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ASSESSMENTS OF MARKET ORIENTED BEEF CATTLE FATTENING SYSTEM UND FARMER MANAGEMENT CONDITION IN SOUTH OMO ZONE OF SNNPR

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ABSTRACT

A sample survey was conducted in six districts of three woreda in South Omo zone of SNNPR to assess smallholder beef cattle fattening and marketing systems under farmer management condition. Using a purposive sampling technique, a total of 120 households from six districts were included in the survey. The sample respondents indicated that about 97.5% were castrate their animals for fattening purpose while only 2.5% didn't. About 25.6% of the sample respondents had experience in fattening of uncastrated animals while 74.4% had not experienced in fattening uncastrated animal. About 90.6% of the fattening system they carry out was outdoors, 5.1% was indoor and 4.3% were both indoor and outdoor. About 78.9% of the sample respondents indicated that the establishment of farmers' cooperative organization could help to exploit the existing livestock potential in a better way while 21.1% didn't think. About 77.9% Of the respondents indicated that although individual farmer tells the selling price for their own product, they were unable to sell at their own selling price. This is because market price setting for the product was by trader, 15.9% was by negotiation, 2.7% was by farmer individually, 1.8% respondents determined prices through involvement of brokers/middlemen-this offers the lowest profit margin for the producer due to the fee paid to the middle men and 0.9% was by both broker and negotiation. According to sample respondents, the majority of individual farmer didn't set the price for their own product, they were price takers. Cattle marketing in the study area function at two levels, namely village level and primary markets. Market actors were producers, consumers, middlemen, restaurant owners, traders and butchers. The channels of cattle marketing was farmers-to-farmers, farmers-to-consumers, farmers-to-traders and farmers-to-butchers. Most of the feed resources were locally available Therefore, to increase the quality and number of animals fattened, providing farmers with sufficient training and extension services on improved cattle fattening technologies, adaptation and introduction of improved feeds and feeding system, market information are needed. Season and market locations were found to affect price of cattle suggesting the need to plan cattle fattening targeting season and market location to benefit farmers from better price, so that cattle fattening become sustainable.

Keywords: Cattle fattening, Marketing, Marketing channel, Middlemen, Price determination.

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Contribution/ Originality

The paper's primary contribution is finding that investigating the existing cattle fattening practices and marketing systems, constraints and opportunities, the main actors in marketing of beef cattle fattening and locally available feeds used for beef cattle fattening in order to plan and develop improved cattle fattening and marketing systems.

1. INTRODUCTION

The agricultural sector plays an important role in the overall developments on the economy of Ethiopia. The sector plays a major role in the national economy and it is the source of income and employment for the rural population [1]. The sector accounts for 46% of the gross domestic product (GDP) and livestock contributes 30% to the agricultural GDP and 19% to the export earnings [2]. Meat production and consumption is important in Ethiopian economy and ruminants contribute over 3.2 million tons, representing over 72% of the total meat production.

Cattle production in Ethiopia is an integral part of the mixed farming, agro-pastoral and pastoral production systems. In both rural and urban areas, smallholder cattle fattening is emerging as an important source of income. In rural Ethiopia cattle fattening is based on locally available feed resources.

According to MOA Adugna [3] Cattle fattening practices in Ethiopia is categorized into three major fattening systems: traditional system, by-product based system and Hararghe fattening system. In traditional system, farmers usually sell oxen after the plowing season when they are in poor condition and too old for the draught purposes. By-product fattening system is mainly based on agro-industrial by-product such as molasses, cereal milling by-product and oilseed meals. Intensive feeding of the available feed supply to young oxen used for draught power could best describe the Hararghe fattening practice. The Hararghe fattening system is characterized by the use of the available feed resources to young oxen through cut-and-carry feeding system of individual tethered animals.

The most common feed types used for this system are thinning, leaf strip and part of maize and sorghum plants. The Marketing of livestock and livestock products an important activity all over Ethiopia. The primary reason for selling livestock in the highlands of Ethiopia is generation of income to meet unforeseen expenses [4]. Pastoralists also, besides using livestock as sources of food and as a form of saving and wealth, sell animals at the times of cash needs to purchase food and other necessities [4]. According to UNDP-EUE [5] livestock marketing in Ethiopia follows a three-tier system: primary, secondary and terminal markets through which animals go into the hands of small traders and large traders, final buyers, which include butchers, meat-processing factories, fattening farms or live animal exporters. Prices are usually fixed by individual bargaining and depend mainly on supply and demand, which is heavily influenced by the season of the year and the occurrence of religious and cultural festivals. Livestock marketing systems in Ethiopia is not well developed. It is characterized by markets that lack basic infrastructure, facilities like cattle pen, weighing scale, water troughs, feed and market information [6]. Ruminant (cattle, sheep and goats) fattening is a well common lucrative business among the smallholders' farmers of the SNNPR.

Although the Southern Nations and Nationalities Regional State is endowed with huge livestock potential and familiar with different livestock production systems including fattening, the resources used, the period of fattening and profitability is not yet studied and well documented.

Traditional backyard cattle fattening is a deep-rooted and widely practiced cattle enterprise in all zones and special Woreda in the region, although it is by and large a seasonal undertaking. The practice is synchronized with the existing farming system as it most relied up on locally available resources to minimize finishing costs. Sheep and goat fattening is also common in Kembata Tambaro and the nearby zones [7-9]. Scarcity of feed, animal in poor condition before fattening and improper management prolong the finishing period. Longer fattening periods tie up capital, which in turn significantly reduces profit realized from cattle finishing [10]. The farming societies in area perform the fattening task by backward system of fattening with the available feeds, in which the availability fluctuates from season to season.

The feed categories used for fattening operation are of local type that by its own prevented the small scale farmers not to exploit the benefits from the sector, prolonged the fattening period and reduced the profits earned. These by its own calls for introduction of improved feeds and feeding system so as to curtail the fattening period for

finishing and make the operation throughout the year. The fattening operation is run using commonly available feed resources of local and processed (agro-industrial by-product). Local feed types like *Enset* (corms, pseudo stem and leaves), *Arekeatella* (residue of local beverage), grains of haricot bean and maize and sweet potato roots and tubers [3].

In the study area, there is little information available on smallholder cattle fattening and marketing systems. Therefore, to plan and develop improved cattle fattening and marketing systems, it is very important to investigate the existing cattle fattening practices and marketing systems in the study area. The objective of this study was, therefore, to assess smallholder beef cattle fattening and marketing systems in south omo Zone.

1.1. Objectives

1.1.1. General objective

To assess smallholder beef cattle fattening and marketing systems in south omo Zone.

1.1.2. Specific Objectives

- To identify major constraints and opportunities of beef cattle fattening and marketing
- To identify the marketing system and the main actors in marketing of beef cattle fattening
- To identify locally available feeds used for beef cattle fattening
- To derive recommendation for market oriented beef cattle fattening

2. GENERAL INFORMATION

2.1. Description of the Study Area

South Omo Zone is one of the 13 administrative zones found in SNNPRS which covers an area of 25530 km² and is located 4.43°-6.46' N and 35.79°-36.06'E, and has a human population estimated 472977. The population density of the zone is 21 persons per km² it's bordering with GamoGofa Zone, Keffa Zone and Konta and Basketo special Woreda in north, Kenya in south, konso and Derashe special woredas in east and Sudan & bench maji Zone in west.

The Zone is divided into 8 woredas and 1 city administration. Generally the altitude of the zone ranges between 360 and 3500 m.a.s.l. The traditional agro-ecologies Dega, woinadega, kola and semi-arid cover 0.5, 5.1, 60, and 34.4 percent respectively of the total area. Rainfall pattern in the area is both unimodal and bimodal. The mean annual rainfall ranges between 400 and 1600 mm. The mean annual temperature ranges between 10.1 and 27°C.

The zone has a huge animal resource with an estimate of about 906,442 cattle, 497,092 sheep, 846,611 goats, 311 camels, 453,366 chickens, 322,599 bee colonies and 87510 equines. Whereas Maize, Sorghum, Barley, Wheat, Teff, Godore, Millet, Cassava, Haricot bean and field pea are the major crops grow in the area.

Regarding the land use the proportion of cultivated land, grazing land, forest land, cultivated land and non-cultivable land and others are 11.22, 29.25, 12.55, 15.69, 10.85, and 20.42 percent respectively.

There are 16 different ethnic groups found in 8 woredas. Except the Ari ethnic group which covers 2 of the 8 woredas and a farming system of sedentary farming. The rest of the ethnic groups having a farming system of pastoral and semi-pastoral type.

3. METHODOLOGY

The beef fattening assessment study was undertaken in three potential areas of beef cattle fattening in south Omo zones of SNNPR. These three woredas (Benatsemy, Hammer and Debub Ari) were selected purposively to represent the zone (the low land and highlands of zone).

It was intended to take two kebeles each from Debub Ari , Benetsemay and Hammer woreda. Secondary information was gathered from the zone and woreda office of agriculture as well as cooperative office. Participant Keble were selected based on secondary data of the woreda and consulting experts of the respective woreda offices. A total of six kebeles, four From Benatsemy and Hammer woreda (two from each) and two kebeles from Debub Ari were selected purposively. A total of 120 respondents, 20 from each kebele were interviewed.

The respondents were selected based on their pervious experiences of beef cattle fattening and marketing. Interview was made with respondents using a Semi structured questionnaire as well as focus group discussions and key informants interview were made.

3.1. Type of Data and Methods of Data Collection

The major data collection methods used in the investigation periods includes group discussion with key informant interview. A preliminary assessment was conducted to collect basic information about the woreda in order to select representative kebeles of the beef fattening and marketing. Participatory research approach was believed as an efficient way to jointly understand beef cattle fattening constraints and jointly identify its upgrading strategies. It was believed to generate policy relevant information that can provide guidance for further research, development interventions and for guiding formal survey. Thus, discussions with key informants and observation were conducted.

Survey questionnaire was prepared and pre-tested for each sample respondents within the study area. Using the questionnaire, interviews were conducted to gather data on household characteristics, socioeconomic and demographic characteristics, farm information, management of the fattening cattle, feeds and feeding, marketing and market access and information services, market actors and price determination, attitudes and preference towards beef cattle production, attitudes and perceptions towards price , challenges and threats of beef cattle trading, capital (financial, social), purchase practices, responsibilities, duties and or function of beef cattle marketing actors, selling practices, transportation. The check list was prepared in line with structural questionnaire. The training was given for the development agent working in the study area in order to acquaint them with all way of approaching, steps of requesting, meaning, aims and goals of the research study and others. After training was given for enumerators pretest was accomplished and the pre- tested questionnaire of each enumerators way of data collection, asking and interviewing system, filling mechanisms, the intended and the actual data matching were checked by interchanging questionnaire with one another.

3.2. Sampling Procedures and Sample Size

For this study the main sampling techniques to be used were purposive sampling. The number of sample households based on the proportion 5 to 10 % of the total households living in each selected kebeles were included.

3.3. Data Analysis Technique

Both descriptive statistical and appropriate econometric analysis with the help of SPSS were used to analyze the data.

4. RESULTS AND DISCUSSION

4.1. Farming System

Of the total, 33.3% of sample respondents were farmers,48.6% of the sample respondents were agro pastoral while the remaining 33.3% was pastoral.

4.2. Demographic Characteristics of Farm Households

Attempts were made to collect information on demographic characteristics of the survey HHs to provide information on some of the key variables for the study area. The variables examined in this section are HHs' sex and age structure, and composition of sample HHs, marital status, and family size of sample HHs.

The mean age of the sample respondents at the time of the survey was 38.33 years with minimum age of 16 and maximum age of 75. Of the 120 sample respondents (88.1 percent) were males and the rest (11.9 percent) were females.

With respect to the educational status, the highest proportion of the sample agro pastoralists were illiterate (58.5 percent). 24.6 % were primary, 13.6% were junior while the remaining only 3.4% had with an educational level of secondary school suggesting that illiteracy rate is higher which has impact on fattening practice. The present finding is almost similar with Tollossa, et al. [11] in Yabello district shows that the proportion of pastoralists who attended formal education is (41.7%).

With regard to the marital status of agro pastoralists, 95.8 percent were married and 4.2 percent were single. There was no who divorced and widowed from the sample respondents.

Table-1. Demographic Characteristics of Sample Respondents by Agro pastoralist Group

Characteristics		Percentage
Gender:	Male	88.1
	Female	11.9
Educational Status	Primary	24.6
	Junior	13.6
	Secondary	3.4
	Illiterate	58.5
Marital Status	Married	
	Divorced	
	Widowed	
	Single	
Farming System	Pastoral	33.3
	Agro pastoral	33.3
	Farmers	33.4

Source: From Survey Result

4.3. Age and Sex Composition and Family Size

The composition of family members on the basis of age and gender of the sample pastoralist and agro pastoralist are shown in Table 2. The average male family size below the age of 15 years old was 2.24 with the minimum and maximum family sizes were found to be 1 and 7 persons respectively. The average male family size between the age of 15 and 65 years old is 1.86 with the minimum and maximum family sizes were also found to be 1 and 7 persons respectively. While the average male family size above 65 years old was 1.00. Also the average female family size below the age of 15 years old was 2.45 with the minimum and maximum family sizes were found to be 1 and 7 persons respectively. The average female family size between the age of 15 and 65 years old was 2.06 with the minimum and maximum family sizes were found to be 1 and 9 persons respectively. While the average female family size above 65 years old was 1.29 with minimum and maximum family size of 1 and 3 respectively. As indicated below in the table the majority of family members were below 15 years of age. The average family size was 1.82 with minimum and maximum family size of 1 and 9 person respectively which is different from the findings of

Kocho [12] reported that that in Eastern Somali regional state, the average family size per house hold was 6.2 persons.

Table-2.Family Sizes and Age Distribution by Sex of the Household Sampled

Age Group In Years	Male	Female	Family Size		
	Mean	Mean	Min	Max	Av.
< 15 years old	2.24	2.45	1	7	
Between 15 and 65	1.86	2.06	1	9	
> 65 years old	1.00	1.29	1	3	
			1	9	1.82

Source: Survey Result

4.4. Land Holdings and Land Use Patterns

The overall average farm size was 2.17 hectares per sample household.

This study has revealed that the overall average size of land allocated for crop production was 1.43 and ranges from 0.25 to 6.25. The average size of land covered by trees/forests was 0.92 and ranges between 0.13 and 5.00. The majority of sample households had total land holding/ size in a range of 0.25 to 8.00 with an average of 2.17 here it was indicated in the table below

Table-3.Land Use Patterns of Sample Respondents

Land owned	N	Range	Minimum	Maximum	Mean	Std. Deviation
Total land holding	112	7.75	0.25	8.00	2.1681	1.42389
Land size allocated for crop production	111	6.00	0.25	6.25	1.4302	.95847
Land size covered by trees(forest)	90	4.88	0.13	5.00	.9208	.82266
Valid N (listwise)	90					

Source: Survey Results

4.5. Livestock Holding

Livestock have diverse functions for the livelihood of pastoralist/agro pastoralist in pastoral or agro pastoral farming system. Livestock provide food in the form of meat and milk, and non-food items such as draft power, transport services ,for reproduction, and for egg. Livestock are also a source of cash income. Furthermore, they used as for medicinal value for some disease in the study area particularly goat and sheep.

Specifically cattle provide draft power for crop cultivation, meat and milk for consumption. Cattle were the largest class of livestock owned by surveyed agro pastoralists as shown in Table 4 below. On average, the sample agro pastoralists owned 2.32, 5.48 3.69 6.24 , 2.36 ,13.6 ,6.69 ,2.00 ,5.41 improved cow, local cow, improved poultry, local poultry and donkeys , local goats, local beehives ,improved sheeps , local sheeps respectively. As sample respondents indicated, there were some improved cows, sheeps and poultry. However, indiginous livestock types are dominant in the study area. Goat dominate in the study area compared to sheeps. This could be due to type of feed available in the lowlands favoring goat over sheep. Poultry are kept for egg , for cash and home consumption purpose. Donkey, provide transport of farm input and produces. The majority of sample respondents kept honeybee for the purpose of income and consumption.

Table-4. Types and Average Number of Livestock Owned by the Agro pastoralists

Type of livestock	Minimum	Maximum	Average Holding
Numbers of improved cows currently owned	1	6	2.32
Numbers of local cows currently owned	1	50	5.48
Numbers of improved breeding bulls currently owned	1	1	1.00
Numbers of local breeding bulls currently owned	1	6	2.22
Numbers of improved oxen currently owned	1	2	1.25
Numbers of local oxen currently owned	1	50	3.40
Numbers of improved heifers currently owned	1	5	2.00
Numbers of local heifers currently owned	1	25	3.29
Numbers of improved calves currently owned	1	3	1.64
Numbers of local calves currently owned	1	14	2.95
Numbers of improved sheeps currently owned	2	2	2.00
Numbers of local sheeps currently owned	1	40	5.41
Numbers of improved goats currently owned	-	-	-
Numbers of local goats currently owned	1	80	13.77
Numbers of improved poultry currently owned	1	14	3.69
Numbers of local poultry currently owned	1	20	6.24
Numbers of improved beehives currently owned	-	-	-
Numbers of local beehives currently owned	1	64	6.69
Numbers of local donkeys currently owned	1	9	2.36
Numbers of local horses currently owned	1	2	1.12
Valid N (listwise)			

Source: Survey Data Result

4.6. Fattening, Production and Management

The number of sample respondents currently engaged in fattening business was 83.8% and 16.2% of sample respondents was not currently engaged in business due to shortage of capital, shortage of feeds, lack of awareness on its benefit, existence of unfinished cattle for fattening and some respondents were engaged on crop production activities by using their oxen for draft purpose.

The sample respondents indicated that cattle fattening experience ranges from 1 to 30 years. It averaged to 6.48 years with a standard deviation of 5.923.

Table-5. The number and species of animals currently set for fattening

	N	Minimum	Maximum	Mean
The number of ox set for fattening currently	86	1	10	2.50
The number of goats set for fattening currently	13	1	5	2.85
The number of sheeps set for fattening currently	37	1	10	2.73
Valid N (listwise)	10			

Source: Survey Result

The number and species of animals that sample respondents currently engaged on fattening were ox ranges 1 to 10 on average 2.50, goats ranges 1 to 5 on average 2.85 and sheeps ranges 1 to 10 on average 2.73

4.7. Purpose/Reason for Cattle Fattening

The major purpose or reasons of cattle fattening of sample respondents were about 80.5% of the sample respondents were fatten their cattle for the purpose of getting better prices for existing aged animals when it was sold, 4.2% was engaged as business enterprise, 2.6% was engaged both as business enterprise as well as to get better prices for their existing aged animals while 12% of the sample respondents fatten their cattle for the other purpose such as to enable their ox to plough well strongly, to purchase more other cattle and increase the number of the stock, to buy improved cattle and young ox, to replace with uncast rated one, to increase income, for meat,

for family education, for saving, to construct house. This result was almost similar with the findings of Workneh and Rowland Kocho [12].

As shown in the above the majority of sample respondents fatten their cattle in order to get better price for existing aged animals when it was sold.

The sample respondents indicated that about 97.5% were castrate their animals for fattening purpose while only 2.5% didn't. This was due to 38.9% of sample respondents said that the castrated animal stores fat and bitterly converts feed recourses to meat and 28.7% of sample respondents said that it simplifies the fattening operation, 2.8% it makes the animal healthy and appetite-full, 3.7% was traditionally accepted practices that come from forth -fathers,9.3% of sample respondents said both it simplifies the fattening operation and traditionally accepted practices that come from forth -fathers.

while 7.4% was for other purpose which is in order to increase its price or income, to reduce the power of cattle not to damage people during fattening. As we have seen in the above castrating the cattle for the fattening operation was very important and the majority of sample respondents castrate their animals during the time of fattening.

About 25.6% of the sample respondents had experience in fattening of uncast rated animals while 74.4% had not experience in fattening uncast rated animals. According to the respondents the difference that they observed in terms of time and body weight in comparison with castrated animal was that the uncastrated one increases time of fattening rather than fattening cast rated one and has lower body weight, the uncastrated one stores low fat than cast rated one, Further more, the uncastrated one had given less managements and takes low market price than castrated when fattened. The majority of sample respondents had not experience in fattening of uncast rated animals due to the above mentioned reason.

4.8. The Major Constraints of Fattening Business

Of the sample respondents the major constraints that faced during fattening business were 23.9% low market price of the product, 20.5% high price of feeds used in fattening ,30.7% diseases and parasites,9.1% lack of initial capital and others. According to sample respondents indicated, other problem that affect during fattening business include 72.9% shortage of feeds,2.1% shortage of water and 6.3% shortage of grazing land. Among those shortage of feed was the main problem for the sample respondents. Contrary to present findings, Belete, et al. [4] reported that shortage of capital was the first constraint to cattle fattening in Amhara region of Ethiopia.

Table-6. Management of the animal set for fattening purpose

Management type		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Housing	5	4.2	4.3	4.3
	Feeding	55	46.6	47.0	51.3
	Grazing	30	25.4	25.6	76.9
	feeding and grazing	21	17.8	17.9	94.9
	Housing and Feeding	6	5.1	5.1	100.0
Total		117	99.2	100.0	
Missing	System	1	.8		
Total		118	100.0		

Source: Survey Result

Of the sample respondents that manage the animals set for fattening 47% was prepare shelter and provide feeding,25.6% was tether their cattle on their own grazing land,17.9% was both prepare shelter and provide feeding as well as tether their animals on their own grazing land ,5.1% was both housing and feeding in the shelter and only 4.3% was managed in the house. Similar findings were reported by tesfay [10]. The majority of the sample

respondents fed their animals set for fattening under the shelter prepared for them in order to prevent loss of energy for search of feed and water. Getahun [8] indicated that farmers in east Ethiopia fed oxen for more than one year.

The sample respondents indicated that the average time to fatten ox, sheep and goat were 1.21, 0.92 and 0.97 respectively. According to Jepsen and Creek Habtemariam [13] poor performing cattle are kept for a longer period to reach targeted fattening level.

4.9. Housing of Fattening Cattle

As indicated in the table 6 below about 90.6% of the fattening system they carry out was outdoor, 5.1% was indoor and 4.3% were both indoor and outdoor. The present findings is inconsistent with shitahun MOA (Ministry of Agriculture) [14] reported the three types of houses which had been used to keep the fattening cattle in Harshinwereda of somali region were separated room in the family house (56%), separated house constructed for the cattle (32%), and enclosed barn with simple shed (12%).

Fattening System		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Indoor fattening	6	5.1	5.1	5.1
	Outdoor fattening	106	89.8	90.6	95.7
	Indoor and Outdoor fattening	5	4.2	4.3	100.0
	Total	117	99.2	100.0	
Missing	System	1	.8		
Total		118	100.0		

Source: Survey Result

4.10. Training on Fattening

Of the sample respondents 39.7% was trained in fattening while 60.3% of the sample respondents didn't take any trainings on the fattening of animal. According to sample respondents majority (86.7%) of trainings on fattening was organized by agricultural office, 2.2% was by research center, 6.7% was by NGO while 4.4% was organized through both agricultural office and NGO.

4.11. Household Responsibility

According to sample respondents the responsibility to manage the fattening at household level were 20% by husband, 4.3% by wife, 49.6% by husband, wife and children, 19.1% by husband and wife, 4.3% by wife and children while 2.6% by husband and children. As the sample respondents indicated all the family members were participate while managing the fattening cattle at the household level.

4.12. Criteria to Select Animal for Fattening

According to sample respondents the criteria that they considered while selecting the animals for fattening purpose were 33.6% by their body condition, 25% by their skeletal frame confrontation, 0.9% Castration, 10.3% by their age, 1.7% by their colour, 12.9% was by their body condition and skeletal frame confrontation. Similar findings were reported by Takele and Habtamu [7] and BOARD (Bureau of Agriculture and Rural Development of Amhara Region) [5]. The majority of sample respondents were consider the selection criteria by the body condition of the animals.

4.13. The Establishment of Farmers' Cooperative Organization

About 78.9% of the sample respondents indicated that the establishment of farmers' cooperative organization could help to exploit the existing livestock potential in a better way while 21.1% didn't think that the establishment

of farmers' cooperative organization that could help to exploit existing livestock potential in a better way. The majority of sample respondents think that the establishment of farmers' cooperative organization that could help to exploit existing livestock potential in a better way. According to sample respondents the existence of cooperative organization could help them because:-

- It enables to get better price from their livestock, facilitates good marketing system and creates market opportunity.
- It improves ways of production through communication and knowledge as well as experience sharing among the members.
- It provides market information to the members and enables to achieve their common goals through working together.
- Accessibility to get improved forage, grass, amole salt and trainings on fattening.
- It maximizes profit by reducing taxes and other transaction costs.
- It enables to change their living standards through maximizing income.
- It enables to buy other more uncastrated animals in order to castrate and fatten together to sell at high price.
- There is good initiation and motivation while working together and enables to discuss on problem and get solution.
- It enables to fatten appropriately and sell at reasonable price in better market.
- Availability of credit services from cooperative at minimum interest rate to be engaged in cattle fattening business during the time of financial shortage.
- It has good monitoring and evaluation.
- It has dividend and other benefit from cattle fattening cooperative.
- It can assemble and whole sale to big traders at high price and ability to attract other customers.

4.14. Types of Feeds and Feeding System of Fattening Cattle

The major feeds that sample respondents feed their animals set for fattening are Crop residue, hay, false banana, local beverage by product which is in line with the findings of Takele and Habtamu [7] in southern region and Belete, et al. [4] in Amhara region of Ethiopia. Some major feeds are shown in the table below.

Table-7. Some major local feeds and others that are provided for their animals during fattening in the study area

Types of feeds	
Cut and carry system	Hay
Banana leaves	Crop residues
Enset leaves	Local beverage by product ('Atela')
Household food left over after milling	Desho grass
Banana pseudo stem	Egg
Enset pseudo stem	Amole salt
Fattening tablets	Roots of 'amicha' local
Cooked maize	Maize grain
Leaves of sugar cane	Apetizer
residues ('shufuro')	Cooked coffee

Source: Survey Result

According to sample respondents some major local forage trees species that were used for fattening purpose were mentioned in the table below i.

Table-8. Some Major Local Forage Tree Species used for fattening

Types of local forage tree species		
Zersi	Gandabore	Soba Geda
Wanzaleafs	Bereza	Gandabore
Shola	Felki	Boytako
Ashelarakki	Wuyiyi	Dacho
Tobeke	Bitbit	Turana
Ara	Suni	Ganaya
Shafi	Gichola	Garda
Mudakale	Worwey	Damyke
Banak	Gara	Mazaz
Zurguma	Gan	Shafa
Kenea	Halako	Worworo
Dile	Woyba	Shekomba
Berbira	Lola	Lucinia
Danga	Gadaka	Girawa
Ateme	Daweke	Fruits of girar
GaroBura	Mulkaya	Girawa with powdered
Damyek	Ganxole	maize grain
Wush	Corch	girawa with salt
Wache	Soyabeen	Luci

Source: Survey Result

4.15. Supplementary Feeds

Of the respondents only 4.2% used to supplement 'furishka' for fattening purpose while 95.7% of sample respondents didn't use supplements like concentrates and 'furishka'. The majority of sample respondents didn't use supplementary food like 'furishka' for the fattening purpose rather they used locally available feeds which is in agreement with [Takele and Habtamu \[7\]](#).

5. MARKETING

Marketing Channels: The channels of cattle marketing found in the study areas are farmers-to-farmers, farmers-to-consumers, farmers-to-traders and farmers-to-butchers.

Majority(26.7%) of sample respondents were sell their animals at the farm gate,25.9% of sample respondents were sell at village market,15.5% at woreda market,1.7% at zonal market,3.4% both at farm gate and village market,6.9% at both village and woreda market, 12.9% both at farm gate and woreda market and some only 0.9% of sample respondents were sell their animals at all marketing center such as farm gate, village ,woreda and zonal market.

According to sample respondents the major buyers or customers for fattened cattle in the area were 91.2% traders,3.5% brokers,3.5% was every body who has money and only 1.8% was both traders and brokers.

The sample respondents indicated that the major livestock product marketing actors were about 38.4% was farmers,4.5% was middlemen/brokers,31.3% was traders , 18.8% was both farmers and traders and only 0.9% was both farmers and brokers.

5.1. Market Distance

The average distance between their house and village,woreda and zonal livestock marketing was found to be 8.21,16.95 and 43.31 respectively as shown in the table below. According to sample respondents there was great problem regarding to the distance of livestock marketing. The sample respondents indicated that the fattened animals' market price was being declined due to long distance traveling while taking to the livestock market. This in turn decreased their income from selling of fattened cattle.

Table-9. The distance between their house and fattened cattle marketing place

Distance between their house and market	N	Minimum	Maximum	Mean	Std. Deviation
The distance between house and village market in kilometer	70	0	28	8.21	8.030
The distance between house and woreda market in kilometer	82	7	35	16.95	7.228
The distance between house and zonal market in kilometer	29	16	100	43.31	22.008
Valid N (listwise)	23				

Source: Survey Result

5.2. Price Determination

About 77.9% Of the respondents indicated that although they tell the initial selling price for their own product, they unable to sell at their own initial selling price . This is because market price setting for the product was by trader ,15.9% was by negotiation,2.7% was by farmer individually,1.8% respondents determined prices through involvement of brokers/middlemen-this offers the lowest profit margin for the producer due to the fee paid to the middle men and 0.9% was by both broker and negotiation. According to sample respondents , the majority of individual farmer didn't set the price for their own product ,they were price takers due to:-

- Lack of information on market price and weak bargaining practice between buyers and sellers.
- Market distance and absence of alternative market and entrance of new traders.
- Disease of animals.
- Lack of awareness.
- Expectation on price decline and no need to incur lose in other marketing time.
- In order to buy more other cattle for fattening purpose.
- To proceed according to their fattening and selling schedule.
- To sell according to market condition through price negotiation.

5.3. Market information

Market information is crucial to reduce information gaps and uncertainties that exist in the agricultural sector. It is required by producers in their planning of production and way of marketing the product.42.6% of sample respondents get market information from their neighbors,22.6% by visiting market,11.3% from traders, 13% was both visiting market and from neighbors .As indicated the majority of sample respondents in the study area were get market information from their neighbors informally before they sell which is almost similar with the findings of Daniel Jepsen and Creek [15].

5.4. Market Price

According to sample respondents , they indicated that the maximum and minimum market price for their fattened animals for the last two years. Accordingly, average maximum and minimum price for the fattened ox in the study area was 9,631.77 ETB and 5,794.86 ETB respectively. As shown below in the table 10 an average maximum and minimum price for the fattened sheep was 1,353.96 ETB and 734.89 ETB respectively. Also average maximum and minimum price for the fattened goat was 1,421.43 ETB and 840.48 ETB respectively.

Table-10. Market price for the fattened animals

Market Price	N	Minimum	Maximum	Av.	Std. Deviation
Maximum market price for ox	107	3,000.00	26,000.00	9,631.7757	3,547.19124
Minimum market price for ox	107	1,000.00	18,000.00	5,794.8598	2,438.95213
Maximum market price for sheep	92	15.00	5,000.00	1,353.9674	777.96421
Minimum market price for sheep	92	60.00	2,000.00	734.8913	341.45936
Maximum market price for goat	42	650.00	2,500.00	1,421.4286	477.43508
Minimum market price for goat	42	200.00	1,800.00	840.4762	440.09950
Valid N (listwise)	40				

Source: Survey Results

5.5. Marketing Constraints

The major marketing constraints in the area were :-

- Lack of well organized traders that enter into the market and no support from concerned body.
- Market fluctuation and low demand for the product as well as low payment.
- Lack of market information, infrastructure and awareness on fattening.
- Existence of drought as well as low crop productivity and supply to the market.
- Existence of robbers.
- There is price decline during Ethiopian festivals and absence of regular market days
- Frequent payment of tax was made by the single fattened cattle even if it is not sold.
- Low market price for fattened animals during dry season due to high supply to the market.
- Low price payments made by the traders at the farm gate and problems of brokers.
- Absence of competent traders and limited number of local traders in the study area.
- Inability to sale their product at other big market and absence of receivers.
- Traders and brokers set the market price and producers had no bargaining power
- Absence of livestock marketing place and marketing process benefits off only the traders rather than producers.
- Absence of network and problems of transportation cost.

According to sample respondents, they provided and suggested their own possible solution for the above constraints that they mentioned. These are:-

- There should be government support, infrastructure and educational accessibility particularly for the young generation.
- There should be enough traders entrance into the market ,organized body on livestock who buy and establishments of cooperatives by organizing those who engaged on cattle fattening.
- Trainings on fattening system, market information and awareness creation.
- There should be existence of regular market days and the municipality should deal with the problems of tax .
- Increased agricultural production and productivity.
- When there is brokers in the market not selling the product.
- There should be control of illegal traders as well as facilitating for legal traders to compute and wholesale in the market.
- Not selling at low price when they come to their house or farm gate and in the market.
- Payment for the tax should be made after the selling the product and avoiding alcoholic drinking in the area.
- There should be financial institution for credit and saving service at the time of difficulty period.
- The government should facilitate livestock market in their surrounding or nearest.

- Not selling the product at the time of festivals and searching for better market at other time.
- The government should facilitate market access and business license .

6. CONCLUSIONS

It was concluded that smallholder farmers in the study area practice traditional cattle fattening practices. There was no practice of using improved forages and supplementary food like concentrates or 'furishka' for their fattening purpose in the study area. Most of the feeds are locally available. Shortage of feeds, low market price, disease and parasite, high price of feeds were the main constraint factors to fatten cattle.

They believe establishment of farmers' cooperative organization in the study area that could help to exploit existing livestock potential in a better way. Cattle marketing in the study area mainly function at two levels, namely village level and primary markets. Market actors were producers, consumers, middlemen, restaurant owners, traders and butchers. Market information is crucial to reduce information gaps and uncertainties that exist in the agricultural sector. However, in the study area there was no access to formal market information before sale. They get market information informally from neighbor, visiting market and traders. Most of the producers were unable to determined price for their own products . There was weak bargaining between buyers and sellers and majority of them were price takers. Cattle marketing outlets were farmers-to-farmers, farmers-to- consumers, farmers-to-traders, farmers-to-restaurant owners and farmers-to-butchers. In order to increase the quality and number of animals fattened, providing farmers with sufficient training and extension services on improved cattle fattening technologies ,market information are very important. Because of lack weighing facilities, cattle are marketed based on visual judgment and this could affect the actual price of the animal reducing the profitability of agro pastoralists. Season and market locations were found to affect price of cattle suggesting the need to plan cattle fattening targeting season and market location to benefit farmers from better price, so that cattle fattening become sustainable.

7. RECOMMENDATION

On the bases of the empirical findings of this study, the following recommendations are Forwarded:

There should formulation of appropriate marketing and pricing policies

which enable agro pastoralists earn higher incomes, and provision of timely up to date market information to agro pastoralists.

There should be adaptation and introduction of improved feeds and feeding system.

There should be strong market linkage with different market chain actors.

There should be establishment of market oriented beef cattle fattening cooperative association and infrastructural development.

The research center together with extension office should provide training on the beef cattle fattening system.

The government should facilitate organized market access in their surroundings .

There should be practicing of intensive fattening system and provision of supplementary feeds.

Improving of animal feeds by different treatment technologies should be introduced.

The adaptation of improved forage seeds and forage development should be practiced.

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