

CHALLENGES AND MARKET OPPORTUNITIES OF CATTLE FATTENING AROUND GONDAR TOWN, ETHIOPIA

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ABSTRACT: A study was conducted to assess cattle fattening opportunity, challenges and marketing system from January to May, 2017. The primary data was collected from purposively by interview in selected 50 cattle fattener households. According to the respondents, information color was the major selection criteria for fattening purpose with the proportion of 28% red coat and 10% for bulla (mixed color), 8% for white and 44% for black colors, whereas castration of animals was another fattening criterion for in the study area. Accordingly, about 6% of the respondents were fattened the castrated animals while the remaining 94% were the uncast red bulls. Almost all respondents indicated that concentrate (10%), roughage (8%) and both concentrated and roughage feeds (82%) were the used feed sources for fattening purpose. Deciding finishing period of fattening cattle in the study area were based on live weight change (58%), by calculating feeding length (4%) and 38% of the respondents were used both. Market information is a crucial issue to reduce information gaps and uncertainties that existed in the livestock sector. The price of fattening cattle depends on weight and age of the animals. Lack of capital (40%) was the main constraint to begin cattle fattening and other constraints were shortage of feed and water, insufficient land, occurrence of disease and lack of awareness in order of importance 26.67%, 16.67%, 10%, 6.67%, respectively. And the opportunity of the area is also livestock access, meat demand of people increase and butchers house. Therefore, from the present study, it can be concluded that cattle fattening in Gondar town is one of the potential strategy to improve the livelihood of the family and had a good potential of market flow.

Keywords: Cattle Fattening, Constraint, Opportunity, Challenges, Opportunity

ORIGINAL ARTICLE
 pii: S222877011800008-8
 Received 04 Aug. 2017
 Accepted 20 Apr. 2018

INTRODUCTION

Globally beef and veal production is forecast at reached about 59.0 million tons (USDA, 2016). Since in the world, meat production is anticipated to record a modest expansion in 2015 to 318.7 million tones, 1.3 percent, or 4 million tons (Belachew, 2004) growth in of meat trade is projected to decelerate compared to the past decade. Globally almost 11% of meat output will be traded; Ethiopia is endowed with largest livestock production which ranks first in Africa and tenth in the world which has much to gain from the growing global markets for livestock products (CSA, 2013). Livestock become the integral part of Ethiopia's agricultural sector and plays a vital role in the national economy.

At present, livestock contributes 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 (Ministry of Economic Development and Cooperation, MEDC, 2010). According to the report of Bureau of Finance and Economic Development of Amhara Region (BoFED, 2004), the agricultural sector in the Amhara region contributed nearly 64% to the regional GDP between the periods 1994 to 2001. It is also known that Ethiopia is characterized by a high livestock population with low productivity of animal products, in terms of conventional products such as meat

and milk. 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 (CSA, 2013).

Global meat trade is forecast to expand at a moderate rate of 1.7 percent in 2015, to 31.2 million tones, a significant slowdown from the 3.1 percent registered last year (Belachew, 2004). Meat production and consumption is important in the Ethiopian economy and ruminants contribute over 3.2 million tons, representing over 72% of the total meat production (Belete et al., 2010). Even if, the Cattle population in the majority of tropical country is higher, there is a strong unsatisfied demand, due to the increment of population growth in the majority of tropical countries, for milk and meat (FAO, 2015). However, the actual consumption is seriously restricted by the low purchasing power of the majority of the consumers, for whom retail prices are already too high. At the other extreme, the producer is in a difficult position and the course taken, notably for beef, does not allow to envisage the introduction of more intensive techniques, the only ones which would enable an increase in production when the limits of expansion of the pasture area are reached (Azage and Alemu, 2008).

According to MOA (1996) report, in Ethiopia there are three different types of beef fattening systems. Those are traditional, by-product based fattening and Hararghe fattening system. Each of the production systems had their own characteristics and had positive and negative impacts. Formally, Ethiopia exports approximately 200,000 livestock annually (Belachew, 2005). This is significantly higher than the annual official exports of cattle (12,934 head), sheep (13,554 head) and goats (1,247 head) between 1998 and 2003 (Belete, 2006). In Ethiopia, recent studies estimated that annual illegal flow of livestock through boundaries reaches as high as 320,000 cattle (Belete et al., 2010). This being the potential for export, the actual performance has remained very low, leaving most (55 to 85%) of the projected livestock off take for the unofficial cross-border export and the domestic market. There are a number of challenges and negative impacts which limits profitability of beef cattle production systems in Ethiopia.

Information on production system, marketing and constraints of beef cattle production in the study area are very rare. In north Gondar there was estimated to have less supply of crop-residues, there may be mishandling and lack of awareness about crop-residue improvement (Bureau of Agriculture and Rural development, Board, 2004). As a result, utilization efficiency of the residues was low. Lack of proper selection of fattening cattle, fattening practice, lack of market information and also poor managements in relation to feeding system, healthcare, housing etc. reduced the performance of cattle fattening (Board, 2004). Hence, the producer may not get reasonable benefit from their fattening activity unless appropriate improvement strategies have to be introduced. In addition to this, detail studies on sources of feed available for cattle fattening, constraints and marketing system of cattle in the area was not further studied, therefore the specific objectives of the research was to assess the major challenges of cattle fattening in and around Gondar area and to identify market opportunities and constraints of cattle fattening in the study area.

MATERIALS AND METHODS

Description of the Study Area

The study was conducted in and around Gondar town of Amhara Region State, Ethiopia started from March to May, 2017. The area is located at a distance of 737 km away from Addis Ababa and North West of Amhara region. The area lies between an altitude of 12o35'60"N and longitude of 37o28' 20"E and has an elevation of 2300 m.a.s.l. Gondar has a varied landscape, dominantly covered with ragged hills and plateau of land formations. The annual average temperature and rain fall were 19.70° and 1772 mm respectively which could be categorized under mid highland climatic zone. The area is also classified mainly in to two seasons, the wet season, ranging from June to September and the dry season extended from October to May (CSA, 2000).

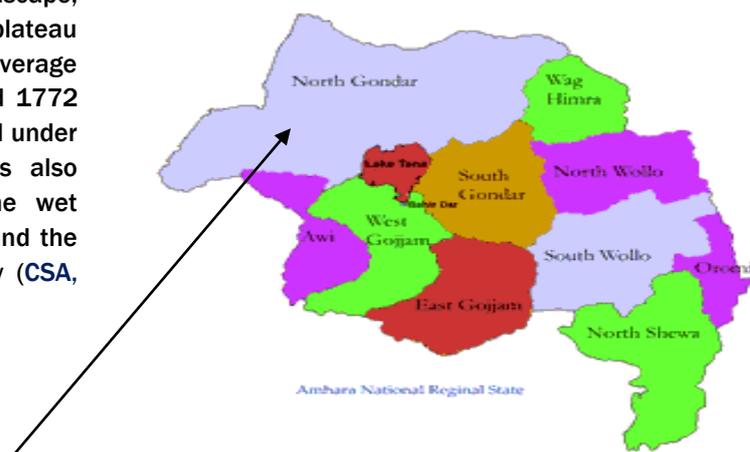


Figure 1. Map of North Gondar town indicated as the study area on the map of Amhara regional state

Data collection and sampling techniques

Primary data was collected from the respondents using a semi structured questioner on purposively selected peasant associations (PA's) in and around Gondar area. A total of 50 respondents were purposively selected during the survey and the data obtained from the survey was managed in excel spread sheet for further analysis. Additional information was collected from of secondary data was also collected using district livestock development agency office.

Data Management and Statistical Analysis

The data was managed in excel spread sheet and transferred in the statistical software with Statistical package for social science (SPSS) version 22 software. Simple descriptive statistics like frequency and its distribution and percentages, mean separation, chart analysis and important procedures were employed during the analysis of the primary and secondary data of the research outputs.

RESULTS AND DISCUSSION

Socio Economic Characteristics of the House Hold

Socio economic characteristics of the house hold is presented from (Table 1). According to the present study almost all respondents 100% were with the fixed or sub effect of sexes. Whereas the overall proportion marital status of the community in the study area were married, single and divorced with the frequency of 66, 26 and 8%, respectively. Area was married and among them 100% of males were the responsible person on fattening activity. 27% of fatterer participants were between the ages of 36-45 yrs and 46% of respondents their educational level were elementary school. The average age of the households involving on fattening practices were similar with that of MEDC (2002) which was the average age of the fatteners involving on fattening in a range from 36-45 yrs old.

Cattle fattening practice and selection criteria In the area

The research result depicted that, from the total household respondents 19 (38%) were select the Fogera breed or Fogera type for fattening while others used borane 21 (41%) and exotic 13(26%),other breeds are 15(30%) as fattening cattle of which, coat color were also used as preference that was red coat color14 (28%) cattle for fattening purpose and bulla (mixed color) 5(10%), white 4(8%), black were 22 (44%), other 5(10%) respectively. Castration of animals was also another criterion for fattening in the study area. Accordingly, 6% of the respondents fatten castrated animals while the remaining 94% of the respondents were fattening the uncastrated bulls (Mohamedsaleem and Abate, 2010). Cattle Fattening, Constraints and Marketing System in North Western Ethiopia are similar with our finding. And type of breed used for fatterer is Fogera, Borena ,exotic, and other an mentioned breed 38%, 6%, 26% and 30% respectively. According to the finding of the present study one of the criteria's of fatteners to select animals before fattening were based on the animals coat color however, this criteria's were not agreed with that of the report of Belete et al. (2010) almost all traders do not take coat color as a criterion for selection of beef animals.

Phenotypic characteristics and breed preferences for fattening

The research result showed that, 24 (38%) of the respondents was selected Fogera breed for fattening where as other few 8 (6%) used Borena breed while 18 (26%) of the respondents was used exotic (cross bred) cattle this may be the farmers found in the vicinity of the fattening area may have the experience of using artificial insemination or crossing with other exotic animal breed. the result depict that, 47 (94%) of the fatteners were used uncastrated animal while, few 3 (6%) of them was used castrated cattle for fattening, this might be due lack of awareness about the difference in feed conversion efficiency of castrated and none castrated bulls in which castrated animal has high in body conversion efficiency than none castrated bulls during the feeding process. The majority of cattle fatteners have the experience of selecting color preference of which, 22 (44%) of the owners prefers black animal for fattening while the second preference 14 (28%) was red coat color, these might be due to either the dominant color in the market area were black and red in color or market price for those color might be relatively inexpensive.

Feed Sources and dry matter in take

The major feed sources which were used for cattle feeding for fattening in the study area were found to be both concentrate and roughage 41 (82%) while, sole feed contribution was 5 (10%) and 4 (8%) concentrate and roughage feed respectively, while, the sources of drinking water was natural river water accounted 50(100%) in the research site. Again, the research findings depicted that, the dry matter intake of the cattle ranges from 13-14 (10%), 15-16 (54%) and greater than 16 kg (36%) were found correspondingly.

Methods to decide finishing period of fattening cattle

The research result depicted that, the market decision after finished the cattle were showed that, 2 (4%), 29 (58%) and using all the 19 (38 %) were employed the feeding length, live weight and both were found to rich to the market for sell. while, the finished period of the fattened cattle was ranged from only three month. and between three and four month were found to be 37 (74%) and 13 (26%) of the respondents finished their animal and supply to the market for selling respectively.

The present findings has in agreement with that of the research result, [Takele and Habtamu \(2009\)](#) and [BoARD \(2004\)](#) who reported that cattle feeders fed their animal usually for four months in southern and northern Ethiopia, respectively. However, this study was in contrast with that of [Tolera and Abebe \(2007\)](#), farmers in east Ethiopia fed cattle for more than one year which was also significantly exceeds with the average fattening period in Southern parts of Ethiopia.

Market information for fattening cattle

The price of fattening cattle depends on weight and age of the animals. Hence, fattening more closely resemble to fattening of culled cows, however, the fattener decide the end of finishing period of fattening cattle by considering rate of live weight change in the study area. However this was in agreement with the findings of [Alemayehu \(2002\)](#). Market information is crucial to reduce information gaps and uncertainties that exist in the agricultural sector. It is required by producers in their planning of production and way of marketing the product then in the present study all fatteners have market information. market price according to sample respondents, average maximum and minimum price for fattened cattle in the study area was 46% of respondents sold their fattened cattle on average price of (17501-18500Etbr), 32% (16501-17500Etbr), 18% (18001-19500Etbr), 2% (15000-16500Etbr) and 2% (19501-21000Etbr) respectively. And the price is determined by both the sellers and buyers negotiation, and price fluctuations were present for all respondents due to the cause of holyday throughout the year. All the fattened cattle were sold to Addis Abeba due to the reasons embargo of Sudan trade. And for whom to sell were 8% local buchers and 92% for whole sellers.

Major constraints cattle fattening in the study area

The research result showed that, a significant variation was observed between feed and water shortage which were 19 (38%) and 13 (26%), while other problems like lack of water, market, feed, land, credit and extension service) accounted 18 (36%) of the total respondents correspondingly. The bottle neck for livestock production in the study area become feed shortage and the finding was clearly indicated due to human population increase in alarming rate and competition with arable land in the study area become high.

The present study was similar with the finding of [Belete et al. \(2010\)](#) reported that the critical constraints to improve dairy and beef cattle production in the district were feed shortage, high disease prevalence, shortage of improved dairy breeds, poor extension service, Artificial Insemination (AI) and veterinary services, lack of working capital, marketing problems for dairy and beef products during the long fasting periods, lack of market information system and lower purchasing power of the local consumers in Amhara region of Ethiopia. However, it was in contrast with [Getnet \(2003\)](#) reported that feed quality and quantity is the main limitation to animal production in Ethiopia.

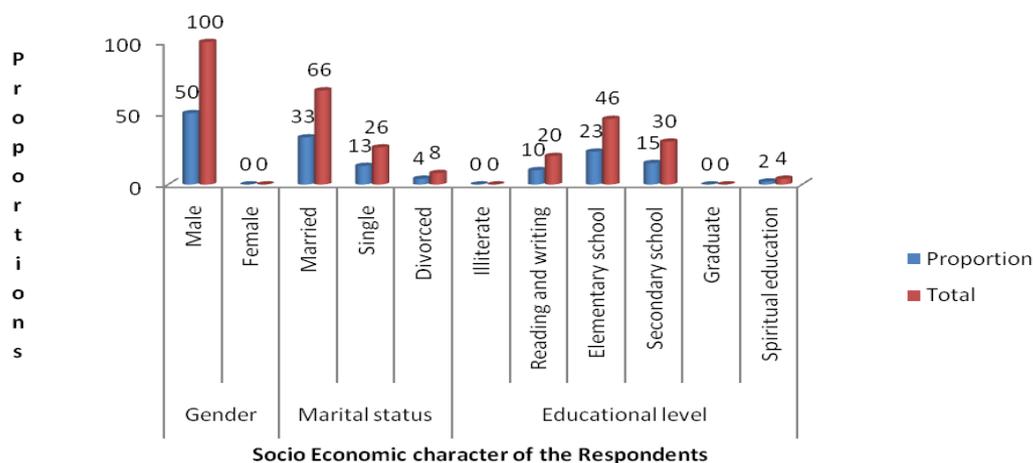


Figure 2. Socio-demographic characteristics of the respondents in the study area

Table 1 - Preferable Selection Criteria for Beef cattle fattening

Major Factors	Preferred Issues	Frequency	Percent
Type of breed	Fogera	24	38
	Borena	8	6
	Exotic	18	26
	Total	50	100
Type of cattle fattened	Castrated	3	6
	Un castrated	47	94
	Total	50	100
Type of color preferred	White	4	8
	Grey/Bulla	5	10
	Black	22	44
	Red	14	28
	Other	5	10
	Total		100

Table 2 - Major source of feed and dry matter intake

		Frequency	Percent	Mean	Std.dev
Source of feed	Concentrated	5	10	2.72	0.64
	Roughage	4	8		
	All	41	82		
	Total	50	100		
Amount of feed per day in kg	13-14	5	10	3.26	0.633
	15-16	27	54		
	>16	18	36		
	Total	50	100		
Source of water	Rivers	50	100	2	0

Table 3 - Market decide and finishing period for fattening cattle

		Frequency	Percent	Mean	Std.dev
Market decide	Using feeding length	2	4.0	2.72	1.031
	live-weight change	29	58.0		
	All	19	38.0		
	Total	50	100.0		
Finishing period	Three month	37	74.0	2.52	0.886
	Three to four month	13	26.0		
	Total	50	100.0		

Table 4 - Market opportunity on fattening cattle

	Market area	Frequency	Percent	Valid Percent	
Marketing place	A/Ababa	50	100.0	100.0	
Customers	Buchers	4	8.0	8.0	
	whole seller	46	92.0	92.0	
	Total	50	100.0	100.0	
Average price	15000-16500	1	2.0	2.0	
	16501-17500	16	32.0	32.0	
	17501-18500	23	46.0	46.0	
	18501-19500	9	18.0	18.0	
	19501-21000	1	2.0	2.0	
	Total	50	100.0	100.0	
Price fluctuation	Yes	50	100.0	100.0	
	no	0	0	0	
Criteria to purchase	Sex	Male	39	78.0	78.0
		Female	0	0	0
	Age	Adult	7	14	14
		Young	4	8	8
Total		50	100.0	100.0	
Market information	Yes	50	100.0	100.0	
Determine the price	Negotiation	50	100.0	100.0	
Price difference	Yes	50	100.0	100.0	

Table 5 - Constraints of cattle fattening in the area

Major problems	Frequency	Percent	Percent
Shortage of water	13	26	26
Shortage grazing land	19	38	38
Lack of water, market, feed, land, credit and extension service	18	36	36
Total	50	100	100

CONCLUSION

The overall results of the present study showed that the major occupation of households in the study area was depending on livestock production. Fatteners using oxen for fattening purpose are, black coat color and uncastrated. The feed sources used for cattle fattening are bean straw, nuge cake, chick pea, wheat bran, barely straw and teff straw, maize and hay. The major constraints for fattening practices is lack of initial capital, shortage of feed and water, land shortage, occurrence of disease and lack of awareness. Generally, cattle fattening practices is one means of household livelihood improvement Gondar town. Based on this information, it is recommended that, the government should give due attention on market channels of fattened animals in Gondar town. Extension policies and strategies on fattening practices, feed improvement strategies, credit service, training and extension service (advice on beef selection, feeding, health care and market information well organized stake holder) and further researches on reproductive performance of fattening cattle and carcass quality related to feeding in Gondar town should be conducted.

DECLARATIONS

Authors' Contribution

I contribute on data analysis and the write up of the manuscript and the other authors were participated on data collection and gathering information for this paper.

Conflict of interests

The authors have not declared any conflict of interests.

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