

Constraints and Opportunities of Beef Cattle Fattening Practices in Three Selected Districts of Gamo Zone, Southern Ethiopia

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Abstract: This study was conducted in three districts of Gamo Zone, Southern Ethiopia namely Daramalo, Boreda and Kamba from December 2018 to November 2019 to assess constraints and opportunities of beef cattle fattening practices and to identify beef cattle selection criteria used for fattening. Purposive sampling technique was employed to obtain a total of 138 fatteners. Primary and secondary data sources were used. The four types of water sources identified in the study areas were pond, river, spring and piped water. Source of water for fattening cattle was statistically significant ($P<0.05$) among study districts. The three types of house identified in the study areas were separate room in the family house, constructed house constructed for the cattle and enclosed barn with simple shed. Housing of fattening cattle was highly statistically significant ($P<0.005$) among the study districts. This might be due to animal houses not too primitive, animals are kept in a good welfare and producers housed their cattle separate house not far from family house to protect them from cold, rain, predators and theft in Daramalo district. Analysis of chi-square (χ^2) test indicated that body size, color, health and price had significant difference ($P<0.05$) among study districts while breed and age had no significant difference ($P>0.05$). The major marketing constraints that hindered the performance of the beef cattle business were 30% price fluctuation, 19% initial capital, 24% lack of market information, 10% lack of infrastructural development and 17% lack of adequate market. From the overall respondents, 35.5% of respondents argue that scarcity of feed was one of the major factors affected beef cattle fattening in the study area. It can be concluded that to improve management practice problems like water, water related problem, prevalence of diseases and parasites, constructing different water harvesting technology and adequate inputs and veterinary services should be expanded and distributed in to all kebeles in the town in order to reduce disease problems.

Key words: Constraint • Opportunity • Beef Cattle • Fattening

INTRODUCTION

The agricultural sector plays a significant role in the overall development of 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]. Cattle fattening is an emerging sector for employment and income generation for the poor, especially landless, destitute and widowed women and therefore cattle fattening can be an effective tool for poverty alleviation [2].

According to CSA [3] survey result Ethiopia has about 409, 869 beef cattle and last year 69, 830 beef cattle were slaughtered for consumption and export purpose. Even though, the country Ethiopia has a huge potential

for fattening animal there are different challenges that hampering the productivity. Among those factors' challenges associated with feed source, disease, market accesses compose the major portions. For instance, Teklehaymanot, Tsegay and Niraj [4] indicated that feed shortage was considered as the major constraint affecting the production and productivity of the fattening animals and livelihood of the farmers in and around Mekelle, Tigray, Ethiopia.

The rising population, income levels and urbanization across the developing world are driving demands for livestock and livestock products [5] However, currently, the level of beef cattle productivity is low in Ethiopia. The study affirmed that, lack of proper livestock management, feed shortage and low standards of feeding,

inadequate marketing information, especially on prices, poorly developed marketing infrastructure, weak institution, legal and regulatory framework and inadequate access to financial services for livestock rearing activities are among the major factors constraining cattle fattening industry [5, 6, 7].

In Ethiopia, there is limited information about their constraints, opportunities, challenges, economic efficiencies, production potentials and performances of beef animals under this sector [8]. Information about smallholder fattening or feedlot practices and its constraints is important for researchers, policy makers to take serious measures and suggest possible technologies to improve the productivity of the sector and hence maximize its contribution to the total Gross Domestic Product (GDP) or economy of the country. However, there is no adequate documented information on fattening practices of these smallholders' operators and their challenges in Ethiopia [9]. Therefore, it is essential to generate information regarding constraints, opportunities of cattle fattening practices. Accordingly, based on the above background, this study was designed to identify the constraints and opportunities and identify beef cattle selection criteria used for fattening in Gamo Zone, Southern Ethiopia.

MATERIALS AND METHODS

Description of the Study Area: The study was conducted in Daramalo, Kamba and Boreda districts of Gamo Zone, Southern Nations and Nationalities and People's Region (SNNPR) of Ethiopia from December 2018 to November 2019. Daramalo district consist of 23 *kebeles*. The elevation of the district ranges from 1001 to 3500 m.a.s.l. The annual rain falls ranges from 500 to 600 mm and annual temperature ranges from 10°C to 25°C. Agro-ecologically the district is 52% *Kolla*, 22% *Dega* and 26% *Weinadega*. The district has 56, 696 total human populations. The livestock population in the district is estimated to be 200, 891 cattle, 37, 160 Sheep, 33, 390 Goat, are exists in the district (Daramalo District Livestock and Fishery Development Office, 2018).

Boreda district consist of 30 *kebeles*. Agro-ecologically the district is 53% *Kolla*, 33% *Dega* and 14% *Weinadega*. The common agricultural practice of the district is mixed crop- livestock production system. The major growing crops in the study area are maize, sorghum, teff and wheat. The livestock population in the district is estimated to be 91, 464 cattle, 9, 556 Sheep and 46, 113 Goat are existing in the district (Boreda District

Livestock and Fishery Development Office, 2018). The district has 90, 348 total human populations (Boreda District Livestock and Fishery Development Office, 2018).

Kamba district consist of 38 *kebeles*. Agro-ecologically the district is 37% *Kolla*, 34% *Dega* and 29% *Woynadega*. The common agricultural practice of the district is mixed crop- livestock production system. The major growing crops in the study area are maize, sorghum, teff, barley and wheat. The district has 83, 696 total human populations. The livestock population in the district is estimated to be 172, 546 cattle, 121, 350 Sheep, 82, 354 Goat, 335, 860 poultry, 3346 mule, 5250 horse and 4250 donkeys are existing in the district (Kamba District Livestock and Fishery Development Office, 2018).

Sampling Technique: Purposive sampling technique was used to select study districts and representative households from the study areas. Potential 3 *kebeles* from Boreda, 4 *kebeles* from Daramalo and 5 *kebeles* from Kamba district with a total of 12 *kebeles* were selected purposively based on the availability of fattening animals in the *kebeles*. Households who own at least one fattening animal who are currently involved in cattle fattening practice were selected following purposive sampling technique. Forty-six households involved in cattle fattening were selected from each study district purposely with a total of 138 households. The total sample size for household interview was determined using probability proportional to sample size-sampling technique [10]. Therefore, 138 HHs were participated in the study area.

$$no = \frac{Z^2 * (P)(q)}{d^2}$$

where,

no = required sample size according to Cochran's (1977) when population greater than 10, 000

Z = standard normal deviation (1.96 for 95% confidence level)

P = 0.1 (proportion of population to be included in sample i.e. 10%)

q = 1-0.1 i.e. (0.9).

d = is degree of accuracy desired (0.05), 5% error term

Method of Data Collection: To achieve the intended objectives, primary and secondary data sources were used. Primary data was collected using semi structured questionnaire and secondary data was collected from Gamo Zone agriculture and rural development office.

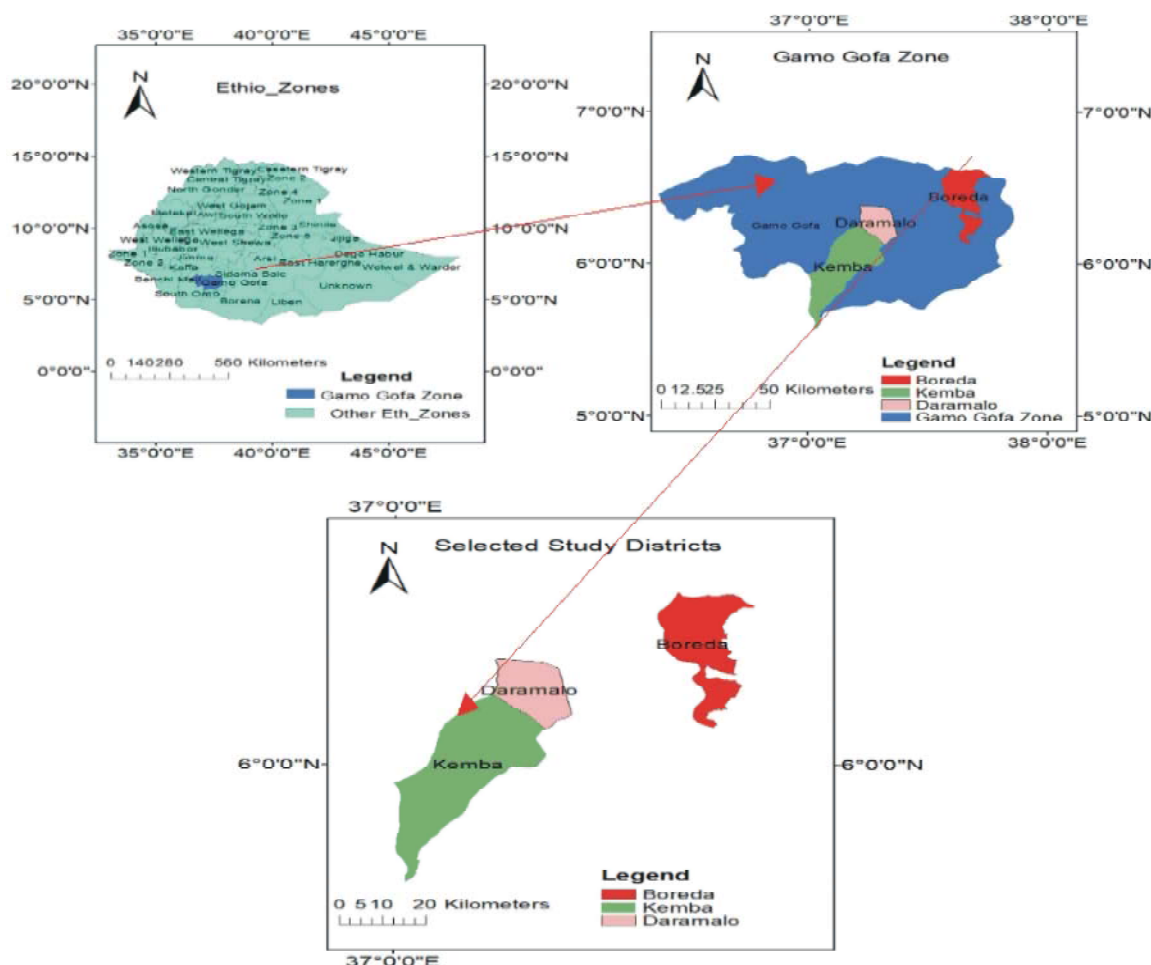


Fig. 1: Map of the study districts

Besides, personal observation was undertaken on different beef cattle management and feeding aspects during survey period to get general information on cattle fattening activities in the study areas. The questioner was administered by trained enumerators through face-to-face interview with respondents. Questionnaires was pre-tested to check its appropriateness. After pretesting, one days training was given to the enumerators how to data gathering and interviewing techniques and on how to approach respondents. The enumerators for the data collection were selected on the basis of their educational background and data collection experience, local knowledge and ability of their speaking the local language of the study area.

Method of Data Analysis: The collected data was coded, entered and analyzed using statistical package for social science (SPSS) version 20 software. Survey results were

summarized using descriptive statistics like mean, percentage and frequency and reported by using tables and figures. To make comparisons among different group's Chi square test and one-way ANOVA were employed and levels of significance was considered at $P < 0.05$.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents: Out of 138 sampled household interviewed, 97% respondents were male headed and the remaining 3% were female headed. Almost all of the household heads involved in cattle fattening practices in the study areas were male headed when compare to females. This is may be due to the nature of the sector, it needs intensive energy for proper handling of the cattle and management practices such as feed collection, feeding, cattle purchasing and

selling process. The sample chi-square test indicated that sex was statistically significant ($P < 0.05$) with the three study districts. Women were mostly involved in feeding and watering of fattening sheep and goat, cleaning of manure, collection leftover feeds from shelters and marketing of sheep and goat in the study area.

The average age of sampled household head was 44.32 years and ranged 20 to 75 years. Out of the total sampled households (138), 9.4%, 34.1%, 28.3%, 21% and 7.2% belong to the age classes 20-30, 31-40, 41-50, 51-65 and greater than 65 years old, respectively. The sample t-test indicated that age was statistically significant ($P < 0.05$) with the three study districts. A farmer with long period of experience in fattening was assumed to have a better knowledge than those who has a lower experience in cattle fattening because through time producers acquire skill about fattening than those who are less experienced.

Cattle Fattening Practice

Water Source and Watering Frequency: According to the respondent's response, the four types of water sources identified in the study areas were pond (7%), river (48%), spring (15%) and piped water (30%). Source of water for fattening cattle was statistically significant ($P < 0.05$) among study districts. According to the respondent's response, the main problem associated with water sources were water shortage during dry season (38%), distance from the water sources (36%) and not clean water (26%). The quality of water must be considered since poor water quality often contributes low production as well as health of beef cattle. The average distance from the farm to water source were take 1km, this represents energy losses for beef cattle in terms of long-distance travel from the water sources, which negatively contributes to productivity. In addition, this implies the water quality is a big problem for producers which might partially explained poor performance of beef cattle. From the results presented in Table 5, it is evident that Boreda district are making an improvement to water availability and quality by ensuring that producers have access to piped water.

In line with present study [11] has reported the main source of water for cattle are river, pond and pipe line. Basically, the study presented that water necessity typically depends on feed type, temperature of the environment, age of the animal and usage of the animal for different purposes. In similar to the result of present study, Teshager, Belay and Taye [11], Tsedeke [12], Asrat, Yilma and Nurfeta [13] households provide water to their animals once a day, twice day and ad libitum.

In line with the present study [14] reported from Hadiya zone, Southern Ethiopia, farmers in the highland area watered their beef animal's ones a day, 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 at morning and afternoon.

Housing of Fattening Cattle: The current study showed that the three types of houses which had been used to keep the fattening cattle were separate room in the family house (42%), constructed house constructed for the cattle (52%) and enclosed barn with simple shed (6%). The current finding was similar to previous reports [15] that reported three types of houses which had been used to keep the fattening cattle in Harshin Woreda of Somali Region were separate room in the family house, separate house constructed for the cattle and enclosed barn with simple shed in order of their importance. House is mostly crucial to protect animals from adverse weather condition, theft and predators.

Housing of fattening cattle was highly statistically significant ($P < 0.005$) among the study districts. This might be due to animal houses not too primitive, animals are kept in a good welfare and producers housed their cattle separate house not far from family house to protect them from cold, rain, predators and theft in Daramalo district. The current finding was nearly similar with Asrat, Yilma and Nurfeta [13] indicated that cattle are house together with family and some also in separate house. The current finding was contrary with Dessalegn [16] reported that all farmers house their cattle not far from family house. In line with Shitahun [17] reported that in Bure Woreda, Amhara National Regional State, producers used three types of houses which had been used to keep the fattening cattle were separate room in the family house, separate house constructed for the cattle and enclosed barn with simple shed in order of their importance. The current findings agree with Yisehak, Taye and Aynalem [18] reported that animal houses are too primitive and animals are not kept in a good welfare.

Selection Criteria of Fattening Cattle: According to sample respondents the criteria that they considered while selecting the animals for fattening were body size (25%), color (23%), health (21%), age (19%), price (8%) and breed (4%) in order of their importance. Analysis of chi-square (χ^2) test indicated that body size, color, health and price had significant difference ($P < 0.05$) among study districts while breed and age had no significant difference ($P > 0.05$). The current study was similar with

Table 1: Water source and watering frequency

Water source	Boreda (46)		Kamba (46)		Daramalo (46)		Total (138)		P-value
	N	%	N	%	N	%	N	%	
Pond	2	4	8	17	0	0	10	7	0.004**
River	11	24	21	46	34	74	66	48	0.000**
Spring	9	20	10	22	2	4	21	15	0.041**
Piped water	24	52	7	15	10	22	41	30	0.000**
Total	46	100	46	100	46	100	138	100	
Watering frequency									
Once a day	30	65	42	91	11	24	83	60	0.000**
Twice a day	12	26	4	9	19	41	35	25	
Three times a day	3	7	0	0	16	35	19	14	
Ad libitum	1	2	0	0	0	0	1	1	
Total	46	100	46	100	46	100	138	100	

**Significant at 5%, NS= non-significant

Table 2: Housing of fattening cattle

Parameters	Boreda (46)		Kamba (46)		Daramalo (46)		Total (138)		P-value
	N	%	N	%	N	%	N	%	
Separate room	35	76	22	48	1	2	58	42	0.000**
Separate house	11	24	23	50	38	83	72	52	
Enclosed barn with shed	0	0	1	2	7	15	8	6	
Total	46	100	46	100	46	100	138	100	

** Significant at 5%, NS= non-significant

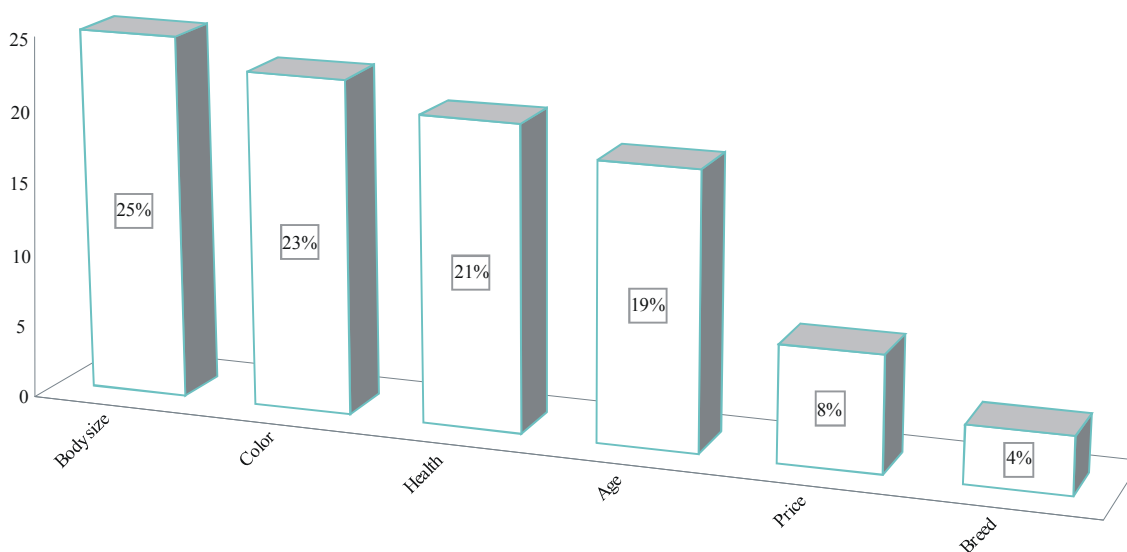


Fig. 2: Selection criteria of fattening cattle

Takele and Habtamu [19] and BOARD [20] reported that the majority of sample respondents were considered the selection criteria by the body condition of the animals. The current study was not agreed with that of the report of Belete *et al.* [21] reported that almost all traders do not take coat color as a criteria for selection of beef animals.

The selection of the animals based on those criteria could be to meet the preference of the end users and the finishing ability of the animals. According to the respondents response, body size (frame size), health and age as a selection criteria is very important since it is related to growth potential and affects the

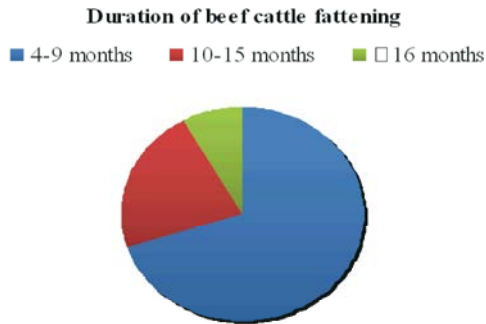


Fig. 3: Duration of beef cattle fattening

whole production system due to its influence on aspects such as the food conversion efficiency, time taken to meet the finishing period and the final quality of the product obtained. Producers not selected aged and un health cattle for fattening purpose since, they believed that aged and un health cattle take long period to be fatten and sometime the animals may not be fattened and the final users were not eager to purchase such cattle.

Age and Duration of Cattle Fattening: The average age of cattle used for fattening in the current finding was similar with Belete *et al.* [21], Shewangizaw, Zekarias and Tesfaye [22], Addisu Mekuria [23] who reported farmers fattened their draught oxen fatten mature and much older animals for short durations. The number of beef cattle finished per cycle varies based on capital stands, feed availability and market demand. According to the overall selected respondents beef cattle were fattened 4-9 months (70%), 10-15 months (22%) and > 16 months (8%). Duration of beef cattle fattening was highly significant ($P < 0.05$) among study districts. The long duration of beef cattle fattening is due to low feed offered and utilization of more energy to keep their body from cold environment. In order to minimize fattening duration, there should be an intensive high energy feeding program that makes the animals gain weight in few weeks making them ideal for beef market.

The current finding was similar with the Shewangzaw [24] who reported that duration of feeding was depend on feeding method that the cattle being fattened with pure feedlot finished within three months of feeding length. Each beef cattle producer has different resources: land, labor, capital, feed and management. To minimize duration of fattening cattle and raise beef cattle profitably, producers manage these resources to maximize returns. The present finding was contrary with the report of Takele and Habtamu [19] and BOARD [20] who reported that producers fed cattle usually for four months in Southern and Northern Ethiopia.

Major Constraints of Cattle Fattening

Major Marketing Constraints: The major marketing constraints that hinder the performance of the beef cattle business were 30% price fluctuation, 19% initial capital, 24% lack of market information, 10% lack of infrastructural development and 17% lack of adequate market. Access to domestic market information about livestock is very important for price setting. Market information system enables all participants to make well informed decision in making transactions. Access to timely market information on prices and quantities plays a crucial role in reducing the risk of losing money on market transaction.

Road transports play an important role in agricultural development. This is because it is the major means of bringing agricultural products from the farms to the marketplaces as well as to various urban people. Development of road infrastructure is imperative for agriculture and overall economic growth as also improving the quality of the products. Better roads can decrease transaction costs related with agricultural activities and in so doing have the potential to reduce the costs of acquiring inputs, to increase output prices and to permit entry into new and more profitable activities [25]. Season and fasting were the main important factors for price fluctuation. Belete *et al.* [21] reported that shortage of capital was the first constraint to cattle fattening in Amhara region of Ethiopia. The current finding similar with Yidnekachew *et al.* [25] reported that market fluctuation, lack of infrastructure and lack of market information.

Poor Infrastructure: As indicated below in Figure 4, lack of infrastructure (10%) one of marketing constraints that hinder cattle fattening business. This increases cost of renting cars to the auction areas, transportation cost of moving animal to town markets, transportation cost of moving animals to slaughter areas. The current finding similar with Kinda and Loening [26] stated that most of rural areas have mostly poor roads that hinder safe, reliable and quick transportation. The current finding was agreed with Fonteh *et al.* [27] reported that Poor pre-slaughter treatment practices such as transporting beef animals in trucks for long distances results in low carcass weights and meat quality. Moreover, lack of infrastructure causes production losses to livestock keepers due to the high cost of supplements and medicines. Rural areas have no networks for communication and internet access to get beef market news and other useful information [28].

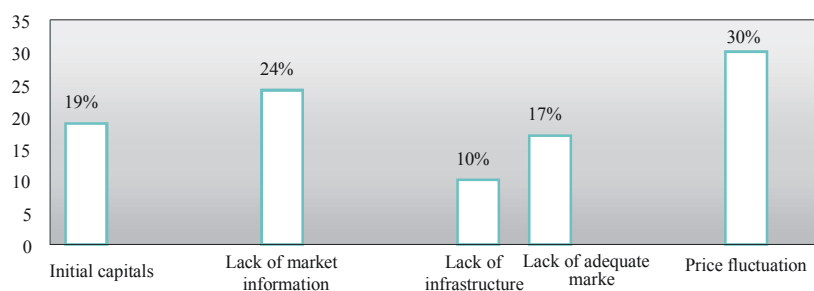


Fig. 4: Major marketing constraints for beef cattle fattening

Lack of Initial Capitals: As indicated below in Figure 4, lack of initial capitals (19%) one of marketing constraints that hinder cattle fattening business. Credit is believed to enhance the ability of the producers to withstand input constraints, thereby enhance livestock productivity. Therefore, a household who has an access to credit can be able to buy either farm implements and other inputs which can foster choice and level of crop and/or livestock to be grown or reared and, linking with the use of modern farm technology. According to the survey results, 7%, 15% of sampled respondents in Boreda and Kamba districts respectively had access to credit. This is an indication that in Kamba district participation of smallholder farmers has made a slight contribution in meeting farmers' credit needs. Access to credit is one of the factors for successful beef cattle fattening as farmers need credit to improve their investment in new and improved technologies.

Inability to access credit inhibits production and hence there is a need for the improvement of credit availability [29]. Sampled respondents took credit for beef cattle fattening were from friends, traders, non-governmental organization and micro finance institutions.

Credit has a vital role for eradication of farmer's financial limitations to invest farm activities, increasing productivity and improving technologies. Generally, credit accessibility is important for improvement of quality and quantity of animal products. [21] reported that shortage of capital was the first constraint to cattle fattening in Amhara region of Ethiopia. Credit facility was a critical problem to animal fatteners in the region which might be due to sources of financing, generally involving subsidized, low interest credit; tend not to allow small holders to borrow money unless they are organized in groups or through cooperative arrangements [30].

Market Information: Market information is an essential tool for successful transaction and obtaining reasonable price both from seller and buyer side. As indicated below

in (Figure 4), 24% of households had their own source of marketing information before selling their fattened cattle and these respondents got market information from extension agents, relatives and neighbors. The current finding in line with Teshager, Belay and Taye [11] reported that neighbors, relatives, own visit and extension agents are the main source of market information. The current finding nearly similar with the report of Yidnekachew *et al.* [25] reported that neighbors, market visit, traders and both visiting market and neighbors are the main source of market information.

Major Production Constraints: From the overall respondents, 35.5% of respondents argue that scarcity of feed is one of the major factors affect beef cattle fattening while 28% of sampled respondents response feed cost affect beef cattle fattening. About 9%, 24% and 3.5% of the respondent's response water shortage, prevalence of diseases and parasites and extension service affect the beef cattle fattening respectively. Most of the respondents' response there is scarcity of feed during the dry season. This might be lack of feed processing factories and suppliers in the area. The current finding similar with Tessema, Aklilu and Ameha [31] reported that seasonal variations in feed quality and quantities are the main limitation to animal production and cause fluctuation in productivity throughout the year, particularly in the dry season during which feed is limited.

There is less awareness in the management and exploitation of the feed resources. Storage, way of provision and gathering stages were all very poor according to the researchers' observations [32]. Inadequate and poor-quality animal feed, disease and parasite and lack of marketing infrastructure were limiting factors affecting cattle production [33]. Shortage, disease and parasite and marketing problems were the major limiting factor of cattle production in the study areas [34]. The challenges hampering production and productivity of the dairy sector are a limitation of healthcare service, feed shortage, financial problems; market-related problems and diseases [35].

Table 3: Major constraints of cattle fattening

	Boreda		Kamba		Daramalo		Total	
	N	%	N	%	N	%	N	%
Beef cattle constraints								
Feed shortage	12	26	15	33	2	4	29	21
Water shortage	7	15	6	13	0	0	13	9
Shortage of land	6	13	9	20	5	10	20	15
Feed cost	17	37	9	20	13	29	39	28
Disease and parasite	4	9	2	4	26	57	32	23
Poor extension service	0	0	5	10	0	0	5	4
Total	46	100	46	100	46	100	138	100

Table 4: Opportunities for cattle fattening

	Boreda		Kamba		Daramalo		Total	
	N	%	N	%	N	%	N	%
Opportunities								
Demand of meat by consumer	8	17	8	17	10	22	26	19
The availability of customer	3	6.5	0	0	14	30	17	12
Income growth	32	70	27	59	21	46	80	58
Trained man power	0	0	0	0	1	2	1	1
Weather condition	3	6.5	11	24	0	0	14	10
Total	46	100	46	100	46	100	138	100

According to focused group discussion, respondents' response that, there is almost no production improved forage in the study districts due to lack of knowledge about forage crops and lack of forage seeds. The present finding nearly similar to Shewangzaw [24], in north western Ethiopia reported major constraints that hinder the performance of cattle fattening activity were lack of initial capital, shortage of feed and water, insufficient land, occurrence of disease, lack of awareness. [21] reported that the critical constraints to improve dairy and beef cattle production are feed shortage, prevalence of disease, shortage of improved dairy breed, poor extension service, veterinary service, lack of working capital.

Feed Shortage: As indicated below in Table 3, Feed shortage in the study area (21%) which are lower than, 82%, 84.76% reported by Kedija *et al.* [36] in Oromia region and Duguma, Gosh and Berhane [37] in East Wollega respectively and higher than the 20%, 13.3% reported by Gatwech [38] in Gambella and Malede, Kalkidan and Maya [39] in North Gondar, respectively. None of the sample respondents didn't use supplementary feed like Furshika for fattening purpose rather they used locally available feeds which is in agreement with Takele and Habtamu [19]. This is may be due to unavailability of agro industrial by products and lack of awareness within the producers. The study was in agreement with Firew and Getnet [40] who reported that the use of agro-industrial by product in the Amhara

National Regional State as livestock feed especially for fattening and dairy were not commonly used. There were no many improved forage feeds like (elephant grass, alfalfa, sasbania and vetch and Rhodes grass) in the study areas.

From farm visit (field observation) the major problem associated with feed resources utilization for livestock feeding were collection, transportation, storage and feeding problems. Although natural pasture and crop residues were produced in large amounts, their full and efficient utilization for livestock feeding was hindered by inadequate knowledge of the producers. The feeding system was not properly utilized as stover and Desho grass was tramped and refused by the cattle while they compete to get easily palatable and leafy part of the stover and Desho grass when animals allowed feed with free access.

Water Shortage: As indicated below in Table 3, water shortage (9%) was the most common problem for beef cattle fattening. During the dry season, beef animals often travel more than 10 km to water Masikati [41]. When they reach the watering point, the animals tend to drink much water leading to reduced forage intake, which adversely affects performance [42]. Long distance walking rises energy spending and stress while building strong muscles, both of which adversely influence meat quality and tenderness. Severe water stress causes the death of animals [43], which is similar with my finding.

Disease and Parasite: As indicated below in Table 3, the prevalence of disease in the study area (21%) which are lower than the 95.5%, 86.5% and 86.66% reported by Ketema [44] in Bishofitu and Duguma, Gosh and Berhane [37] in East Wollega and Tesfaye [45] in Metema respectively. The major diseases constraining feedlot operation in the order of their importance include Lumpy skin disease, Foot and Mouth disease, Bovine Respiratory disease and digestive system disorder. Due to this fact, cattle fattener immediately after purchase or finished his plowing activity and decided to fatten, brings his cattle for injection and deworming with broad-spectrum *Anthihelmentics* [45].

Opportunities: From the overall respondents, the major opportunities that enhance beef cattle fattening were 19% demand of meat by consumers, 12% the availability of customers, 58% income growth, 1% availability of trained manpower and 10% weather condition. The present finding similar with, Hall, Ehui and Delgado [46] reported that growing population, urbanization and economic growth in Ethiopia has good opportunities for beef cattle production as demand for livestock and livestock products become increase. The domestic meat demand is estimated to rise with increasing literacy and family income. Meat intake is often an indicator of the economic status of a country or an individual. People with a higher social or economic status demand a greater amount of high-quality meat products [47].

CONCLUSION

The major marketing constraints that hinder the performance of the beef cattle business were price fluctuation, initial capital, lack of market information, lack of infrastructural development and lack of adequate market. Feed shortage was the major production constraint that hinder the performance of cattle fattening activity and the major problem associated with feed resources utilization for livestock feeding were collection, transportation, storage and feeding problems. The criteria that fatteners considered while selecting the animals for fattening were body size, color, health, age, price and breed. To improve management practice problems like water, water related problem, prevalence of diseases and parasites, constructing different water harvesting technology and adequate inputs and veterinary services should be expanded and distributed in to all kebeles in the town in order to reduce disease problems.

REFERENCES

1. Negussie, B., 2001. Borena Zone: Outcome of Small Rains Anxiously Waited. Report on a Rapid Assessment Mission, 14-24 September 1999, pp: 5.
2. Zemene, W., T. Samuel, T. Taye and J. Worku, 2016. Assessment of the Prevailing Cattle Fattening Practices in Jimma Zone, South-Western Ethiopia.
3. CSA, 2016. Federal Democratic Republic of Ethiopia Central Statistical Agency. Agricultural Sample Survey 2016/17 (2009E.C) volume II, report on livestock and livestock characteristics. Statistical bulletin 587. Addis Ababa, Ethiopia.
4. Teklehaymanot, G., T. Tsegay and K. Niraj, 2017. Assessment of beef cattle fattening practices and its challenges in and around Mekelle, Tigray, Ethiopia. *Ethiopian Veterinary Journal*, 21(1): 29-39.
5. UNIDO (United Nations Industrial Development Organization), 2012. Tanzania's Red Meat Value Chain: A Diagnostic. Africa Agribusiness and mAgro Industry Development Initiative, United Nations Industrial Development Organization, Vienna, Austria, pp: 73.
6. Pica-Ciamarra, UP., D. Baker, J. Chassama, M. Fadiga and L. Nsiima, 2011. Linking small holders to livestock markets: combining market and household survey data in Tanzania. A Paper Presented At the 4th Meeting About Statistics on Rural Development and Agriculture Households Income, Rio de Janeiro Brazil, pp: 1-18.
7. Fekadu, T., M. Urge, E. Moreda, 2016. Assessment of Traditional Cattle Fattening Practices in Hararghe Highland Parts of Ethiopia. *World Journal of Agricultural Sciences*, 12: 149-160.
8. Bezahegn, A., 2014. Small scale beef cattle fattening practices, on farm Performance evaluation and opportunities for market orientation In Western Hararghe Zone, Chiro District (M.Sc. Thesis, Haramaya University, Ethiopia).
9. Bezahegn, A., 2019. Cattle Fattening Practices in West Hararghe: Potentials and Constraints of Beef Cattle Production in Oromia Regional State, Ethiopia.
10. Cochran, W.G., 1977. *Sampling Techniques*(3rd ed.) New York: John Wiley and Sons.
11. Teshager, A., D. Belay and T. Taye, 2013. Traditional cattle fattening and live animal marketing System in Different Agro-Ecologies of Ilu Aba Bora Z one, Oromia, Ethiopia. *Glo.Vet.*, 10(5): 620-625.

12. Tsedeke, K., 2007. Production and marketing systems of sheep and goats in Alaba, Southern Ethiopia, M.Sc. Thesis. Hawassa University, Awassa, Ethiopia, pp: 174.
13. Asrat, A., Z. Yilma and A. Nurfeta, 2013. Characterization of milk production systems in and around Boditti, Southern, Ethiopia.
14. Amistu, K., M. Temesgen, A. Alemu and W. Tarekegn, 2016. Assessment of beef cattle fattening and marketing system and contribution to household food security in Lemmo Woreda, Hadiya Zone, Southern Ethiopia.
15. MoA, 1996. Ministry of Agriculture. Animal and fishery resources development main department, fattening extension manual, FLDP, Addis Ababa, Ethiopia, pp: 83.
16. Dessalegn, G., 2015. Assessment of Production and Reproductive Performance of Cattle and Husbandry Practices in Bench-Maji Zone Southwest Ethiopia.
17. Shitahun, M., 2009. Feed resources availability, cattle fattening practices and marketing system in Bure Woreda, Amhara Region. MSc. Thesis, Mekelle University.
18. Yisehak, K., TM. Taye and H. Aynalem, 2013. Characteristics and constraints of livestock in Jima Zone, Southern, Ethiopia. OAU: Nairobi.
19. Takele, T. and L. Habtamu, 2009. Traditional backyard cattle fattening in Wolayta: Systems of operation and the routine husbandry practice. *Ethiopian Journal of Animal Production*, 9(1): 39-56.
20. Bureau of agriculture and rural development (BOARD), 2004. Livestock feeding strategy manual. Bahir Dar.
21. Belete, A., T. Azage, B. Fekadu and G. Berhanu, 2010. Cattle milk and meat production and marketing systems and opportunities for market orientation in Fogera Woreda, Amhara Region, Ethiopia. IPMS (Improving Productivity and Market Success) of Ethiopian Farmers' Project.
22. Shewangizaw, W., B. Zekarias and A. Tesfaye, 2014. Assessment of cattle fattening and marketing system and constraints affecting cattle fattening in Central Southern region of Ethiopia. *Afri. J. Agri. Res.*, 9(41): 3050-3055.
23. Addisu Mekuria, S., 2016. Cattle Fattening, Constraints and Marketing System in North Western Ethiopia. *World Veterinary Journal*, 6(2): 59-65. Journal homepage: www.wvj.science-line.com.
24. Shewangzaw, A., 2016. Cattle fattening, Constraints and marketing system system in North Western, Ethiopia.
25. Yidnekachew, A., A. Asmera, M. Mesfin and E. Binyam, 2016. Assessments of market-oriented beef cattle fattening system under farmer management condition in South Omo Zone of SNNPR. *Current Res. Agri. Sci.*, 3(3): 31-45.
26. Kinda, T. and J.L. Loening, 2010. Small enterprise growth and the rural investment climate: Evidence from Tanzania. *African Development Review*, 22(1): 173-207.
27. Fonteh, F.A., N.M. Bawe, M.E. Muluh, O.W. Bessong, N.P. Tuncha and S.E. Piasentier, 2015. Pre- slaughter and carcass evaluation of indigenous cattle from the Central African Sub-Region. *Journal of Meat Science and Technology*, 3(1): 1-7.
28. Lwoga, E.T., C. Stilwell and P. Ngulub, 2011. Access and use of agricultural information and knowledge in Tanzania *Library Review*, 60(5): 383-395.
29. Nonjabuliso, S., 2011. Assessment of the role of cooperatives in smallholder dairy production and marketing in Swaziland.
30. Azage, T., G. Berhanu and H. Dirk, 2006. Input supply system and services for market-oriented livestock production in Ethiopia. IN: *Proceedings of the 14th Annual Conference of the Ethiopian Society of Animal Production (ESAP)*, held in Addis Ababa, Ethiopia, September 5-7. Part I: plenary session. ESAP Proceedings. p. 1-19. Addis Ababa (Ethiopia): ESAP. Barry P, Ejigu J (2006). Cattle in southern Ethiopia: Participatory Studies in Wolaiyta and Konso Woredas. *Farm Africa Working Papers No.*, 3: 11.
31. Tessema, Z., A. Aklilu and S. Ameha, 2003. Assessment of the livestock production system, available feed resources and marketing situation in Belesa Woreda: A case study in drought prone areas of Amhara Region. In: *Proceedings of the 10th annual conference of the Ethiopian Society of Animal Production (ESAP)* held in Addis Ababa, Ethiopia, August 22-24, 2002. Addis Ababa, Ethiopia, pp: 165-175.
32. Zemene, W., T. Samuel, T. Taye and J. Work, 2016. Assessment of the Prevailing Cattle Fattening Practices in Jimma Zone, South-Western Ethiopia, *Global Veterinaria*, 17(2): 105-113, 2016 ISSN 1992-6197, IDOSI Publications.

33. Belay, D., A. Tegegne and B.P. Hegde, 2012. Smallholder Livestock Production System in Dandi District, Oromia Regional State, Central Ethiopia *Global Veterinarian*, 8(5): 472-479, 2012 ISSN 1992-6197. IDOSI Publications.
34. Mengistu, A., G. Gelaye, G. Oda, M. Endalu and A. Wahid, 2019. Opportunity and Constraints of Cattle Production System in Three Selected Districts of Ilu Aba Bor, Zone, Ethiopia, *Global Veterinaria*, 21(2): 93-99, 2019 ISSN 1992-6197 IDOSI Publications.
35. Ahmed Ali Farah, 2018. Assessment of Major Constraints of Dairy Cattle and Its Associated Risk Factors in Mekelle City, Ethiopia, *Global Veterinaria* 20(5): 225-238, 2018 ISSN 1992-6197 IDOSI Publications.
36. Kedija, H., T. Azage, K. Mohammed and G. Berhanu, 2008. Traditional Cow and Camel Milk Production and Marketing in Agro-pastoral and Mixed Crop-Livestock Systems: The case of Mieso District, Oromia Regional State, Ethiopia.
37. Duguma, M., G. Gosh and G. Berhane, 2014. Characterization of smallholder dairy cattle production systems in selected districts of East Wollega Zone, Ethiopia, MSc thesis, Wollega University, College of Medical and Health sciences, School of Veterinary Medicine, Nekemte, Ethiopia.
38. Gatwech, T., 2012. Dairy production, processing and market system: a case study of Gambella.
39. Malede, B., T. Kalkidan and T. Maya, 2015. Constraints and opportunities on small scale Dairy production and marketing in Gondar Town. Department of Animal Production and Extension, Faculty of Veterinary Medicine, University of Gondar, Gondar, Ethiopia. *World Journal of Dairy and Food Sciences*. DOI: 10.5829/idosi.wjdfs.2015.10.2.95116. 10(2): 90-94.
40. Firew, T. and A. Getnet, 2010. Feed resource assessment in Amhara regional state. In: Ethiopia sanitary and phytosanitary standards and livestock and meat marketing program (SPS-LMM), Addis Ababa, Ethiopia.
41. Masikati, P., 2010. Improving the water productivity of integrated crop livestock systems in the semiarid tropics of Zimbabwe: an ex ante analysis using simulation modeling. Retrieved September 17, 2017, from http://www.zef.de/fileadmin/webfiles/downloads/zefc_ecology_development/eds_78_masikati_text.pdf.
42. Wright, C.L., 2007. Management of water quality for beef cattle. *Veterinary Clinics of North America: Food Animal Practice*, 23: 91-103.
43. Nardone, A., B. Ronchi, N. Lacetera, M.S. Ranieri and U. Bernabucci, 2010. Effects of climate changes on animal production and sustainability of livestock systems. *Livestock Science*, 130(1): 57-69.
44. Ketema, W.B., 2014. Assessment of dairy cattle feed resources and milk yields under smallholder program in Tropical Animal Production and Health, Addis Ababa University, Bishoftu, Ethiopia. South West Ethiopia. MSc thesis, Addis Ababa University, College of Veterinary Medicine, Debre Zeit, Ethiopia, pp: 15-17.
45. Tesfaye, M.D., 2007. Characterization of cattle milk and meat production, Processing and marketing system in Metema district, Ethiopia. MSc thesis. Hawassa University, School of Graduate Studies, Hawassa, Ethiopia.
46. Hall, D.C., S. Ehui and C. Delgado, 2004. The Livestock revolution, food safety and small-scale farmers: Why they matter to us. *Journal of Agricultural and Environmental Ethics*.
47. Kefyalew, A., 2011. Value chain assessment of beef cattle production and marketing in Ethiopia: Challenges and Opportunities of Linking Smallholder Farmers to the Markets.