traders easily reach the area and compete for the available onions which benefit the farmers by giving them better prices. The overall productions costs were lower in Como peasant associations which had relatively low labour costs and the production costs were highest in Chala peasant associations located near Haro town and which is also surrounded by Lower Haro sugarcane plantations. Dangi peasant associations had an average production cost of brr 1,287,250/= per acre with a gross profit of 3,512,750/= while Chala had average production costs of 2,421,950/= and gross profit of 1,218,050/=. Minimum, average and high costs of production were used in estimating profitability levels; average costs were used as the basis for discussion and comparison across different areas.

The study also found that traders and transporters earned different levels of profits from their Tanki in buying and selling of onions; they all had positive gross margins. This is partly because they don't encounter many costs as it is the case with farmers, and they also determine the selling prices. Further analysis showed that they had lower gross margins as to farmers.

This may probably result due to the fact that most traders are able to record and report most of the expenses that they incur in their business while most farmers tend to underestimate some of the production costs and forget some of the costs for the activities that they use family or own labour. Table 2 presents the gross margin calculations for different actors as the percentage of the total costs. In the focus group discussion women reported that they got lower prices for their onions; even if they cultivated their own plots because it was difficult for them to store onions as men usually control the storage structures and all the stored onions belong to the head of the household who is a man. *"The storage structure belongs to men even if we cultivate our own plots we have to sell immediately after harvesting"* (Women FDG Benga Village).

Table-2.Summary of gross margin analysis from various villages and actors (% of total cost)

	May-August costs			Oct-Sep costs			Nov-Dec Costs		
Place and time	Min	Avc	Max	Min	Avs	Max	Min	Av	Max
Farmers									
Tanki	76.22	72.65	56.19	78.29	75.03	60.00	83.89	81.47	70.32
Tanki							83.89	81.47	70.32
Wanki	69.41	64.24	58.96	44.94	35.64	26.14	77.06	73.18	69.22
Wanki							77.06	73.18	69.22
Chala	14.02	44.86	22.37	26.47	-3.50	14.02	52.73	33.46	26.70
Chala							52.73	33.46	26.70
Farmers who store/SME									
Benga trader							33.39	52.64	54.03
transporter							66.79	61.72	51.67
Whole sellers									
Awassa market							54.07	49.83	38.13
Nekemte market							26.00	17.59	11.70
Dembidolo market							7.14	14.71	20.00
Retailers									
Gimbi market							12.93	14.81	15.20
Bako market							23.72	24.31	18.75
Gambela market							7.43	1.20	3.50
Jimma market							40.00	40.91	29.17
Eluababora market							29.31	32.14	26.67

*Farmers selling immediately after harvesting
**Farmers selling after storage (about four months)

3.4. Institutional relationship and governance in the onion value chain

A development approach that uses value chain intervention usually aims at increasing farmers' access to production inputs such as fertilizers, pesticides and seeds; which is often a principal constraint to raising value chain productivity. Government and non-governmental organization promote and support farmers to join producer and marketing groups for easy access of production inputs, extension services and markets of their crops. In this study 57.5% of the surveyed households were members of different farmers' groups or organizations while 42.5% did not have membership to farmers' organizations or groups. The majority of farmers were registered in groups that were involved in helping them to access financial services and farming inputs, three-quarters of the respondents (75%) reported that they greatly benefited by being members of these farmer groups or organizations, 17.4% said they fairly benefited while very few (7.6%) said they saw little or no benefit. Women who have joined these farmer groups are also taking leadership roles. The structures of some of these groups have reserved special posts to be covered by women and, through their involvement in leadership positions in these groups, most of them have vied for other management posts that are also contested for by men. In order to improve women's position in chain management the common strategies have been to create places for women involvement in leadership. According to Coles and Mitchell (2011), placing women in leadership positions like in groups and committees can help to challenge power imbalances but the presence of women does not necessarily confirm their active participation. Furthermore, Coles and Mitchell (2011) found that the placement of women in strategic organizational positions helped to correct household and chain power imbalances in the value chain aimed to commercialize Onion in Ethiopia. Such intervention helped women to increase control of the value chain, hence improved outputs. A similar initiative was also found in this study; there was strategic arrangement to ensure women participated in leadership of the farmer groups.

4. CONCLUSIONS AND RECOMMENDATIONS

Onions is a high value crop; its demand in the urban markets within and outside Ethiopia is increasing. In the onion value chain, men and women are involved in all activities from production to the marketing of the onion. Some activities such as clearing the new field, land tillage and drawing blocks and water ways are mainly done by men while transplanting and harvesting are mainly done by women and children. Overall, traditional divide between men and women activities in onion production is becoming blurred; some activities that were usually done by men are also done by women especially when they manage their own farm plots. However, these changes in men's and women's roles have not been reflected in other household chores that women are involved in the household. Therefore, it is likely that increased women's participation in value chain development activities increases woman workload in the household as well. The gradual shift of men into women dominated

activities especially those that are paid for e.g. weeding and transplanting may have implication for women income and workload at household level. The upgrading strategies by government and non-governmental organizations should focus and emphasize on educating men on gender issues and encourage them to participate in some household chores to reduce women's workload and enable them to equally benefit from their Tanki in value chain development activities.

Increased women's participation in decision making over income accrued from onion production reflects increased awareness of women in their rights and changes in household decision making roles, although their participation in marketing of onion is still constrained by many factors such as lack of capital, lack of marketing skills and lack of support from men who dominate decision on selling the onions. The value chain intervention by government and non-governmental organizations should increase efforts to address unfavorable gender norms that reduce women participation and benefits such as restriction of movement and appropriation of women incomes. This study also found that women are more linked to actors involved in similar activities in the value chain e.g. production and have less vertical linkages with other actors like input supply and buyers. Therefore, there is need to empower them to improve their profit in the current positions example by advocating for more equitable access to and control of resources needed in onion production as well as controlling income accrued from onion production. Farmer organization in which women are the majority should be facilitated with capacity building skills to identify and address barriers for entry into higher and more profitable nodes in the onion value chain.

This study found that farmers are willing to use their organizations as an avenue to increase their production, and productivity through increased access to financial services such as loan and credits, input and social support. However, men still dominate supply of production inputs and are the barrier for women who want to participate in the input supply, which forces women to rely on farmers' organizations for accessing inputs. Therefore, government and non-governmental organizations should invest in farmers' organizations as a potential and promising way to facilitate equitable access by rural producers, including the poor to agricultural markets. In addition, and as is frequently the case, if decision-making in these farmer groups is male-dominated, women's priorities may be ignored. Hence, gender sensitive interventions and approaches should be used in forming and strengthening farmer groups. It is imperative for development practitioners in value chain development to understand how changes in gender roles and relations impact value chains and programmers outcomes at chain and household levels in order to facilitate transformation of such changes from chain to household level.

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