**HARAMAYA UNIVERSITY**

**ANALYSIS OF SHEEP FATENING VALUE CHAIN DEVELOPMENT IN HARAMAYA DISTRICT, HARARGHE ZONE, ETHIOPIA**

Senior Research Report

Submitted to Haramaya University College of Agriculture and Envirionmetal sciences, School of Agricultural Economics and Agribusiness and Value chain Management s In Partial Fulfillment of the Requirements for B.Sc. Degree in Agri-business and value chain management

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April, 2015

Haramaya, Ethiopia

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# AKNOWLEDGEMENT

First and for most I would like to extend my unshared thanks to the almighty God for providing me the opportunity and smoothening of all aspects regarding the program. Next, I have no enough words that express my deepest gratitude and profound thank to my advisor Sime S. (MSc) for his unreserved help, advice, directing, insight guidance, critical review of my proposal manuscript, invaluable support and suggestions. Last but not least, I lack words and spaces to express my heartfelt gratitude to “my family a part and parcel of my life, who burn themselves to lightening my future like a candle from the very beginning, gave me love, nanny support, advise and bring me up through all my ups and down ideally, financially, materially which are unforgettable memory forever.

Finally, special thanks for all my friends and library workers who support me ideally and morally and provide enough time since I used computer class respectively through all my success.

**LIST OF ABBREVATIONS AND ACRONOMY**

CSA……………. Central Statistical Authority

DA………………. Development Agent

Masl…………………measurement atsea level

FGD……………….. Focus Group discussion

GDP……………….Gross Domestic Product

HH……………….Household

IPMS………………….improvement of productivity and market success

KII…………………….. Key Informant Interviews:

MFIs………………. Micro Finance Institutions

NGO………………….nongovernmental organization

PAs………………. Peasant Associations

PRA……………………participatory rural appraisal

SPSS…………..statistical procedure for social science

# ABSTRACT

Traditionally, most smallholder farmers in Haramaya and elsewhere in Ethiopia engage in sheep and goat fattening to generate sufficient income to meet household requirements and other social obligations. A rapid assessment with improvement of productivity and market success project partners in Haramaya found that traditional sheep fattening is constrained by inadequate feed supply, low nutritive value of available feed resources, and lack of technical knowledge which resulted in prolonged fattening period and low economic return. Accidental death or loss of fattened animals for various reasons is another challenge for vulnerable smallholders, especially if sheep are purchased on high price and the absence of strong linkage of producer with other actors. During discussion with various stakeholders, several potential interventions were identified to initiate a more commercially oriented small ruminant enterprise addressing some of the constraints with new interventions. Following the value chain approach, linkages were created with the district veterinary services. Data were collected from all 30 target farmers out of 33 total households using a questionnaire and group discussion.

## 1. INTRODUCTION

## 1.1. Background and Justification

The small ruminant population of Ethiopia, including expert estimates from the pastoral areas, is about 66 million of which about 35 million is sheep (Degussa et al., 2011). They provide about 46% of the national meat consumption and 58% of the value of hide and skin production (Awgichew et al., 1991). Small ruminants have many advantages over large ruminants for most smallholder farmers, including among others: lower feed costs, quicker turnover, easy management and appropriate size at slaughter (Wilson, 1991; Abegaz, 2002; Donkin, 2005). They also suffer far less mortality during periods of drought than large ruminants (Galal, 1983; Wilson, 1991). In addition, subsistence farmers prefer small ruminants as the risk of large ruminants dying and leaving them with nothing is too great (Sölkner et al., 1998). In Ethiopia, sheep is the second most important species of livestock with diverse breeds and ecotypes and the population is distributed from cool alpine climate of the mountains to the arid pastoral areas of the lowlands. There are nine known breeds of sheep characterized through phenotypic and molecular methods in the country (Gizaw et al., 2007). About 99.6% of the total sheep populations of Ethiopia is made up of indigenous breeds (CSA, 2008) which are owned and managed by resource poor smallholder farmers and pastoralists under traditional and extensive production systems. Market oriented or commercial production is almost non-existent. Thus, the level of production and productivity of sheep fattining in the country is generally low. For instance, the average carcass weight per slaughtered animal for the years 2000 to 2007 was about 10kg (FAO, 2009). On the other hand, there is huge demand for live sheep and sheep meat in the Gulf countries. The demand and prices for sheep are also increasing locally due to increased urbanization and increased income. According to the Ethiopian Institute of Biodiversity Conservation (IBC, 2004), the demand for sheep is especially pressing given that the current population of the country is expected to rise to about 129 million by the year 2030. Nevertheless, the present production is unable to satisfy the increasing demand of the export abattoirs with the required export quality slaughter animals (Negasa and Jabar, 2008). Since production is not market oriented, supply is also inconsistent. Currently, it is reported that the export abattoirs are operating at 56% of their operational capacities. Several factors affect the performance of the existing sheep marketing system. First, there is a lack of well-functioning marketing systems that effectively link the many smallholder producers and their cooperatives with domestic and international markets. The available marketing systems also failed to encourage sheep producers to coordinate and collaborate with each other to produce market oriented products. Unless producers are organized and jointly act in activities like procurement of medicaments, supplementary feeds and marketing, the transaction costs of marketing for individual sheep producers are high.

According to Legese and Hordofa (2011), this is one of the reasons for market imperfections

and for the limited participation of smallholders in existing markets. Second, different livestock species currently produced by farmers are not able to satisfy the quality attributes

required by diverse markets. Third, the existing livestock marketing system is fragmented and disorganized and the supply chain linking smallholder producers with domestic consumers and export markets is long and extended. This depresses farm gate prices and denies producers from receiving better prices as a multitude of brokers and middlemen tap a large proportion of the price paid by the consumers and exporters without adding value to the product (Legese and Hordofa, 2011). Clearly, therefore, cost-effective marketing channels and coordinated supply chains that reduce the transaction costs among different actors along the supply chain are needed. Nevertheless, this needs an understanding of market performance, conduct and functions, and business linkages as well as constraints and opportunities along the value chain. The current document reports results of sheep value chain analysis conducted in the Horro district and nearby markets by the International Livestock Research Institute (ILRI), the International Center for Agricultural Research in the

Areas (ICARDA), the USAID financed Africa RISING (Quick feed) project and Bako Agricultural Research Center of the Oromia Agricultural Research Institute.

Agriculture, being the backbone of Ethiopia’s economy, accounts for 46% of the Gross Domestic Product (GDP) and livestock sub sector contributes 30% - 35% and more than 85% of farm cash income. The sub sector also accounts 19% to the export earnings (Azage and Alemu, 1998; Befekadu and Birhanu, 2000).Highlands of Ethiopia are characterized by crop-livestock mixed farming systems. They inhabit nearly 90% of the human population and 70% of the livestock population of the country (Mohamed-Saleem and Abate, 1995). The mixed farming systems developed as a consequence of the beneficial effects resulting from interrelationships and complementarities between crop and livestock production. Livestock production ensures the availability of food and income to them Farming community throughout the year. Besides, livestock are source of agricultural inputs such as draft power and organic fertilizer as a direct contribution for crop production, while the contribution of crop sector is through provision of feed in the form of crop residues and stubble grazing. Hence, the role of livestock is significant in this farming system (Getachew, 2002).

The small ruminant production is an important agricultural enterprise in Ethiopia. It is estimated that Ethiopia has 25.4 million sheep (Beyene Kebede, 1998). However, a census conducted during the 1994/95 Agricultural Sample Survey by the Central Statistics Authority (CSA) indicates that there are only 12 million sheep (CSA, 1996). Sheep production in the mixed production systems of the highland areas has a very important role in contributing to the food security as well as in generating direct cash income. Ethiopia’s vast sheep population, estimated at 24 million heads (CSA, 2004) is widely distributed across the different agro-ecological zones of the country (EARO, 2000; Kassahun, 2004). Sheep are owned by smallholder farmers as an integral part of the livestock sub-sector and contribute to both Household consumption and cash income generation (Shapiro, 1991; EARO, 2000; Ehui` et al., 2000). Though farmers supply animals of varying sex, age and weight, yearlings are the dominant class of Animals to be sold to cover immediate cash needs prior to their attaining mature body weight. In Most instances the farmers do not benefit much from the sale of these sheep. This is mainly because Conditioning of yearling sheep using supplementary feed is not often practiced. On top this, lack of Market information and low market price further lowers the benefit to the farmers. Farmers sell Sheep at the ‘farm gate’ and on market days at nearby markets. Indigenous sheep breeds have specific adaptations to survive and produce under adverse local environmental conditions (climatic Stress, poor quality feed, seasonal feed and water shortage, endemic disease and parasite challenge) That makes them suitable for use in the traditional, low-external-input production system (IBC, 2004) That dominates Ethiopian sheep production. Crop residues serve as supplementary feeds during the dry season. It is not uncommon to see a stack of crop residues on farm lands as the farmer is aware of the monetary and feed value of crop Residues.

To exploit this opportunity traders who buy and sell hay, crop residues and concentrate are Emerging even in small towns of agro Indeed nowadays the feed sector is providing year- Round business for a number of actors. Use of alternative feed resources and improved marketing Channels are the key to increasing per capita animal output. However, there is limited information on sheep fattening value chain development and how the markets are function.

## 1.2. Statement of the problems

Several factors affect the performance of the existing sheep marketing system. First, there is a lack of well-functioning marketing systems that effectively link the many smallholder producers and their cooperatives with domestic and international markets. The available marketing systems also failed to encourage sheep producers to coordinate and collaborate with each other to produce market oriented products. Unless producers are organized and jointly act in activities like procurement of medicaments, supplementary feeds and marketing, the transaction costs of marketing for individual sheep producers are high. According to Legese and Hordofa (2011), this is one of the reasons for market imperfections and for the limited participation of smallholders in existing markets.

Second, different livestock species currently produced by farmers are not able to satisfy the quality attributes required by diverse markets. Third, the existing livestock marketing system is fragmented and disorganized and the supply chain linking smallholder producers with domestic consumers and export markets is long and extended. This depresses farm gate prices and 2 denies producers from receiving better prices as a multitude of brokers and middlemen tap a large proportion of the price paid by the consumers and exporters without adding value to the product (Levees and Hordofa, 2011). Clearly, therefore, cost-effective marketing channels and coordinated supply chains that reduce the transaction costs among different actors along the supply chain are needed. Nevertheless, this needs an understanding of market performance, conduct and functions, and business linkages as well as constraints and opportunities along the value chain.

Market-oriented smallholder sheep fattening was identified as one of the priority commodities for IPMS in Haramaya on the basis of PRA and the participatory planning stakeholder workshop held in 2007. According to the farmers, the importance of small ruminants would increase with the fast diminishing farm sizes due to population pressure as small ruminant require relatively limited space and smaller feed than cattle. In particular, farmers in the higher altitude areas were highly interested in sheep fattening. As a result, it was found worthwhile trying to support this activity through some targeted interventions.

**This study attempted to answer the following research questions:**

1. What are the major factors that affect sheep fattening value chain in Haramaya district?

2. What are the major factors that affect sheep fattening marketing channels in the study area?

3. What does existing sheep fattening production and marketing systems look like in Haramaya?

4. What are the major constraints and opportunities for the sheep fattening value chain development in the study area?

5. What are the determinants of sheep fattening market supply in the study area?

**1.3. Objectives**

### 1.3.1 General objectives

The major objective of the research was to analysis s sheep fattening value chain development and marketing systems studies in Haramaya district areas

### 1.3.1 Specific Objectives

### 1. To describe the existing sheep production and marketing system in the study area.

### 2. To examine the major factors that affect sheep fattening marketing channels in the study area.

### 3. To analyze the major factor that affect sheep fattening value chain in the study area

### 4. To analyze the determinants of sheep fattening Market supply in the study district

5. To identify major constraints and opportunities for the sheep fattening value chains development in the study district

## 1.4. Scope and Limitation of the Study

The study was conducted in East Hararghe zone, Haramaya district at household level. The district have 35 kebeles but the study was limited to only in two Kebeles due to lack of financial, lack of time to collect data from all kebeles and. The result or data that has been obtained from the district’s kebeles with 33 sample respondents or households may not represent the whole households of the district as well as all districts in the zone. These will hinder to generalize about sheep fattening and value chain development in the district and to give research recommendations on the whole households of the total kebele of that district.

Given the objectives in section 1.3 the study were focus on undertaking sheep fattening production and marketing systems, examine the existing production/ consumption and marketing pattern, identify sheep fattening value chain development systems of the area and to prioritize the problems and opportunities of sheep fattening production and also describe the sheep fattening marketing systems and to identify constraints and opportunities for sheep fattening marketing in the area. Due to financial and time limitations the study is limited to only in Haramaya district sheep fattening value chain development.

## 1.5. Significance of the Study

This study helps to generate information with regard to fattening practice and marketing of sheep which identifies areas of interference. The major significance of this study is that it serves as a source of information for those who want to make research on the topic again to fill the existing gap. Critically examining and addressing specific research objectives will help the policy makers to design their polices by identifying the sheep fattening and value chain development and the problems facing in fattening and marketing of sheep production.

**2. Review of Literature**

## 2.1. Definition and Concept of sheep fattening value chain development in Ethiopia

Globally, the demand for sheep fattening in value chain development is estimated to grow due to the high population growth and increasing urbanization (Hedge et.al.2005). The highest growth in demand is expected from developing countries (Griffin, 2005). Over the past two decades, Ethiopia experienced relatively low growth rates in the production of sheep fattening compared with the average for SSA. It is found that the rate of growth in sheep fattening production of Ethiopia for the period 1993 to 2000 was about 2.1% per annum (FAO, 2003). During the same period, the annual growth rates in sheep fattening in sub-Saharan Africa and developing countries were 2.9% and 1.6% respectively (ILRI, 2000). Available data also indicate a generally declining rate of sheep fattening growth in Ethiopia, a situation which reflects the increasing scarcity of sheep fattening to satisfy the increased demand in most parts of the country during the past years. In sub-Saharan Africa the demand for sheep fattening production is expected to grow at an annual rate of 3.3% (Delgado et al., 2001). In line with this, world sheep fattening production is expected to grow by an annual rate of slightly over 1%, while the highest increment is expected from developing countries in which from 1997 to 2020, the annual sheep fattening production is projected to grow at a rate of 2.73%.

Peri-urban sheep fattening production is developed in areas where the population density is high and agricultural land is shrinking due to urbanization around big cities like Addis Ababa and other regional towns. In this system crossbred animals ranging from F1 (50%) up to animals with a higher blood level of exotic breeds (mainly Holstein Friesian) are kept in small to medium-sized farms. This peri-urban sheep production system includes commercial to smallholder sheep fattening farmers. Such farmers are reported to be found in the proximity of major cities (Addis Ababa) and other regional towns. This sector own most of the country’s improved sheep fattening (Tsehay, 2001; Mohamed et al., 2003; Sintayehu et al., 2008). The main source of feed is both home produced or purchased hay; and the primary objective is to get additional cash income from sheep fattening sale. This production system is now expanding in the highlands among mixed crop–livestock farmers, such as those found in Selale and Holetta, and serves as the major sheep supplier to the urban market (Berhanu et al., 2008).

The amount of production of surplus sheep fattening is determined by the potential to produce sheep’s in terms of herd size and composition, production season and access to the nearby market. Moreover, the amount of sheep fattening surplus is also detected by the demand of the household and their neighbors. Mostly, the farmers put sheep fattening for sale after the household demand is being satisfied (Mohamed et al., 2003). Farmers raise about 30% of the indigenous sheep population which serve as the major sheep production system for an estimated 10% of the country’s human population living in the lowland areas. Sheep fattening production in this system is characterized by low yield and seasonal availability (Zegeye, 2000)

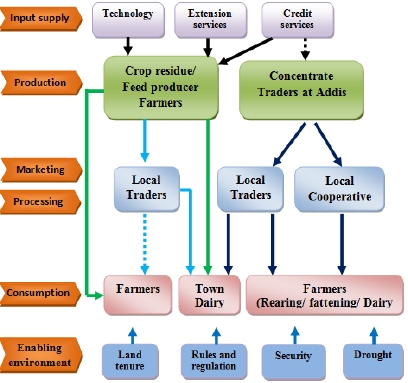
## 2.2 Analysis of sheep fattening value chain systems

In the African context, markets for agricultural products would normally refer to market places (open spaces where commodities are traded) According to FAO/ILRI (2001) sheep fattening markets typically differ in several key ways: a) by the number of intermediaries involved, and the role each plays. These aspects are often linked in that more processed and thus higher value products often involve more intermediaries, each of whom adds some delivery or transformation service to the product. Simple distance between source and sales areas, or the density and scale of the production system, even without product transformation, can however also increase the number of intermediaries, due to the need for assembling, bulking, transporting and distributing. Likewise, Gebremeskel D., and et,al (1998), in describing elements of structure and conduct, emphasize that among the major structural characteristics of a market are the degree of concentration, that is, the number of market participants and their size distribution; and the relative ease or difficulty for market participants to secure an entry into the market. Market conduct refers to the behavior of firms or the strategy they use with respect to, for example, pricing, buying, selling, etc., which may take the form of informal cooperation or collusion. Conceptually, however, a market can be visualized as a process in which ownership of goods is transferred from sellers to buyers who

may be final consumers or intermediaries. Therefore, markets involve sales, locations, sellers, buyers and transactions (Dereje et al 2008).

## 2.3 Formal vs. informal sheep fattening value chain development marketing

The term ‘informal’ is often used to describe marketing systems in which governments do not intervene substantially in marketing. Such marketing systems are also referred to as parallel markets. The term ‘formal’ is thus used to describe government (official) marketing systems (Zegeye 2003). The concept of alternative marketing systems for sheep fattening described here was based on similar sheep marketing studies undertaken in other parts of Ethiopia by Debrah and Anteneh (1991), and Mbogoh, et.al, (1994), which identified different marketing chains. Moreover, in this study, in addition to secondary sources, such chains were identified through the different types of buyers to whom the product was directly sold by producers. Hence it was through the survey of sheep’s selling patterns of producing households in the sample Districts that the alternative sales outlets of sheep were established. Sheep fattening marketing is channeled through both formal and informal outlets, with informal markets supplying no less than 95% of the total sheep for the small and large towns of the Region. The sole formal outlet in the Region is the government enterprise in Addis Ababa called sheep fattening Development Enterprise (DDE), which collects sheep from jimma and surrounding areas. The informal sheep fattening market involves direct delivery to producers to consumers through different marketing channels.Dependable system has not been developed to market sheep fattening in Ethiopia (Zegeye 2003). Sheep is distributed through the informal and formal marketing systems. In both rural and urban parts of the country, sheep is distributed from producers through the informal (traditional) means. This informal market involves direct delivery of sheep’s by producers to consumers in the immediate neighborhoods or to any interested individuals in nearby towns (Dereje et al



**Figure 2. Value chain actors**

## 

## 2.4. Empirical Review

Hordofa (2005) made an investigation on sheep fattening in Haramaya district. His objective was to determine factors that affect sheep fattening in Haramaya and a linear regression model was used to identify the influencing factors. According to his findings, income of households, price of the products and family size were found to be major factors that determine sheep fattening in the area. Sintayehu yigrem et.al (2008) made an investigation on constraints and opportunities for sheep fattening and marketing in Haramaya. His objective was to prioritize problems, challenges, and opportunities of sheep fattening and marketing. He used descriptive and inferential statistics methods of data analysis. According to his finding, availability and costs of feeds, shortage of farm land, discouraging market.

Sheep in particular are grazers and amenable to herding; hence a species of Choice in mixed cropping areas where cereal production dominates (Adane and Girma 2010).Ethiopia has an estimated sheep population of 26.12 million, out of which about 74% are females. Among the sheep flock two years and older (53% of the total sheep), 49.5% are kept for breeding, about 3% for mutton and less than 1% is kept for wool production (CSA 2008). Sheep are widely adapted to different climates and are found in all production systems. The average annual mutton production of the country is estimated at 78 thousand tones. Sheep Account for 15% of the domestic meat consumption, 50% of the domestic wool requirement, about 40% of the fresh skins, 82% of the value of semi-processed skins for export. In the crop– Livestock farming systems, sheep provide 19–23% to the food subsistence value derived from Livestock production (CSA 2008). In Haramaya, khat is the main source of livelihood for the farm households. In addition, small Ruminants are kept for cash generation, savings, as a security against risks related to fluctuating Khat production and prices, for their manure to maintain soil fertility, and for meat production (Bekele 2009). Involvement in small ruminants rearing or fattening by farm households has been increasing in the PLW due to high market demand and increasing prices. Despite the huge sheep Population, suitability of the agro-ecology of the PLW and increasing demand for mutton, both the reproductive and productive performance of smallholder sheep production in Haramaya, as elsewhere in the country is very low? In 2005, Haramaya Wore started paying attention to this under exploited potential and distributed 717 sheep on credit to 239 households (225 male and 145 female) for fattening purpose. Farmers who participated in this program reported that they had benefited from the intervention and expressed their support for similar intervention.

# 3. METHODOLOGY

## 3.1. Description of the Study Area

Haramaya district is one the district in East Hararghe zone, which is found in Oromia regional state of Ethiopia. It is far from Addis Ababa 506km east. It is named after the administrative center, Haramaya. It is boundered on the: South by Kurfa Chile district, West by Kersa district, North by Dire Dawa town, East by Kombolcha district and on South East by Harar region. The total population of this district is 271018 of whom 138282 are male and 132736 are female. The altitude of the district ranges from 1400m to 2340m above sea level. The annual rain fall and temperature of the district is 900 mill meter cube and 18 degree centigrade respectively (HADB, 2009).The town of the district is Haramaya town which has the population of 15317 of whom 7796 are male and 7521 are female (CSA, 2005). The land escape of Haramaya district includes mountains, high Forest and plain divided by valleys. A survey of the land in this district shows that 89.1% is arable or cultivable (86.1% was under annual crops), 2.7% pasture, 2.8% Forest, and the remaining 5.4% is considered swampy, degraded or otherwise unusable. Khat is an important cash crop and Peanut is another important cash crop for this district; over 4500 hectares are planted with this crop.

## 3.2. Sources of Data

Basically there were two types of data sources used: primary and secondary data. Primary data were collected from the respondents by interviewing them using the questionnaires which were prepared for the respondents, and primary sources include beneficiaries/participant and non-beneficiaries/ non-participant. The secondary data were collected from official document and records of related to the case under the study as well as unpublished sources, and observations were sources of data.

## 3.3. Method of Data Collection

Different types of data collection methods were used in the study. Primary data were collected through personal interviews with the farmers using structured questionnaires. These households were selected based on their interest, and ownership of sheep. Data sheets were prepared and data were collected by questionnaires during the study period, and secondary data was collected from Agricultural office of the study area and other relevant official document.

## 3.4. Sampling Techniques and Sample Size

The study was based on purposive sampling technique. From the studied area a total of 33 HH (Damota and Tenike), 30 households were selected and interviewed. The size determination and selection was made from the individual house hold living in the studied area which is relatively representatives for the whole house hold in the district. As the number of population of the study area were large, it was difficult to collect data from each owner of small business. So, the study adopts a simple random sampling technique which was combination of researcher judgment and probability. The respondents selected depending on researcher capacity to collect the data.

## 3.5. Methods of Data analysis and Interpretation

The relevant data to the study are collected; the subsequent task is data processing that involves; analyzing and interpretation. The collected data were edited and examined. There are two types of data analysis were used. Namely, descriptive and econometric analyses were used to analyze the data collected from the farmers, traders, and the consumers in the study area.

**3.5.1 Descriptive Analysis**

Descriptive statistics techniques that were used to describe the collected data include percentage. Since descriptive statistics help one to have clear picture of socio-economic and socio-demographic situations of the respondents, it was used wherever it is appropriate. Mean and percentage were analyzed and presented by table and pie chart.

**3.5.2 Econometric Analysis**

It was a method of data analysis which used different economic and statistical tools or models for testing hypothesis related the objective of the study. According to Hordofa D. 2011 the multy regression model is specified as:

Yi = f (age, family size, sex, educational level β distance from market, market price, etc.)

Yi = βo + β1X1+ β2X2+…………..+ βnXn +Ui

Where: Yi- is number of fatten sheep

βo- is Y intercept or constant term

β1, β2……… βn are coefficient of explanatory variable

X1, X2 ……...Xn are explanatory variable

Ui- is represent error term

**3.6 Definition of Variables and hypothesis**

**3.6.1 Dependent variable**

**Number of sheep fattened:** It is continuous variable which represents the number of sheep fattened by the households. It is measured in numbers. It is a dependent variable and other explanatory variables may have negative or positive relation to the variable (Anteneh Girma, 2009).

**3.6.2 Independent Variables**

**Education Level of Household:** It is dummy variable measured in terms of whether the household has formal education or not which take a value of one if the household have formal education and zero otherwise. Education broadens farmers’ intelligence and enables them to perform the fattening activities intelligently, accurately and efficiently. So, it is hypothesized expected to influence the number of sheep fattened sales.

**Age of Household:** It is continuous variable and measured in years. Age is a proxy measure of fattening experience of household. The older households may be tradition bounded and expected to take up new technologies, hence it negatively affect the sheep fattening.

**Gender of Household:** A dummy variable taking value of one if the household is male and zero otherwise. As a sheep fattening is males’ traditional practices male household expected to supply more fattened sheep to the market.

**Market price of fatten sheep**

It is a continuous variable represent the price of fatten sheep in the market; if a market price is good the sheep fattening activities can be increased; and expected to affect the dependent variable positively.

**Credit Access of Household:** A dummy variable taking value of one if the household take loan and zero otherwise. Access to credit would enhance the financial capacity of household to purchase input. Therefore, it is hypothesized that access to credit would have positive or negative influence on the level of sheep fattening and sales.

**Types of Sheep Breed:** A dummy variable taking value of one if household purchase improved sheep varieties for sheep fattening and zero otherwise. The improved sheep varieties enhance the income of the households. It would be positively affect sheep fattening.

**Housing System:** A dummy variable taking a value of one if the house is modernized and zero otherwise. The modernized house is facilitating the fattening system. So it would be expected positively related to the sheep fattening.

**Marketing information of Household:** A dummy variable taking a value of one if the household is access marketing information and zero otherwise. The household who is poorly

Access to market information may convey inaccurate and inadequate information on price, demand and supply, leading to inefficient market decision. Hence, it is hypothesized that market information is negatively related to market participation and marketable surplus**.**

**Non- farm income of Household:** It is dummy variable taking the value of one if there is other sources and zero otherwise. It represents the sources of an income for farmers out of a farm income describe by birr, if there is other sources of income my not produces more; and expected to affect negatively the dependent variable.

**Distance from the Market:** it is an independent variable represents the distances of the market place from the farm if the market is nearer more to the farm for sale; so expected to affect the dependent variable positively.

**Extension contact of the Household:** a dummy variable taking the value of one if the farmers get services from extension and zero otherwise. It represents the provision of extension services to the farmers; if there is contact, expected to affect the dependent variable positively.

# 4. Results and Discussion

This section presents the findings from descriptive analyses. The descriptive analysis made use of tools such as mean, percentage, standard deviation and frequency distribution. So, Out of the total interviewed sheep fattening producers (N=30) 60% of them male and the rest 40% were female household members. Out of these sample sheep fattening producers, majority of them were male headed households, while the rest were other family members mainly wives.

Table 1 Sex of household

|  |  |  |
| --- | --- | --- |
| Sex | Frequency | Percentage |
| Male | 18 | 60 |
| Female | 12 | 40 |
| Total | 30 | 100 |

**Figure1**. Sex of the Respondents

**4.1.1 Educational Back ground**

Educational status is one of the most important socio – demographic a characteristics which is very important for to be included in any research study. This is because one policy establishment as well as its proper implementation to solve certain problems identities by research depends mainly on educational status and under 57 ending capability of the concerned population. Therefore, in areas where there are majority of illiterate people, it is addressable to formulate polices which they are able to accept and implement without the need of technical know how on the other hand in the area where there are educated people who can understand things simply, the policy showed be designed in a manner that the concerned people are able to believe without questioning and implement to see some clanged affront from – fisting. In this study saucealready discussed above, sample respondents are included and their educational status and the estimated percentage of educational status for the whole pupations obtained as follow:

Table 2 Estimated educational status of population of Haramaya (Damota and Tenike kebele) obtained from sample households.

|  |  |  |  |
| --- | --- | --- | --- |
| Educational status | Number of household | Relative no of HH | % number of HH |
| Illiterate | 8 | 8/30 = 0.27 | 27% |
| Read and write | 6 | 6/30 = 0.2 | 20% |
| Elementary | 7 | 7/30 = 0.23 | 23% |
| Secondary school | 9 | 9/30 = 0.3 | 30% |

## 

## Figure 2. Household Characteristics and Socio-Economic Profile of Respondents

Based on the data obtained and presented in the above table, Majority of the population was illiterate and some of them are educated. The most important thing we have to consider hare is those people under category of educated and sub category of senior school and secondary school are a napped in sophisticated stage of value chain like processing.

Figure 2 Education level households

**4.1.2. Family age and household size of the study area**

The average age of the interviewed household head in this study was 35.67 years and ranged from 20 to 50 years. Out of the sampled population (30) of the interviewed households in this study, 26.67%, 40%, 33.33%, belonged to the age classes 20 –30, 30- 40 and 40- 50, years old respectively. Out of the sampled population (30) of the interviewed households, 60% and 40% were male and female, respectively. The major household heads participated in the current study were male. The overall mean for family size house hold was 5.73 persons per household (Table 1).

Table age, household size in two agro-ecologies of the study area (Mean ±SD)

|  |  |  |  |
| --- | --- | --- | --- |
| Parameters | Highland (n=14hh) | Midland  (n=16hh) | Over all  (n=30hh) |
| Age | 34.29±3.94 | 33.13±3.75 | 35.67±2.63 |
| House hold size |  |  |  |
| Male | 3.00±1.15 | 3.00±1.50 | 3.00±1.33 |
| Female | 3.31±1.39 | 2.17±1.19 | 2.73±1.40 |
| Total | 6.15±1.27 | 5.02±1.34 | 5.73±1.36 |

## 

## 4.2. Crop and sheep fattening Production System

The production system in the studied areas is a mixed crop livestock production system where farmers grow crops and keep livestock. However, the degree of interdependence of crops and livestock and the priority given by farmers varies in the two areas. In highland crop cultivation is a priority activity and entirely dependent on livestock. Farmers keep sheep mainly to satisfy drought power requirement. There is also a lot of social prestige associated with ownership (Aune et al., 2001). The dominant crops that are grown vary with agro-ecology and altitude. In the highlands, crops like maize, sorghum, and peanut, are given priority. In the midland, maize, sorghum, khat and peanut are cultivated. Moreover, livestock are kept for the purpose of herd reproduction, meat, milk production for home consumption and manure for crop production, store of wealth and dung for fuel. Sheep dominate in the study district compared to goats. This could be due to agro-ecology and type of feed available in the highlands favoring sheep over goat. Donkeys are kept by farmers for transportation purpose. Livestock production is not market oriented. Farmers do sell their animals whenever they need cash for food, seed and other purposes.

## 

## 4.3. Type of sheep used for Fattening

As the respondent said both sources of fattening sheep had great different on live-weight change and gross profit. Sources of fattening sheep in Haramaya were male and female sheep due to old age or being unproductive (51%) and immediate purchase for fattening purpose (49%) (Shitahun, 2009) .

## 

## 4.4. Major Feed Resources for fattening sheep

According to the response of households, among the major feeds given for the fattening sheep, is natural pasture (62.2%), agro- industrial by product (15.6%) and crop residues (22.2%). The distribution of the feed resources is similar across the two agro-ecologies. That means natural pasture cover about 72.7% in the high land which is higher than the two other feed resources. Similarly the major feed resource in midland agro-ecology is natural pasture about (52.2%) followed by crop residues (26.1%) whereas agro- industrial by product cover is about 21.7%.

Table Types of feed used for fattening sheep in two agro ecologies of the district

|  |  |  |  |
| --- | --- | --- | --- |
| Feed type | Highland %(n=19) | Midland% (n=11) | Overall (%)(n=30) |
| Pasture | 72.7 | 52.2 | 62.2 |
| Agro-industrial | 9.1 | 21.7 | 15.6 |
| Crop residues | 18.2 | 26.1 | 22.2 |

**Source:** Own survey (2015)

## 4.5. Water Resource for sheep fattening

According to the respondents’ response, the three types of water sources identified in district were river (73.3%), spring (26.7%), Most of the respondents revealed that fattening sheep have got access to the water source within >1km distance and some of the respondents revealed that water is served at home. As data I discussed, considering main type of water source, fattening sheep getting water from the well that was around the home stead had significantly higher live-weight change than other sources of water which were relatively distant when compared to spring water sources. With respect to watering frequency, in the study area about 72% and 28% of the respondents offered drinking water for their fattening sheep twice and three times per day, respectively. This may be due to the fact that most of the time sheep fattening activity were done during the time when the majority of their feed was derived from seasonally available green feed and thus the fattening sheep could fulfill their water requirement from the feed. Besides, may be due to the narrow gap of watering frequency. Generally in the study area water source for the sheep was not a big problem.

Table 5: Sources of water for sheep fattening

Water source highland (%) midland (%) Overall (%

Spring 9.10 30.4 20.0

River 81.8 0 65.2 73.3

## 4.6. Housing of Fattening sheep

The current study showed that the three types of houses which had been used to keep the fattening sheep were in living room with the family 40%, home stead shed 40% and barn 20%, Table( 6). The three types of houses which had been used to keep the fattening sheep in Haramaya district Oromia region were separated room in the family house (56%), separated house constructed for the sheep (32%), and enclosed barn with simple shed (12%) as reported by (Shitahun, 2009).

Table 6: Housing system of sheep fattening in two agro ecologies

Parameters highland (%) midland (%) over all (%)

In living room with the family 45.5 34.8 40

Home stead shed 36.3 43.5 40

Barn 18.2 21.7 20

## 4.7. Marketing System of Fattening sheep

### 4.7.1. Source of fattening sheep

According to current study the sheep fatteners were obtain fattening sheep from farm-gate (62.2%), primary market (33.3%) and secondary market (4.5%). In the midland agro-ecology of the study area the source of sheep fattening were based on farm-gate (47.8%), primary market (43.5%) and secondary market (8.7%). But in the highland the source of sheep fattening were from farm gate (77.3%) and primary market (22.7%). (Table7).

**Table 7: Source of fattening sheep**

|  |  |  |  |
| --- | --- | --- | --- |
| Parameters | Highland (%) | Midland (%) | over all |
| Farm gate | 77.3 | 47.8 | 62.2 |
| Primary market | 22.7 | 43.5 | 33.3 |
| Secondary market | - | 8.70 | 45.0 |

In the highland high percent of sheep fattened were obtained from the farm gate or the produce by themselves because there is availability of feed source in highland than midland. (Table 7)

### 4.7.2. Selling Place of fattening sheep

Marketing system was one of the least developments of the livestock sub-sector in the study area. It was characterized by a large number of highly dispersed markets, which generally lack basic infrastructural facilities like perimeter fencing, weighting scale, watering, feeding, resting, and quarantine place. With respect to method of transportation, fattening sheep were trekked on foot while purchasing and selling. Marketing of fattening sheep and other sheep took place at the same open area by mixing together with no any shade and separation structure. This may be favorable for disease transmission from infected to healthy sheep and even it causes human health problem.

### 4.7.3. Purchasing and Selling Price of Fattening sheep

According to the result of the household survey, overall in the study area the mean price of sheep before and after fattening were about 400 birr and 1500birr, respectively resulting in gross profit of about 1200 birr per fattening sheep which comes from price margin and feed margin. Average purchasing price of fattening sheep had similar between highland and midland agro-ecologies. But it had lower selling price in Dire Daw city than in Haramaya town due to the relatively small number of sheep trader from Dire Dawa city that resulted from distance far from farm and road facilities.

Based on the household survey result, profit per fattened sheep in Harar and Dire Dawa was higher than in Haramaya town. As per the market assessment, the price of fattened sheep was slightly higher during Arafa as compared to Christmas. This may be due to more demand of fattened sheep during arafa since the time allowed the farmer to fatten their sheep after completion of plowing activity and also better availability of green feed supply. But during Easter, due to the above mentioned reasons, the supply of fattened sheep was very low. Hence limited supply of fattened sheep to the market have got relatively higher price. This showed that, though there was huge coverage of communal grazing land and huge crop-residues supply, nutritional value of the feed resource was very low and animals did not get their feed demand. As a result; emaciated sheep supplied to the market to reduce competition for feed among the remaining sheep herd and to cover payments of agricultural inputs for crop production.

## 4.8. Results of sheep fattening value chain analysis

The core functions in sheep fattening value chain of the study area include: input supply, production, marketing, processing and consumption.

**Consumption**

**Input supply**

Cooking

Meat sales

Chilling

Treating

Packing

Herding

Housing

Breeding

Feeding

Selling

Collection

Collecting

**Process**

**sing**

**Marketing**

**Production**

Supply of:

Breeding stock

Veterinary services

Consumption

**Figure 5.** Core functions of sheep fattening value chain

**Input supply:** Input supply for sheep fattening production in the Haramaya district includes selection and distribution of breeding rams, provision of veterinary services and improved husbandry skills (through training on improved animal husbandry practices in the areas of feeds and feeding management, housing management and animal health management).

**Production:** Haramaya district is a high potential area for sheep fattening production and sheep production is an integral part of the mixed crop-livestock system. Feeding system is almost entirely dependent on grazing of natural pasture. Shrinking grazing lands and depletion of feed resources are reported in the study area resulting from the increase in the human and livestock population leading to greater cultivation. Currently, the decline in the size of grazing lands has forced the community to mostly use the low laying swampy areas as the main pasture land where sheep contract liver.

**Marketing:** Sheep fattening marketing involves collection of animals, transportation and distribution to end users. In the study areas, collection of animals is carried out mainly by farmers who do sheep fattening trading as a side line activity. Fattening sheep are collected from sheep producers and transported to nearby markets. The number of sheep collected by different collectors depends on the amount of money they have. There are about two sheep markets in the district. Of these, the major sheep market in the area is Dengago from which traders take sheep to Dire Dawa. Market demand for different classes of animals (age and sex) is different in the different areas. For instance, old ewes are the most preferred type of sheep fattening by the hotels at Dire Dawa due to their lower price and higher carcass quantity (high meat yield) as compared to other classes of sheep fattening.

**Processing:** Processing is one of the core functions of sheep fattening value chain. In the study areas, processing is mainly carried out by hotels and butchers for local consumption. Hotels and butcheries slaughter sheep mainly to prepare different dishes and to retail raw meat on kilogram basis. In both cases, slaughter of sheep is not at the municipal abattoirs.

**Consumption:** Sheep are consumed mainly by domestic consumers. Consumers buy either raw meat from butcheries and hotels or buy live sheep and slaughter at home. About 10 - 30% of meat exported from Ethiopia is sheep meat. Sheep are consumed both by domestic and foreign consumers. Domestic consumers buy either raw meat from butcheries and supermarkets or buy live sheep and slaughter at home. The export markets need sheep carcasses and the major processing activity is slaughtering, chilling, wrapping in white linen and transportation to a range of different countries.

### 4.8.1. Sheep fattening Value Chain Actors

The primary actors in sheep value chain of the study areas are: sheep producers (farmers),

Collectors, small traders, ‘big traders’, hotels, butchers, individual consumers and export abattoirs. The characteristics of each of the actors are detailed below.

### Sheep Producers (farmers): Smallholder farmers and collectors buy ewe and ram lambs for fattening purposes. They buy ewe lambs for breeding and ram lambs for fattening. Ram lambs are mostly bought by collectors while ewe lambs are bought both by farmers and collectors. Because of this, producers target such buyers in order to get better prices for their animals. Based on the information obtained from Focus Group Discussion (FGD), farmers and collectors are the ones who pay better prices as compared to traders, butchers and hotels

**Collectors:** Collectors are mostly farmers who do sheep trading as sideline activity. They buy sheep from farmers by going from village to village, and to nearby markets and keep animals for a brief time. They sell about 5 – 20 sheep at a time to small traders, hotels, butchers and individual consumers. They are major suppliers of sheep to the small traders. Collectors estimate live weight of the different classes of sheep by lifting or holding the animals with both hands.

**Small traders:** In the study areas, small traders are those market agents that operate using their own capital and buy less than 20 animals per week. Small traders buy all classes of animals and supply them to hotels, butchers, individual consumers and ‘big traders. Most of the small traders have rich experiences in the market and can easily identify the type of animals required by the different actors. They fix prices in the market and communicate with each other so that everyone refrains from giving higher price. In this case, unless individual consumers or farmers come in and buy the animals for the price already set by traders, the seller cannot sell to other traders.

**Big traders:** We have encountered very few individuals who call themselves and are also called by other**.** Traders, big traders, Big traders’ in the context of the study areas are those market agents that can supply about 50 animals each to Dire Dawa and Harar about 3 to 5 times a year. About 2-3 individual ‘big traders’ use one truck /ISUZU to load about 120 animals to Dire Dawa city at a time. Transportation cost from Haramaya to Dire Dawa about ETB 15.00/head.

**Hotels and butchers:** Both hotels and butchers are important actors in the sheep value chain in the study areas. They are the major processors in the area. Both of them follow similar criteria in selecting animals. They seriously consider body condition and body size, but not coat color and tail type when buying sheep. Mature barren ewes are the most preferred type of sheep by the hotels and butchers followed by castrates.

**Individual consumers:** Individual consumers are one of the major actors in the sheep value chain in the study areas. They buy sheep from traders, collectors and sheep producers. They also buy raw meat from butchers on per kilogram basis. Size and type of animals required by individual consumers is influenced by individuals’ purchasing power, Arafa and the type festive to be celebrated.

**Export abattoirs:** Export abattoirs from Dire Dawa city buy animals supplied from the highland and midland areas and no discrimination is made among breeds. As long as an animal fulfils the body condition and live weight requirements it is accepted by the abattoirs irrespective of place of origin and breed. Export abattoirs need animals with good body condition since such animals have higher fat cover and thus less chilling losses. The fat cover also protects the carcass from discoloration for a longer time. That means fat cover prevents carcass darkening which used to be attributed to breed and agro-ecology. The export abattoirs export chilled carcasses to the Middle East (Saudi Arabia, United Arab Emirates, Dubai and Bahrain).

## 4.9. Major constraints of sheep fattening

There are different factors that affect the development of sheep value chain in the study areas. Some of the major factors that affect each of the sheep value chain actors are described as follows.

**Input supply, Shortage of veterinary drugs supply:** Though veterinary clinics are available in some of the areas, they do not necessarily have drugs and equipment that enable them to treat sick animals. Lack of skilled technicians and facilities to address the health problems in the area. Even though there is one animal health post per two kebeles in the district, there is no laboratory equipment for disease diagnosis. Lack of skilled technicians and experience are also reported in treating sick animals and other animal health related issues. Because of these, prescription of drugs is usually based on symptoms reported by owners.

**Lack of livestock market extension:** One of the most important institutional constraints reported by respondents was weak livestock market extension. The extension system is supposed to be the major source of information and knowledge for the farmers, especially comprehensive information about the development of market oriented livestock production.

**Major production constraints**

**Feed shortage**: It was reported that feed was plentiful and that there was a range of feed resources in the past. However, due to increase in human population (through its effect on expansion of crop land at the expense of grazing lands) and livestock population, currently feed resources are depleted and the performance level of animals has also declined. Some of the low laying swampy areas which used to be grazing lands are currently used for crop production.

**Poor/traditional housing**: Farmers provide housing for small ruminants and calves. In most cases, the family members share their own houses with their animals where either mixed species or only small ruminants are kept during the night. Still others have separate houses for the small ruminants. However, in both cases earthen floors which are difficult to clean are used.

**Low bargaining power of producers:** Sheep producers bargaining power is influenced by seasons. They have lower bargaining power during May, June and July when there is low market demand and excessive supply of sheep. Despite the low market demand for sheep in the study areas, farmers are obliged to sell their animals to purchase agricultural inputs such as fertilizer and improved seeds. Producers are obliged to sell their animals during these months mainly because they do not have an easily accessible source of credit to help them meet their cash needs during these seasons.

**Limited access to market information**: Both sheep producers and traders reported that they have very limited access, if any, to formal livestock marketing information in the areas. It was however reported that traders may have better information about market prices than farmers because of their networks. Due to this sheep producers depend on actual market day information or depend on previous market information for price decisions. They also obtain non-formal market information from other farmers.

**Shortage of consistent supply of quality sheep and multiple taxation:** Some of the major problems reported by traders were lack of an adequate supply of quality sheep (sheep with good body condition), lack of market information and the existing taxation system. Both traders and export abattoirs complained that they do not get well conditioned animals consistently. The other important problem reported almost by all market actors (sheep producers and traders) was multiple taxation. An animal is taxed at each market whether sold or not. Usually ram or ewe lambs are trekked with their dams to markets to make trekking easy.

**Lack of vertical linkage of sheep producers with other actors in the value chain:** There are two types of linkages in a value chain: vertical and horizontal. The former refers to the coordination among players (firms) engaged in similar functions or similar levels of value chain. These types of linkages are critical for moving a product or service to the end market. Vertical cooperation reflects the quality of relationships among vertically linked firms up and down the value chain. More efficient transactions among firms that are vertically related in a value chain increase the competitiveness of the entire industry. Moreover, vertical linkages facilitate the delivery of benefits and embedded services and the transfer of skills and information between firms up and down the chain.

**Weak horizontal linkages among sheep farmers**

**Horizontal linkages**: Both formal and informal - between firms at the same levels in a value chain can reduce transaction costs, create economies of scale and contribute to the increased efficiency and competitiveness of an industry.

**Seasonality of demand for sheep:** Demand for sheep is seasonal in the study areas. Demand is high during cultural and religious holydays and low at other times of the year.

**Processing constraints:** Meat processing is mainly performed by hotels and butchers in the study areas. Both hotels and butchers prefer mature barren/sterile ewes. They also slaughter castrates and mature intact males with good body condition during festivals. However, they do not get mature barren ewes consistently. According to butchers and hotels, about 40 - 50% of the ewes they purchase for slaughtering are pregnant.

**5. CONCLUSION AND RECOMMENDATION**

## 5.1 Conclusion

## 5.2. Recommendation

Contradicting ideas were raised by sheep producers and export abattoirs on the supply and price of sheep. Sheep producers reported that they do not receive attractive prices for their animals and also indicated that the demand for sheep and sheep price are influenced by season. On the other hand, the export abattoirs complained that they operate at about half of their operational capacities due to shortage of the right type of animals (animals that meet their requirements particularly in age, live weight and body condition). Most of the people in the study area are, illiterate so they should learn so that they could change to work what they are commanded to do so. Most of the feed available in the study area is natural pasture which is seasonal, but improved pasture particularly permanent ones should also be cultivated to increase the production and productivity. Fattening is the emerging opportunity for land owning and landless farmers and other urban and per-urban communities; however, there are limited efforts in providing profitable feeding packages and so appropriate technologies should be generated and disseminated for the stakeholders. There is low awareness of sheep fattening practice in the study area and the advantage they get is low due to higher market price of agricultural by product and management like feeding, watering and housing.

Diseases and parasites which are the major constraint in livestock production should be studied in depth and microbial causes should be identified; Epidemiology should also be clearly indicated and appropriate development intervention should be planned.

Generally, an extension package that is intended to improve the traditional ways of different livestock production should also be designed.

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**7. APPENDEX**

**Interview Question**

Haramaya University College of Agriculture and

Department of ABVM

The questionnaires are prepared by a third year agribusiness and value chain management department student at Haramaya University for the purpose of senior research project in partial fulfillment of the Bachelor Degree of sciences. Its aim is to get information on analysis sheep fattening in value chain development in Haramaya District.

Questionnaire Survey on analysis of sheep fattening value chain development in Haramaya woreda, East Hararghe Zone

**I. Personal Background Information of respondent**

Name -----------------------------------------

• Region--------- • Zone: ------ • District/district: ------- • Kebeles: --------

Ethnic groups -------------------- Major religions----------------------

1. Agro-ecology 1. Lowland 2. High land 3. Midland

1.1 Sex: a. Male b. Female

2. Age ………………….

3. Education level of the respondent:

1. [ ] No formal education 2. [ ] 6 the grade or less 3. [ ] 7th to 12th grade

4. [ ] Certificate 5. [ ] Diploma 6. [ ] Degree

4. Household size: Male Female Total

5. Do you participate in sheep production practice? 1. Yes 🖵 2. No 🖵

6. What are your reasons for starting sheep fattening activity? ----------------------------------------------------------------------------------------------------

7. Have you taken any formal training on sheep fattening? Yes / No (Underline) If yes, where ---------------------------------------; and for how long? --------------------

8. What are the objectives of sheep keeping? 1) Meat 2) Draught 3).market 4) Other (s): dual 5. Others

**II. Feeds and feeding**

9. Which type of feeding system are you using?

1) Only grazing 2) Grazing and stall-feeding 3) Only stall-feeding 4.Spring

9.1A) Is there communal grazing land in the kebele? Yes / No

B) If yes, what is the type communal grazing land available in the kebele? (Rank in %) 1. Open grassland ----- 2. Tree covered grassland ----- 3. Bush/shrub grassland 4. Swampy grassland ----- 5. Stone covered grassland ----- 6. Others (specify)

C) If the status of communal grazing land available in the area is decreasing, mention the possible reasons. (Rank in order) 1. Expansion of farm land -----

2. Reduction in species composition ----- 3. Reduction in biomass production -----

4. Infestation with weeds ----- 5. Overgrazing ----- 6. Others (specify) -----

10. What are the sources of feed for fattening? 1. Pasture 2. Agro-industrial

11. How often do you give feed per day? 1. three times 2. Two times 3. One time 4. Adlibitum

12. When there is feed scarcity, what measures have been used by the farmers to alleviate feed shortage? (Rank in order)

1. Storing the feed during available in the area ---- 2. Hay making ---- 3.Destocking ---- 4. Using browse trees ---- 5. Purchasing feed supplement---- 6. Traveling long distance for searching feed ---- 7. Others (specify) ----

13. What type of forage development /feed improvement strategies have been practiced in the district?

---------------S------------------------------------------------------------------------------------

14. What is the type of grazing system employed during wet season? 1. Unheeded 2. Herded 3. Paddock4. Tethered 5. Zero-grazing 6. Others (specify) ----------------

14.1. What is the type of grazing system employed during dry season?

1. Unherded 2. Herded 3. Paddock 4. Tethered 5. Zero-grazing

6. Others (specify) ---------------------

15. Do you store feed for your sheep? 1. Yes 2.No

15.1. If yes what type of preservation method do you use? a) Hay lager b) silage

16. What are the major feed resources for the family’s livestock? (Rank 1, 2, 3…in order of feed cover)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Rank | Type of feed resource | | | | | | | |
| Natural pasture | Untreated Crop-residues | Stubble grazing | Hay | Silage | Urea-treated crop residues | Feed  supplement | Browse  trees |
| Dry |  |  |  |  |  |  |  |  |
| wet |  |  |  |  |  |  |  |  |

17. Is there shortage of water for your fattening sheep? Yes / No If yes, state the months of the year at which water shortage becomes severe---------------------------

18. How often do you give water per day? 1. three times. Two times 3. One time 4. Adlibitum

19. Do you think that your animals have adequate feed throughout the year?

Yes / No

If no, on which months of the year shortage of feed become more severe?

-----------------------------------------------------------------------------

20. What type of housing system do you use?

1. Home stead shades 2. In living rooms with the family 3. Barn 4. Other \_\_\_\_\_\_\_ (Specify)

**III. marketing of fatten sheep**

1. How do you get information about sheep fattening and marketing? (Rank in order) A. Mass media B. Farmer’s Association C. Agricultural Extension Agents\_\_ D. Nearby fattening farms E. Other (specify) -----------------------

2. Source of sheep for fattening 1. Farm gate (Farmer) 2. Primary market 3. Secondary market 4. Terminal market 5. Other (specify) -----------------

3. Indicate the average distance where marketing of fattening sheep is mostly takes place.

A. <5 km B. 5-10 km C. 10-15 km D. 15-20 km E. >20 km

4. Where do you sell your fattened sheep’s most of the time?

A. In the village B. In the district market C. On contractual bases in the village D. Out of the district market (specify) -------------------

5. For whom do you sell your fattened sheep most of the times?

A. For individuals/ group consumers B. For local butchers C. For middlemen D. For big traders E. For meat processing factory F. Other (specify) -----------------

5.1 How do you sell your fattened sheep?

A. On live weight base using measurements B. With negotiation by visual estimation C. Others (specify) ----------------------------

6. Do you get market information before you sell your sheep? 1. Yes 2. No

6.1. Are there any organizations which assist you in your fattening activity?

Yes / No If yes, list the name of organizations. ------------------------------------------

What did you assisted by such organizations? --------------------------------------------

7.Is there any change in your fattening activity due to the interventions made by those organizations? Yes / No. If yes, what / if no, why?

---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

8. Which source of market information do you prefer?

1. Extension agent 2. Relatives 3. Cooperatives 4. Neighbors 5. Own market visit 6. Other (specify

9. Who determine the price at the market place?

1. Seller 2. Buyer 3. Broker 4. Negotiation b/n seller and buyer

5. Other (specify) ---------------------------------------------

10. Do you think that there is fatten sheep price difference across different markets in your Area? 1. Yes 2. No

11. If yes, in which market is the sheep price is higher and lower?

1. Better /higher price at ------------------------------------------------market

2. Lower price at ---------------------------------------------------------market

12. What do you think is the reason for these price variations?

1. Difference in number of traders 2. Proximity to urban center 3. Difference In road and transportation facilities 4.Other (specify) \_\_\_\_\_\_\_\_\_\_\_\_\_

13. In which months of the year do you think is the sheep price become higher and Lower?

14. Why do you think is the reason for sheep price variation across months/season? ----------------------------------------------------------------------------------------------------

15. What factors determine sheep price at the market place?

1. Color 2. Age 3. Sex 4. Weight 5. Time of sale 6. Other (specify)

16. When do you mostly sell your sheep?

1. When price is high 2. During harvest season 3. When need arises

4. Other (specify) ----------------

17. Does the supply of sheep in the markets vary from season to season?

1. Yes 2. No

18. If yes, in which months of the year do you think is the sheep supply and demand Becomes higher and lower?

19. What is the reason in the supply changes?

1. Price change 2. Transportation problem 3. Drought (Lack of grazing

Land) 4. Disease incidence 5. Other, specify

IV. The main Problems related with sheep Fattening

1. Do you have any sheep production problems? 1. Yes 2. No

2. If yes what are the problems? (Mention)

----------------------------------------------------------------------------------------------------

3. What is the solution of that problem?

----------------------------------------------------------------------------------------------------

4. Who give the solution for that problem? 1. Government 2.Private Veterinarians 3. Traditional medications 4. Other \_\_\_\_\_ (Specify)

5. Do you have any other problems regarding on sheep fattening practice and marketing system? 1. Yes 2.No

6. If yes, what is it? -----------------------------------------------------------

V. Significance of sheep fattening

18. What are the major problems affecting sheep fattening practice in the district? ----------------------------------------------------------------------------------------------------

1. How do you evaluate yourself in practicing sheep fattening?

1. Strong 2. Weak 3. Never

2. If your answer is strong, why?

3. In your lifetime, have you seen any function of fattened sheep?

A. yes b. no

4. If your answer is yes, is there any difference from other sheep benefit?

5. Today the sheep fattening practice

A. Is raised; if your response is ‘yes’ why \_\_\_\_\_\_\_\_\_\_\_\_\_\_?

B. is declines if your response is ‘yes’ why ?

6. If your answer is no, do you practice supplementary feeding of your sheep? 1. Yes 2. No

7. If your answer is yes:

A. what is the source of supplementary feed 1. Market 2. Farm 3. Both

B. how do you provide 1. By feeder 2. Broadcast on the ground If you provide by feeder what is the type of the feeder? 1. Wooden made 2. Stone made 3. Clay made 4. Metal/tin made 5. Other

C. do you process or not? 1. Processed 2. Not processed

D. if it is processed how do you process? 1. Ground 2. Soaked in water.

E. if your answer is yes? What are the supplementary feeds? List them

F. if yes, do you use concentrate feeds? 1. Yes 2. No

VI. Health and Disease Control

1. Do you experience serious disease outbreaks? Yes \_\_\_\_\_\_\_.No\_\_\_\_\_\_\_\_\_\_\_

2. If yes, describe the common diseases you have experienced in your sheep-------

3. What do you do when sheep are sick?

(a) Treat them myself (b) Call in veterinarian (c) Call in development agents (d) Cull/kill them all immediately (e) Slaughter them all immediately for home Consumption (f) Sell them all immediately (g) others. Specify ------

4. What is The Common Challenges/Problem of sheep Production for You?

5. What type of development interventions have to be made to enhance the performance of sheep fattening activity started in your area? ----------------------------------------------------------

Farmers Comments, Suggestions and Recommendations

1. What do you think or recommend improving sheep production in your area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What do you think or recommend improving sheep and their product marketing in your area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sheep Product Consumptions

1. Do you eat sheep? 1. Yes 2. No

2. If yes how many sheep per year?

3. Which color do you prefer?

4. Which breed do you prefer? 1. Local 2. Exotic.

If no why? …………………………………………………………...

6. Mention in order the dominant and useful species used as livestock feed in the kebele Grass Legume Browse tree/shrub

1st------------------------------------- ------------------------------------- ---------------------

2nd------------------------------------- ------------------------------------- --------------------

3rd------------------------------------- ------------------------------------- --------------------

4th------------------------------------- ------------------------------------- ---------------------

5th------------------------------------- ------------------------------------- ---------------------

6th------------------------------------- ------------------------------------- --------------------