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Assessment of Beef Cattle Fattening and Marketing System and Contribution to Household Food Security in Case of Lemmo Woreda, Hadiya Zone, Southern Ethiopia

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Abstract
The study was conducted in the Southern Nation nationality and People Regional Government in Hadiya Zone to assess of beef cattle fattening and marketing system in the case of Lemmo woreda. In the present study stratified sampling method was used and a total of 60 households were selected for survey study. To collect the data both primary and secondary data source were used and the collected data were analyzed by using descriptive. The study showed that the main purposes of beef cattle production were for income generation, for asset, and for home consumption (51.66%), (18.33%), (15%) respectively. The common beef cattle selection criteria were health condition, physical appearance, sex, age are 43.3%, 25%, 13.33%, 13.33% respectively. Major feed resources were natural pasture 28.33%, crop residues 21.66%, maize stalker 11.66%, frushika 10%. Beef cattle production constraints were feed shortage 41.66%, lack of management 11.66%, lack of knowledge 11.66%, scarcity of land 10%, drought 10%, and disease 8.33%. The duration of fattening was 1-3 month 71.66%, 3-6 month 23.33%, and 6-9 month 5%. Major Beef cattle production opportunities were market demand 38.3%, comfortable environments 30%, and feed resource and water availability 13.33%. Beef cattle marketing constraints were road problem 31.66%, unequal demand and surplus 28.33% and market distance 21.66%. Therefore based on the result we recommend that the farmers should be well awarded on beef cattle fattening and marketing system, use improved forage for supplementary feed and should be well informed about market condition and further large scale research should be conducted on the area of beef marketing and their contribution to food security in the area .
Keywords: Beef cattle, beef cattle production, fattening system, marketing system.

INTRODUCTION

Ethiopia has the largest livestock population in Africa with estimated number of 49.3 million of cattle, 25.02 million sheep and 21.88 million goats that has considerable contribution to the livelihood of the people (CSA, 2009). Livestock in Ethiopia provides drought power, income to farming communities, means of investment and important source of foreign exchange to the nation of the total have hold cash income from crop and livestock. Livestock account for 37 to 87% in different parts of country and the higher cash income (Ayele *et al*; 2003)

Livestock production is an integral part of Ethiopia agricultural system. the sub sector contributes 12% and 33% to the total Gross Domestic product(GDP) and agricultural Gross Domestic product (GDP) respectively, and also account for 12-15% of the total export earning, the second in order of importance following coffee and provides livelihood for 65% of the population(LMA, 2001). In spite of the presence of large and diverse animal genetic resource, the production (i.e. meat and milk) of livestock remains low in many developing countries including Ethiopia for various reasons such as inadequate nutrition, poor genetic potential, inadequate animal health services and other management related problems(Lobago, 2007). According to NBE (2001/2002), from 1998-2002, there were only five licensed export slaughter house in total have a capacity of handling 7,600 sheep and goats and 200 cattle/day. There are also five meat processing plants (all belong to ELFORA) located in different parts of the country and have considerable processing capacity, but are not fully operational due to high packing costs and lack of markets for the products (NEPADCAADP, 2005)

The profitability of beef fattening was measured not just by the returns from the meat, but also by the contribution the fattening animal made to soil fertility. For example, purchasing healthy cattle that is good body condition ties up capital for relatively short period and reduces operation costs (Ibrahim et al, 2002). The principal components of total cost of fattening and therefore, the feed costs and level of uses are considered as the key components of profitable beef cattle fattening (Handfield et al, 2002). The amounts of feed, condition of fattening cattle day to day management of animal determine the length of fatting period. Therefore, scarcity of feed, animal in poor condition the finishing period longer period up capital, which turn significantly reduces profit realized from cattle finishing (Ibrahim *et al;* 2002).

The beef marketing in national level for enhancing the ability of poor small holder farmers and pastoralist to reach markets, and actively engaging them is one other most pressing development challenges. Remoteness results induced farm gate prices return to labor and capital, and increased input costs. This in turn, reduces incentives to participate in economic transactions and results in subsistence rather than market oriented

production systems. Sparsely populated rural areas remoteness from towns and high transport costs are physical barrier in accessing markets (Holloways and Ehlli, 2000).

The livestock sector plays a vital role in the overall development of the country economy yet, the existing income generating capacity of livestock as compared to its immerse potential country is not encouraging. Under this condition, farmers have no intensive to improve the quality of their animals through appropriate management practice (Ayele et al., 2003). This current knowledge on livestock market structure performance and price is poor policies and institution to market system. But at no time Ethiopia according to NBE (2001/2002) from 1998- 2002 there were only five licensed export slaughter houses in total have a capacity of handling 7,600 sheep and goats and 200cattle/day. There are also five meat processing plants all belong to ELFORA, located in different parts of the country and have considerable processing capacity, but are not fully operation due to high packing costs and lack of markets for the products (NEPAD-CAADP, 2005).

Livestock industry is an important and integral part of the agricultural sector in Ethiopia. Livestock farming is vital for the supply of meat and milk; it also serves as a source of additional income both for smallholder farmers and livestock owners' (Ehui *et al.,* 2002). Livestock production constraints can be grouped into socio-economic and technical limitations (Mengistu, 2003). Inadequate feed, widespread diseases, marketing and infrastructure are the major constraints affecting livestock production in Ethiopia (Desta et al., 2000). The economic base of the farmers in the Hadiya Zone, Lemo Woreda is depending on agriculture and livestock like other parts of our country. The agriculture is a mixed type. Livestock productions are cattle sheep, goats and horses, donkeys and crops are maize, teff, wheat and barley. However, there has no enough information on fattening of cattle including; health care, housing, the marketing situations of the animal. Understandings of these points are important for the cattle ownership patterns and marketing behaviors from that area. In such information provide insight towards the designing and improvements of strategies to alleviate the shortage of the quality live animal (cattle) supply in the markets. Shortage of fattening and marketing system the potentially in the area then this calls for scientific research as a solution for problem. There are certain problem regarding to production and marketing of beef cattle in the study area like lack of knowledge, lack of management, road problem and marketing distance. Therefore the present study is designed to assess beef cattle fattening system, marketing and marketing challenges and opportunity in the area

METHODOLOGY

Description of the study area

The study would be conducted in Lemmo Woreda of Hadiya Zone, SNNPRS of Ethiopia. This area was located 237 km far from Addis Ababa and 179 km far from Hawassa. The study area border with Misha Woreda and Silite zone in the North, Soro Woreda and Kembata Tembaro zone in the South, Ann Lemo Woreda and Shashego Woreda in the East, and Gomboro Woreda in the West. The woreda was approximately located between 37^0 50'' - 37^0 55'' East latitude and $7^0$35'' – 7^0 30'' North longitudes. Annual rain fall was 900mm – 1400mm the average of annual rainfall was 1200mm, mean annual temperature 12^0c -26^0c and elevation was 1990- 2720m above sea level. The woreda was densely populated within two agro- ecological zone. There were Woinadega 93% including 29 Kebele and Dega 7% including 4 kebele. The Woreda was known by large number of livestock, comprising cattle 91,853, sheep 43,439, goat 31,788 poultry 103,559 and equine 14,924. The total population of the study area has an estimation of 160,766 out of 79,368 are male and 81,398 are female (LWFEDO and LWADO, 2015)

There were 33 kebeles in lemo woreda from these 6 or six kebele were selected by using stratified sampling technique due to effects of different agro- ecologies, from these each agro-ecology (woina-dega and kola) among those six kebeles four from woina dega and two kabele from kola was selected. In the same manner, 10 household were selected from each selected kabele. Then a total of 60 households were used for survey data. Then the data was collected a beef cattle production, marketing system, price, market out let, major beef marketing in the area.

The data was collected from primary source. The primary data was collected through direct interview stakeholder by preparing questionnaires for the cattle owner, field workers and other expected person.

The secondary data was collected from written documented materials concerning beef cattle fattening and marketing system. Secondary sources kept in Lemmo Woreda Animal and Fishery Resource Office was collected. The secondary data include total livestock population and the document files of the beef cattle fattening and marketing system was used as a source of information.

Data analysis

The collected data was summarized, and then analyzed by descriptive statistics such as mean, percentage, frequency and reported by using tables, graph etc

RESULTS AND DISCUSSION

Background information of respondents

The results of the study reveled in Table 1 below the largest portions of respondents were in the age range of 18-33, 34-48, 49-64 years and there were no respondent below 18 years. This showed that the largest portions of respondent were within productive age group and this had positive effect in the performance of agricultural activities in the area. On the study area both female and female were participated accordingly the total respondents 64% were males and 36% were females. Most of the farming practiced by the male, like plough, sowing, fattening and house construction while the female were expend their time in home activities like cooking, fetching water, collecting wood and overall family management. The study also showed that from the total respondents 55% were illiterate, 10% were grade 1-4 , 10 % were grade 5-8, 8.33% were grade 9-10, and 16.6% were whose education level greater than grade 10. From this we can understand the majority of farmers were illiterate.

Table 1 Background information of respondents

Respondents information		No =60	Percentage
Age	<18	-	-
	18-33	16	26
	34-48	25	42
	49- 64	19	32
Sex	Male	38	64
	Female	22	36
Marital status	Married	51	85
	Single	9	15
	Divorced	-	-
Educational level	Illiterate	33	55
	Grade 1-4	6	10
	Grade 5-8	6	10
	Grade 9-10	5	8.33
	>grade 10	10	16.66

As indicated in Table 2, largest land holding size in lowland area utilized for cropping and grazing was relatively lower than highland area. This was due to high land area has the largest population where as on lowland area has large portion of land. In high land area for cropping (42%) was higher than grazing land (23.4%). The current study was similar with (Elias et al., 2007) study. In lowland, grazing was most common source of feed with limit of the use of crop residue. During wet season, when crop residues are scarce in the highlands, male animals are taken to the lowland areas for grazing. In generally, the largest portion of respondents has greater than 0.5 ha of cropping land size i.e. 38%. This showed that many farmers are converting grazing land in to crop lands. This revealed that respondents were utilized most part of land for cropping, thus by products of crop used for beef cattle production.

Table 2: Land holding size

Land size (ha)		High land		Low land		total	
		No=30	%	No=30	%	No= 60	%
Cropping land	0-0.25 ha	13	42	5	17	18	30
	0.25-0.5 ha	10	33	9	30	19	32
	>0.5 ha	7	25	16	53	23	38
Grazing land	0-0.25 ha	7	23.4	13	43.3	20	33.3
	0.25-0.5 ha	5	17	7	23.4	12	20
	>0.5 ha	-	-	-	-	-	-

Purpose of keeping cattle

The purpose of keeping cattle is presented in Table3. Most of respondent in highland area keeping of cattle for purpose of income generation (53.33%) than lowland area (50%) while in low land area. In the over result of the study, about 51.66%, 18.33%, 15%, and 15% of the respondents said for income generating, for asset, for social value, and home consumption respectively, were their major purpose of keeping beef cattle in the study areas. Therefore, cattle have multiple purposes in the study area.

Table 3: Purpose of keeping cattle and contribution to income

Major purpose	Highland		Lowland		Total	
	No=30	%	No=30	%	No=60	%
For home consumption	5	16.66	4	13.33	9	15
Income generation (sale)	16	53.33	15	50	31	51.66
For asset	5	16.66	6	20	11	18.33
For social value	4	13.33	5	16.66	9	15

The result of this also supported by Ayele *et al,* (2003) who indicated that cattle in Ethiopia provide income generating and means of investment. The study also agreed with Elias et al, (2003) who found that cattle in Ethiopia use income and means of investments and important source of foreign exchange to the nation of the country.

Beef cattle feed sources and feeding systems

As revealed in the Table 4, that the major feed sources for beef cattle were varied from season to season. In high land area major feed source during wet season were natural pasture, crop residue, atela, stalker, maize grain and sugarcane are 13.3%, 20%, 3.33%, 26.6%, 10%, and 6.66% respectively and during dry season major feed source were natural pasture, crop residues, atela, sugarcane, frushika , and maize stalker are 20%, 26.6%, 6.66%, 13.3%, 10% and 10% respectively and were as in lowland the major feed in wet season were natural pasture, crop residue atela, and maize grain are 33.3%, 10%, 10%, and 13.3 respectively . In generally, the study showed that, the wet season for beef cattle were in study area natural pasture 23.3%, crop residue 15%, stalker 15%, and maize grain 11.6%. The study also agreed with point that the availability of crop residue is closely related to farming system the type of crop produced and intensity of cultivation of maize, teff, wheat straw and barely straws are the major residues available in the area (Alemu, 2008). In lowland agro-pastoral system crop residues are most important source of feed. During the wet season when crop residues are scarce in high lands, mail animals are taken to lowland for grazing (Elias et al, 2007).

According to the survey results the major feed resource for livestock in the study area natural pasture, which was estimated to account about 23.3% of the total feed supply in the study area followed by crop residues 15% especially from maize Stover and teff straw other feed resources include stalker and improved cultivated forage crops like maize grain in the area comprise only about 15% and 11.6% of the total feed respectively because of this study focused on wet season.

Table 4: Beef cattle feed sources and feeding systems

No.	Major feed types	High land				Low land				Total			
		Wet season		Dry season		Wet season		Dry season		Wet season		Dry season	
		No=30	%	No=30	%	No=30	%	No=30	%	No=60	%	No=60	%
1	Natural pasture	4	13.3	6	20	10	33.3	11	36.6	14	23.3	17	28.3
2	Crop residues	6	20	8	26.6	3	10	5	16.6	9	15	13	21.6
3	Sugar cane	2	6.66	4	13.3	2	6.66	1	3.33	4	6.66	5	8.33
4	Stalker	8	26.6	2	6.66	1	3.33	1	3.33	9	15	3	5
5	Atela	1	3.33	2	6.66	3	10	3	10	4	6.66	5	8.33
6	Sweet potato	2	6.66	1	3.33	1	3.33	1	3.33	3	5	2	3.33
7	Frushika	2	6.66	3	10	3	10	3	10	5	8.33	6	10
8	Maize stalker	2	6.66	3	10	3	10	4	13.3	5	8.33	7	11.6
9	Maize grain	3	10	1	3.33	4	13.3	1	3.33	7	11.6	2	3.33
10	Improved forage	-	-	-	-	-	-	-	-	-	-	-	-
	Total	30	100	30	100	30	100	30	100	60	100	60	100

Feeding system of beef cattle

As indicated in Table 5, respondents feed their animals in different feeding system; 46.6% of used mainly only grazing in lowland area, 60% used mainly only cut- carry system in highland. This was due to availability of grazing land in lowland area while in high land area there is shortage of grazing land and use of crop residue or cut and carrying feeding system. In the overall result of the study, 48.33%, 36.6% and 15% of the respondent were feed their beef cattle by using cut and carry system only grazing and both grazing and cut-carry systems respectively. This implies major feed source of beef cattle were obtained from own source and some from purchase/market Getachew (2002) and Solomon (2004) reported, grazing is the predominant form of ruminant feeding system in most parts of the extensive and smallholder crop livestock farming areas in Ethiopia.

In Table 5 frequency of feeding beef cattle is presented; most of respondents have feed their animals twice a day 35%, once a day 15%, three times a day 38.3% and ad libitum 11.6%. However the feeding of beef cattle animal depends on environment, feed availability and season of the year and it was also varied due to agro-ecology effect. The study revealed that most farmers feed their beef cattle at the morning and afternoon daily. At wet season graze once a day on natural pasture and at good weather condition feed their animal three times a day. Most beef cattle consume more feed at starting time than finishing time. This was due to developing muscle and fat deposit.

Table 6: Feeding system and feeding frequency of beef cattle in the study area

Feeding system	High land		Low land		Total	
	No=30	%	No=30	%	No=60	%
Only grazing	8	26.66	14	46.6	22	36.66
Cut-carry system	18	60.00	11	36.66	29	48.33
Both grazing and cut-carry	4	13.33	5	16.66	9	15.00
Feeding frequency						
Only once a day	5	16.66	4	13.33	9	15
Twice a day	10	33.33	11	36.66	21	35
Three times a day	11	36.66	12	40.00	23	38.33
Ad libitum	4	13.33	3	10	7	11.66

Watering sources and watering frequency of beef cattle

According to Table 6, beef cattle keepers water their animals from different sources of water. In highland areas, the respondents used river 36.66%, rain fall 16.66%, tap water 13.33%, pond 20%, well 13.33% in order of importance to drink their cattle while in lowland areas the main source of water were tap water 16.66%, river 30%, pond 23.33%, well 16.6% and rain fall 6.66%. In the overall result of the study, most of respondents their water source for cattle were River 33.33%, pond 21.66%, and tap water 16.6% in order of their importance. The variation of water source was due to during summer (wet season) there was ample water source everywhere while during dry season most Rivers, ponds and well are drying off. In closed to current result, Asrat *et al* (2013) reported Rivers, tape water and spring were important of water source for dairy cattle. Dessaligh (2015) also reported farmer had used Rivers, springs, borehole water and dam/pond and rain water as main source of water for their cattle during the dry and wet season. In lined with present study Teshager *et al* (2013) has reported the main sources of water for cattle are River, pond, and pipe line.

Table 6: Source of water and watering frequency

Source of water	High land		Low land		Total	
	No= 30	%	No=30	%	No=60	%
River	11	36.66	9	30	20	33.33
Pond	6	20.00	7	23.33	13	21.66
Rain fall	5	16.66	2	6.66	7	11.66
Well	4	13.33	6	16.66	10	16.66
Tap water	4	13.33	6	16.66	10	16.66
Watering frequency						
Once a day	15	50.00	10	33.33	25	41.66
Twice a day	11	36.66	13	43.33	24	40.00
Three times	-		-	-	-	-
Ad libitum	4	13.33	7	23.33	11	18.33

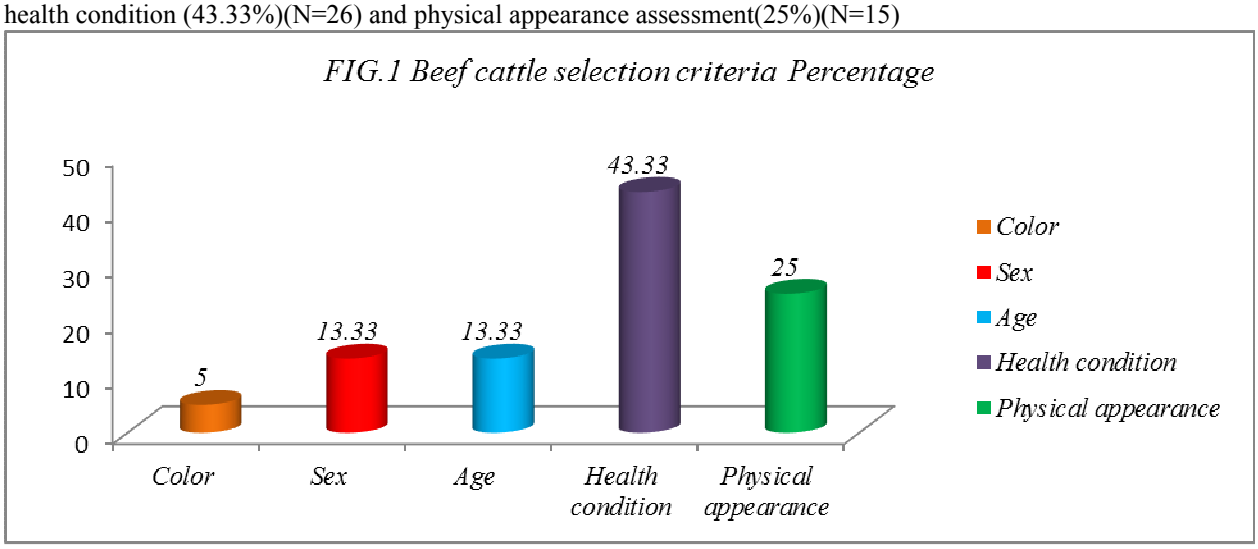
According to Table 6, that most respondents in the highland study area watered their beef animal's ones a day (50%), this was due to the fact that, there was wet air condition and where as in the low land area they watered their beef cattle twice a day (43.33%) at morning and afternoon. This was due to the rise of temperature both in environment and within the body of animal temperature animals. Basically the study showed that water requirement mostly depends on feed type, temperature of the environment, age of the animal and usage of the animal for different purposes. Similarly results have reported by Tsedeke, (2007), Asrat et al, (2013) had been described that during the dry season; almost all of the households provide water to their animals once a day except the household that live around or near watering point or rivers. However, Teshager *et al (*2013) reported that the watering frequency of cattle, twice a day, once a day and ad libtum.

Selecting method of cattle for fattening

As indicated in fig 1, in the study area beef cattle were selected mostly health condition 43.33% (N=26), physical appearance (25%) (N=15), Age (13.33%) (N=8), Sex (13.33%) (N=8) and color (5 %) (N=3). The study agreed with bovine cattle fattening training manual in Hadiya Zone in 2007, beef cattle were selected which has better body condition and medium in age. The physical appearance that to be selected have better body conformation and fast growth rate; both health cows and male animals are preferable. The age beef cattle should not be exceed from 4-6 years old, should be health condition and physical conformation includes rectangular in

shape, alert, smooth hide, wide and deep body, big and stand high, healthy and lean.

The result of study as revealed in Fig. 1, conformation and body condition relay up on visual assessment. Besides the health condition of animal is considered in the process, this study also similar with Auriol (1974) who indicated that mortality and morbidity rate are major factors for selection of beef cattle. In the same way, in the current study, most of respondent indicated that major criteria for selection of beef cattle were health condition (43.33%)(N=26) and physical appearance assessment(25%)(N=15)



Seasonality of beef cattle fattening

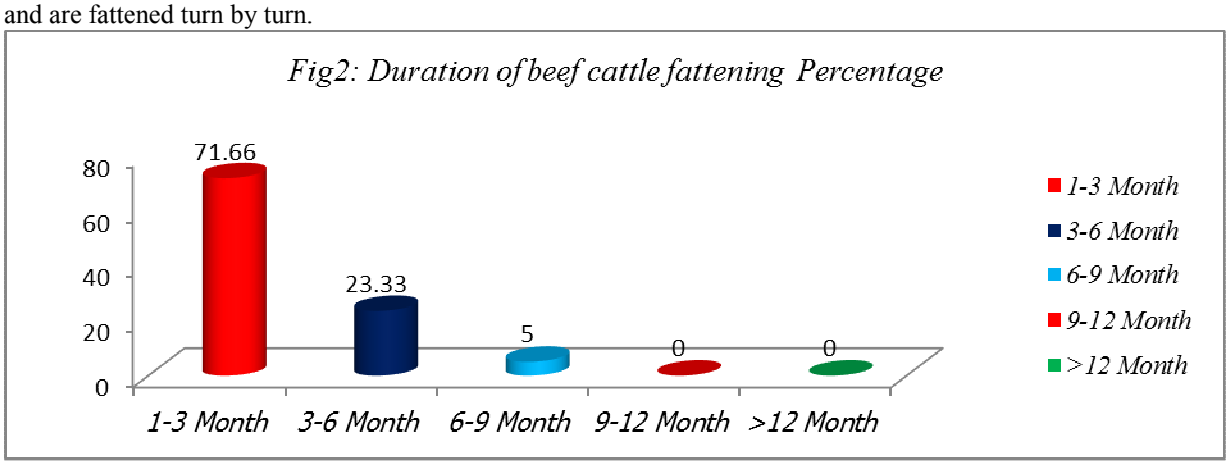
As described in the Table 7, most of the time beef cattle fattening starts from June-September (60%) and this was governed by seasonal pattern of feed availability, condition of the environment and market demand. Beef cattle fattening in study area were strategically practical with seasonal feed availability and market demand. The rest of period mentioned by respondents showed scarcity of feed availability. As a result of our findings beef cattle's were fattening throughout the year during dry season. Similar to current result Nega *et al,* (2202) and Amena *et al*, (2007) dry season was typically characterized by shortage of feed.

Table7: Beef cattle fattening season

Season of beef cattle fattening	No of respondent	%
January to March	4	6.66
April to June	8	13.33
June to September	36	60.00
October to December	12	20.00

Duration of beef cattle fattening

The result of study revealed in the fig.2, that the length of fattening period varies according to the feed availability, market demand. Most of the respondents in study area feed their cattle consume more feed at starting time. This is due fact that, the animals use for growth and further muscle development and the need of more feed become low at finishing time. Therefore, the new animals are purchased after selling finished once and are fattened turn by turn.



According to the selected respondents the number of cattle finished per cycle varies based on capital stands, feed availability and market demand. Some of respondents said that of beet cattle were fattened 1-3 months 71.66 and for 4-6 month 23.33% which exceeds the maximum length of fattening period to reach

targeted fattening level. Furthermore, finished cattle are sold at good price due to maximum consumption of beef during main holidays (Meskel) Easter, Christmas, Enkutatash). Hence, supply, demand and consumption of beef exhibit seasonal trend.

4.11 Beef cattle housing system

Beef housing system showed in Table 8, that there was usage of confining animal with other live stock (N=42) (70%) and stall 30% (N=18) unlike of fencing. The greater percentages of respondent were use commonly confined with other livestock. The numbers of respondents were use stall and confining beef cattle with other livestock have some demerit (competition for feed, diseases transmission, overcrowdings, and poor hygienic condition.

Table 8: Beef cattle housing system in the area

Types of housing	Number of respondent	Percentage
Fencing	-	-
Confined with other livestock	42	70
Stall	18	30
Purpose of housing	Number of respondent	Percentage
To minimize heat loss	14	23.33
To create warm condition	27	45.00
For close supervision	11	18.33
To keep cattle from thief & predation	8	13.33

Therefore the solution for this problem should be using stall or kept separately this is in consistence to Yisehak *et al,* (2013) who reported animal houses are too primitive and animals are not kept in a good welfare. Animal are exposed to many transmissible diseases, which is not separated from their own living house. Livestock housing is not separated may cause for ammonia and methane while manure is accumulated.

The result of study revealed in the Table 8, that beef cattle live in the house with human being. Most of the respondents indicated that the cattle lived in the same house by partition of cattle yard. Some of respondents indicated that they use separate yard to keep beef cattle from heat loss. The purposes of housing are to create warm condition, to minimize heat loss, to keep cattle from thief and predation, and for close supervision were 45%, 23.33%, 13.33% and 18.33% respectively. In similar to current study Asrat *et al,* 2013, indicated cattle are house together with family and some also in separate house. Deselegn (2015), also reported similar result all farmer house their cattle separate house not far from family house at night to protect them from cold, rain, predators and theft. However Teshager *et al, (*2013) had reported the cattle housed in separate and closed house that was roofed with grass thatched or corrugated and tin sheets majorities are tethered their animals in the open fenced beam with no roofing.

Beef cattle marketing and marketing channel

As indicated in Table 9, most of these respondent were sale their cattle after finished for small traders 73.33% (N=44) and some of them sold their cattle directly for butchers 20 % (12). some fatteners were better informed on market price and sold for small traders mostly and butcher, but other/Delala/ price 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(MOA, 1976)

Table 9: Types of beef cattle marketing system and marketing channel

System of marketing	No of respondent	Percentage
Export marketing	-	-
Broker/ delala	4	6.66
Butchers	12	20.00
Small traders	44	73.33
Types of selling season	No of respondent	Percentage
Enkutatash holiday	8	13.33
Eid al - Adha holiday	7	11.66
Meskel holiday	40	66.66
Season of market	3	5.00
Event of market	2	3.33

As indicated Table 9, selling time for finished beef cattle were sold their beef cattle during Enkutatash holidays, Meskel holiday, Eid al - Adha holiday were 13.3%(N=8), 60.63% (N=38) and 11.66% (N=7) respectively. This study agreed with Solomon (2004) report on beef cattle marketing system. The Enkutatash festivals also favorable time for their finished beef cattle due to sufficient feed resources and market demand. On the other hand season of market, during winter time price of beef cattle is good next to festival. This was due to

the farmers and other obtained capitals from farm products and other sources where as during winter season, the prices of beef cattle was low due to lack of income during this time except they are not engaged in trade. The event of marketing also affects selling time such in morning middle and evening (afternoon) the price become increase. The finished beef cattle were sold to small trades and market. The study agrees with Daniel (2008), prices of beef cattle depend mainly on supply and demand, which is heavily influenced by the cultural festivals.

The price of beef cattle is set by mostly indigenous type based on specified body conformation and weight of animal, which have preferred fast growth rate, color, sex(male beef cattle price was greater than female one) due to the reason of individual preference, some cultural taboo and horn also determined for marketing. Long horn beef cattle animal physical appearance contributes price value to be increased as respondent idea. Generally in the study area price set factor were depends on conformation and weight, breed and color of animal.

Beef cattle production opportunities

As illustrated in Table 10, there were beef cattle production different between high lands and low land areas in study area, market demand 38.3% (N=23) and comfortable environment included climate and weather condition like rain fall, temperature, humidity and the market demand showed consumers demand was high. Some opportunity were also include like feed and water availability 13.3% (N=8), road access 6.66% (N=4) in order of their importance

Table 10: Beef cattle production opportunity

No	List of opportunity	High land		Low land		Total	
		No =30	%	No= 30	%	No=60	%
1	Comfortable environments	9	30	9	30	18	30
2	Feed and water availability	4	13.3	4	13.3	8	13.3
3	Market demand	11	36.6	12	40	23	38.3
4	Road access	2	6.66	2	6.66	4	6.66
5	Professional support	2	6.66	2	6.66	4	6.66
6	Veterinary service	2	6.66	1	3.33	3	5.00

Beef cattle production constraints in the area

According to Table 11, the main beef cattle fattening production constrains were shortage of feed availability 41.66% i.e. there were lack of improved forage seed, lack of proper conservation of feed when they are in excess amount related with the supply of feed in the fluctuates in study area; lack of preservation of surplus feed in the wet season for use in dry season and surplus feed supplies is scarce and the feed quality was poor. Lack of good management 11.66%, scarcity of land 10%, drought 10%, disease 8.33% and other were also major constraints in the study area. In both high land and low land areas, major problem of beef cattle production were feed shortage and poor management problem but the share of percentage was relatively varied for both agro- ecologies. Scarcity of land was minor problem of lowland areas for the purpose grazing animal and selection problem of beef cattle and prevalence of diseases.

Table 11: Beef cattle production constraints

Major constraints	High land		Low land		Total	
	No=30	%	No =30	%	No=60	%
Drought	2	6.66	4	13.33	6	10
Disease	2	6.66	3	10	5	8.33
Feed shortage	13	43.33	12	40	25	41.66
Scarcity of land	5	16.66	1	3.33	6	10
Lack of capital	2	6.66	2	6.66	4	6.66
Management	3	10	4	13.33	7	11.66
Lack of knowledge	3	10	4	13.33	7	11.66

Beef cattle marketing constraints

As presented in Table 12, below beef cattle marketing constraints were varied between high land areas and low land areas, in highland area the road problem 30%, market distance 20% and comparatively in low land areas while the road problem was 33.33%, market distances 23.33%. Moreover both season's price variance and unequal demand supply were relatively common problem.

Table 12: Types of beef cattle marketing constraints

Types of constraint	High land		Low land		Total	
	No= 30	%	No= 30	%	No=60	%
Road problem	9	30	10	33.33	19	31.66
Market distance	6	20	7	23.33	13	21.66
Seasonal price variation	7	23.33	4	13.33	11	18.33
Unequal demand and surplus	8	26.66	9	30	17	28.33

Generally in the study area the major problems of beef cattle marketing and production were road

problem 31.66% and unequal demand and supply 28.33%. The result of present study is similar to Ayele *et al* (2003) who stated that the number of animals offered in the market is usually greater than the number of demanded, so there is usually excess supply. The study is also agrees with to Holloway and Ehui (2002) who indicated that remoteness results in reduced farm date prices to labor and capital and increased input costs. This reduced incentives to participate in economic transactions and results in subsistence rather than market- oriented production system. Sparsely populated rural areas, remoteness from towns and high transport costs are physicals barriers in accessing markets.

Conclusion

The study showed the selection criteria for beef cattle were mainly animal age, health condition, sex and physical appearance of the animal. The main purposes of keeping beef cattle were for income generation and consumption. The major feed source for beef cattle in the study area was natural grasses and crop residues. The feeding was mostly by cut and carrying system. Beef cattle fattening season and duration were mainly from June-September and 1-3 months. The common beef cattle production constraints were feed shortage, management, diseases, breed and drought. Marketing constraints were seasonal price variation and unequal demand and supply. Beef cattle marketing were practiced mainly during *Meskel* holiday and festivals. The length of fattening period varies according to type of feed availability used and market demand. Channel of marketing was mainly done by small traders.

Recommendation

- Capacity building training should be needed for farmers to create awareness about beef cattle fattening and marketing
- Empowering the farmers so that they can provide high-quality, sustainable beef cattle production and they should have access to basic production in puts, credit, and market related information.
- Adoption of improved forage by Woreda Animal and Fishery resource office, selection of forage breed, which have better adoption, proper usage of feed and over all managerial activities should be carried carefully.
- The farmers should use separate housing for fattening cattle before starting fattening to reduced feed competition by others.
- In generally there is a need from government to provide extension services with the capacity, support and physical means to expose small scale farmers to markets and by so doing, efficiency in production and marketing of cattle to achieve huge profit.

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