

Beef Cattle Production, Management Practices and Marketing System in Gimbi District of West Wollega Zone, Ethiopia

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Abstract

The study was intended with to study beef cattle production, management practices and marketing system in Gimbi district, west Wollega zone. Four kebeles, namely, Lelisa Yesus, Chuta Giyorgisi, Enango Dembali and Chuta Qaki were purposely selected for the study and 80 households who were engaged in cattle fattening practice were interviewed. Both primary and secondary source of data were used and the collected data were analyzed using SPSS version 20. The result of the study indicated that large proportion of the respondents, 67 (83.75%) reported the sources of fattened animals were their own herd, and the rest 13 (16.25%) were oxen purchased for tillage. In the study area, none of the farmers fatten female animal. Regarding fattening frequency, 61 (76.25%) can practice a single round fattening and the rest farmers have twice experience of fattening per year on the basis of feed availability and future holidays. In the study area, the supplementary feeds provided for fattening animals were crop residues (90.41%), sugar cane top (48.55%), salts (100%), feed leftover (68.25%) and elephant grass (24.45%). River (68.75%), deep wells (23.75%) and pipe water (7.5%) were the types of water sources identified during the study period. With respect to watering frequency, majority of the respondents 72 (90%) offered drinking water for their fattening animals twice per day and the rest 8 (10%) provided three times per day, this is especially during dry season when drinking water is scarce. The types of houses which had been used to keep the fattening cattle were separated room in the family house 67 (83.75%) and enclosed barn with simple shed 13 (16.25%). Majority (76.7%) of the sample respondents were sell their fattened animals at district/zonal market and the rest (23.3%) of them were sell at farm gate. And there is no village market for beef cattle selling and buying. 72.5% of the interviewed fatteners market their fattened animals during the main holidays while about 28% during both the main holidays and non-holydays seasons. Majority (52.6%) of the household respondents get market information from their neighbors participating in beef cattle fattening, 25.4% by visiting market, 13.7% from traders and the rest was from Development Agents (DAs) and neighbors. From the study it was concluded that beef cattle production is unimproved agricultural activity undertaken which needs further work and research to move forward.

Keywords: *Beef Cattle Production; Gimbi District; Management Practices; Marketing*

Introduction

Ethiopia is one of the top possessors of cattle in Africa with an estimated population of 60.39 million [5]. Livestock is an integral part in its agricultural sector and plays a vital role in the national economy through contributing about 20% of the Growth Domestic Product (GDP), supporting the livelihoods of 70% of the population and the sub sector also account 11% of annual export earnings [11,12].

Despite the large number of livestock, there has been a decline in national and per capita production of livestock, livestock products, export earnings from livestock and per capita consumption of food from livestock [4]. The current per capita consumption of meat is 13.9

kg/year; being lower than the African and the world per capita averages, which are 27 kg/year and 100 kg/year, respectively [6]. This is due to the fact that most of the beef production is carried out under an extensive low input system and in conjunction with crop and small ruminant production, as a result of which, beef production and productivity are very low as compared to the world average. Moreover, under-development and lack of market-oriented production, lack of adequate information on livestock resources, inadequate permanent animal route and other facilities like adequate drinking water, ineffective and inadequate infrastructural and institutional set-ups, prevalence of diseases, illegal trade and inadequate market information (internal and external) are generally mentioned as some of the major reasons for the poor performance of this sector [3,14].

In the study area, though good fattening potentials associated with beef cattle production and market, there is inadequate investigation undertaken to know the beef cattle production and marketing systems. Gimbi district has a great potential and suitable climate for beef cattle production and availability of variety of crop-residues can be used as potential feed sources for fattening beef cattle. There is newly emerging cattle fattening activity under small scale farmers which needs detail study about the sector. This study is therefore an attempt to examine the existing beef cattle production, husbandry practices and marketing systems, which are pioneered for cattle fattening in the study area.

Materials and Methods

Description of the study area

Gimbi district is located at about 441 km away from Addis Ababa, the capital city of the country to the west. Geographically the district is located 9°10' - 9°17' North latitude and 35°44' - 36°09' East longitudes; covering a land area of 100,965 hectare (1009.65 km²). The area has one long rainy season extending from March to mid-October with annual rainfall ranging from 1400-1800 ml. The mean minimum and maximum annual temperature ranges between 10°C and 30°C and the elevation of the study area ranges from 1200 m-2222 m a.s.l. Mixed crop-livestock agriculture is the main stay in the area. Like to many parts of Ethiopia, the study area is endowed with significant number of domestic animals; 93,640 cattle, 46,115 sheep, 7,207 goats, 131 mule and 80,370 poultry [8].

Sampling procedures and sample size

To implement the current study, first of all, information was gathered from Gimbi District Livestock and Fishery Resources Development Office (GDLFRDO) about cattle fattening activity in each kebele of the district. Based on the information gathered, four kebeles, namely, Lelisa Yesus, Chuta Giyorgisi, Enango Dembali and Chuta Qaki were purposely selected based on accessibility, potential of cattle resources and proximate to the main road. 20 households who were engaged in cattle fattening practice were selected from each kebele and interviewed, which makes a total of 80 households.

Methods of data collection

Both primary and secondary source of data were used for this study. Primary data was collected through group discussions held with individuals who have knowledge and experience on cattle fattening practices; key informant interviews with kebeles agricultural experts and Development Agents and field observation. And secondary data was collected from public organization, government agencies and other documented materials.

Data analysis

The excel computer software was used to store data. The data collected were analyzed using SPSS statistical software (SPSS for windows, release 20, 2011). Descriptive statistics such as percentiles and frequencies were used to summarize data as required.

Results and Discussion

Socio-economic description of sampled households

Out of the sampled populations (80) of the interviewed households, 98% and 2% were male and female, respectively. All household respondents (100%) participated in the study were reported that women's alone were not involved in cattle fattening practices. For the

most part, women have no role in tying and marketing (selling and purchasing) of fattening cattle with the exception that they were involved in the preparation of ration, feeding, watering and manure management. This might be due to the fact that cattle fattening requires enormous and aggressive energy and the sector is labor-intensive which demand high labor inputs during the period of operation which makes it difficult for females. The current finding agrees with [1] who similarly reported the female headed cattle fatteners by themselves were not ready to run the sector alone, they needs males support with them because of the aggressive nature of fattening cattle.

With respect to the educational status, out of the household heads included in the current study, about 39.5% were illiterate, 13.5% able to read and write and the rest 33% and 14% had with an education level of primary and high school, respectively suggesting that illiteracy rate is higher which has impact on fattening practice. Similarly [7] reported that in Harshin District of Somali Regional State the highest proportion of the respondents were illiterate (55.6%) followed by able to read and write (33.3%) and primary school (11.1%) (Figure 1).

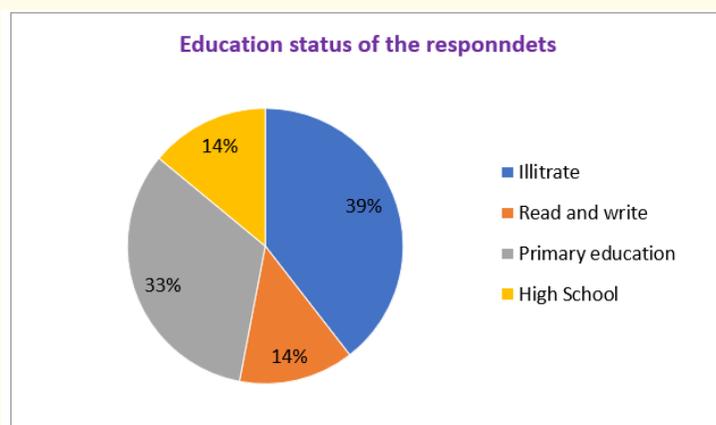


Figure 1: Education status of the respondents in the study area.

Experience of farmers in beef cattle fattening

The experience of farmers on beef cattle fattening was helpful for management of the beef cattle, in knowing marketing time and generally for profitability of the business. The result of the survey (Table 1) indicated that more than half (61.25%) of the respondents in the study area had less than 5 years of fattening experience. The beef farmers had longer fattening experience were smaller in number. This might be due to the profitability of fattening activity sometimes increasing and sometimes decreasing and beef cattle fatteners face capital shortage.

Experience in beef fattening (Year)	Frequency	Percentage
1 - 5	49	61.25
6 - 10	26	32.5
11 - 15	4	5
16 - 20	1	1.25
Total	80	100

Table 1: Experience of Respondents in beef cattle fattening in the study area.

Beef cattle production and marketing system

Sources of animals and duration of fattening

In the assessment of duration of fattening, majority of the respondents 72 (90%) fatten their animals in three month; and the rest 8 (10%) of the farmers responded they fatten their animals in four month depending on the availability of feed resources. The result disagree with the finding of Traditional Cattle Fattening System in Ilu Aba Bora Zone of Oromia regional state, Ethiopia, that showed the minimum cattle fattening period was 4 months [2]. The result of the current study indicated that large proportion of the respondents, 67 (83.75%) reported the sources of fattened animals were their own herd. And the rest farmers reported as the source of the fattened animal were oxen purchased for tillage and fattened after tillage. Majority of the farmers 61/80 (76.25%) can practice a single round fattening per year and the rest farmers have twice experience of fattening per year depending on the availability of feed sources and considering the holidays of the year. This is harmony with the finding of [2] in Ilu Aba bora of western, Oromia state. In the study area 100% of the respondents fatten male cattle and none of the farmers fatten female animal.

Feed and feeding system of fattening animal

The study area had huge potential to supply dry season feed resource as crop-residues and during the early dry season as stubble grazing from crop land, and also natural pasture from the communal grazing land. However, livestock production was constrained from getting year round feed supply both in quality and quantity across the study area. This may be due to failure of feed management and inappropriate feeding system.

In the study area, farmers have experiences in supplementing locally available feed resources. All respondents responded that major feed resources for the fattening animals are crop residues and natural pastures. As pointed out in table, supplementary feeds for fattening animals were different types of crop residues (90.41%), sugar cane top (48.55%), salts (100%), feed leftover (68.25%) and elephant grass (24.45%). Farmers in the study area do not feed their animals with silage; urea treated crop residues and different types of concentrate feed resources. In the current study area, the overall performance of the animal is very poor which resulted from feed shortage such as poor quality of grazing lands that need for greater knowledge on the use of crop residues and poor availability of concentrates and feed supplements when needed.

The previous study reported by [2] in Harshihin district Somali region, extremely not agreed with the current study among the major feeds given for the fattening cattle, is natural pasture (62.2%), grain by product (17.6%) and crop residues (23.2%) (Table 2).

Parameter	Lelisa Yesus (n = 20)	Chuta Giyorgisi (n = 20)	Enango Dembali (n = 20)	Chuta Qaki (n = 20)	Mean (N = 80)
Method of feed provision					
Stall feeding	14.5	22.75	17.75	19.5	18.62
Grazing only	0.00	0.00	0.00	0.00	0.00
Stall feeding and grazing	85.5	77.25	82.25	80.5	81.38
Feeds used for supplementation					
Crop residues	86.5	95.5	85	94.65	90.41
Sugar cane top	77.75	20	46	51.25	48.75
Salts	100	100	100	100	100
Feed leftover	65.25	69	89	49.75	68.25
Improved forage (Elephant grass)	15.55	33	27.75	21.5	24.45

Table 2: Types of feed and feeding systems of fattening animals in the study area (%).

As indicated in the above table, majority of the respondents (81.38%) provide both basal and supplementary feeds in the form of stall feeding and grazing systems whereas only 18.62% of the fatteners give in the form of only stall feeding. The current finding is not in line with the report of [9] who reported farmers in the central southern region of Ethiopia provide both basal and supplementary feeds to their animals in the form of stall feeding.

Water sources and frequency of watering

According to the respondents’ response, the types of water sources identified in Gimbi district were river (68.75%), deep wells (23.75%) and pipe water (7.5%) indicating that there is free access to water both during wet and dry seasons.

With respect to watering frequency, majority of the respondents (90%) offered drinking water for their fattening animals twice per day and the rest provided three times per day, this is especially during dry season when drinking water is scarce (Table 3). And as the focus group discussion indicated during the wet seasons since there is enough drinking water and different feed resources contains ample moisture the farmers in the study area provided water for their animals once per day. The current finding is in contrast with the report of [10] that in Bure Woreda, Amhara Region, Ethiopia about 72% and 28% of the respondents offered drinking water for their fattening cattle twice and three times per day, respectively.

Variable	Frequency	Proportion (%)
Sources of water		
River	55	68.75
Deep wells	19	23.75
Pipe water	6	7.5
Frequency of watering		
At least once/day	80	100
Twice /day	72	90
Three times/day	8	10

Table 3: Water sources and watering frequency in the study area.

Housing system

The use of housing or shelter is one of the most important components of husbandry in livestock production. This is because housing helps to protect animals from extreme weather condition on top of its suitability for proper feeding. Thus, the current study showed that, the types of houses which had been used to keep the fattening cattle were separated room in the family house 67 (83.75%) and enclosed barn with simple shed 13 (16.25%). During the study period none of the farmers were used separated house constructed for the cattle. In the study area, due to the fact that availability of optimum climatic condition which is suitable for cattle fattening even with open area provided, the effect of housing on the fattening animal is negligible. The previous study reported by [13] is not in line with the current finding.

Beef marketing

Marketing channels and transportation

As Focus group discussion and key informant interview indicated in the study area, farmers-to-farmers, farmers-to-consumers, farmers-to-traders and farmers-to-butchers are the available beef cattle marketing channels. Out of the total respondents, majority (76.7%) of the sample respondents were sell their fattened animals at district/zonal market and the rest (23.3%) of them were sell at farm gate. Those farmers selling their animals at farm gate were disabled household, elderly people and widows. In the study area there is no village market for beef cattle selling and buying. The current finding is in agreement with the report of [15] in South Omo Zone of SNNPR.

With respect to method of transportation, fattening cattle were trekked on foot while purchasing and selling. Marketing of fattening cattle and other cattle took place at the same open area by mixing together with no any shade and separation structure. This may be sympathetic for disease transmission from infected to healthy cattle and even it causes human health problem. This finding is agreed with the finding of [7] in Harshin District of Somali Regional State, Ethiopia.

Season of marketing and market information

Out of the total respondents, 72.5% of the interviewed fatteners market their fattened animals during the main holidays while about 28% during both the main holidays and non-holydays seasons. In the zone in general and in the study area in particular, there was no cooperatives that perform fattening and marketing of animals.

Market information is imperative to minimize information breach and ambiguities that exist in livestock marketing. It is needed by producers in their planning of production and way of marketing the product. Majority (52.6%) of the household respondents get market information from their neighbors participating in beef cattle fattening, 25.4% by visiting market, 13.7% from traders and the rest was from Development Agents (DAs) and neighbors.

Conclusion and Recommendation

The study results indicated that the overall beef cattle production, management practices and marketing systems were unimproved because of the following reasons:

- It is mainly depends on local available feed sources as common supplementary feed sources and the use of agro-industrial by-products is limited due to its availability and high cost.
- During the study period none of the farmers were used separated house constructed for the fattening animals
- The producers were not benefited from their fattened animals due to cattle marketing system was not well developed in the area; and there was no cooperatives that perform fattening and marketing of animals.

On the bases of the empirical findings of this study, the following recommendations are forwarded in order to set improvement strategies on the sector:

- Awareness creation of the farmers through training on treating of crop residues, developing improved forage Variety.
- There should be adaptation and introduction of improved house and housing system
- There should be establishment of market oriented beef cattle fattening cooperative association and infrastructural development.
- Further work and research is needed to develop effective and efficient beef cattle production, husbandry practices and marketing in collaboration of different stakeholders.

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Bibliography

1. Ahmed K., *et al.* "Cattle selection criteria and fattening practices in urban and peri-urban Kebeles of Dessie and Kombolcha Towns, Ethiopia". *Online Journal of Animal and Feed Research* 7.2 (2017): 29-37.
2. Ayalew T., *et al.* "Traditional Cattle Fattening and Live Animal Marketing System in Different Agro-Ecologies of Ilu Aba Bora Zone, Oromia, Ethiopia". *Global Veterinaria* 10 (2013): 620-625.

3. Belachew H and Jemberu E. "Challenges and opportunities of livestock trade in Ethiopia". Paper presented at the 10th annual conference of Ethiopian Society of Animal Production (ESAP), Addis Ababa, Ethiopia (2002).
4. CSA (Central Statistics Authority). "Statistics Report on Farm Management Practices, Livestock and Farm implements". Part II, Addis Ababa, Ethiopia 1 (2013):14-15.
5. CSA. Agricultural sample survey report on livestock and livestock characteristics. Addis Ababa, Ethiopia (2017/18).
6. FAO (Food and Agriculture Organization of the United Nations). Production year book. Rome, Italy (2009).
7. Fikru S. "Assessment of Cattle Fattening and Marketing Practice in Harshin District of Somali Regional State, Ethiopia". *Advances in Dairy Research* 3 (2015): 137.
8. Gimbi District Livestock and Fishery Resources Development Office GDLFRDO Annual Report (2017).
9. Shewangizaw W, *et al.* "Assessment of cattle fattening and marketing system and constraints affecting cattle fattening in Central Southern Region of Ethiopia". *African Journal of Agricultural Research* 9.41 (2014): 3050-3055.
10. Shitahun M. "Feed Resources Availability, Cattle Fattening Practices and Marketing System in Bure Woreda, Amhara Region, Ethiopia". M.sc. thesis. An MSc. thesis submitted to the School of Graduate Studies, Mekelle University (2009): 120.
11. SPS-LMM. Trade Bulletin Issue I. Focus on Ethiopia's meat and Live Animal Export (2010).
12. Peters KJ and Thorpe W. "Trends in On-Farm Performance Testing of Cattle and Sheep in Sub-Saharan Africa". International Livestock Centre for Africa, Addis Ababa, Ethiopia (1989).
13. Tesfaye M. "Assessment of Beef Cattle Production, Management Practices and Marketing System in Lume District Shoa Zone, Ethiopia". MSc. Thesis. Hawassa University, Ethiopia (2016).
14. Yacob A. "Critical issues impacting livestock trade in Kenya, Ethiopia and Sudan". Paper presented at the 10th annual conference of Ethiopian Society of Animal Production (ESAP), Addis Ababa, Ethiopia (2002).
15. Yidnekachew A., *et al.* "Assessments Of Market Oriented Beef Cattle Fattening System Under Farmer Management Condition In South Omo Zone of Snnpr, Southern Agricultural Research Institute, Jinka Agricultural Research Center, Ethiopia". *Current Research In Agricultural Sciences* 3.3 (2016): 31-45.

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