



Assessment on challenges, opportunities and associated health problems of Beef Cattle production systems in Hawassa, Southern Ethiopia

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Abstract

The study was conducted in Hawassa, SNNPR regional state from December 2017 to April 2018 to assess challenges and opportunities in regard to associated health problems of beef cattle production in Hawassa. For the current study, ten Kebeles were selected purposively based on participation on beef cattle production systems. From each Kebele, five beef farmers and private and governmental beef farm owners, totally 50 households were selected. The elders of each Kebele who knows about the past and present condition were participated as key informants in order to increase the precision of the results. As the results revealed, fatteners in the study area use different criteria like body condition, color, age, castration, sex, height and breed to select cattle for fattening. According to the result, majorities (74%) of the fatteners were using tie-feeding (stall feeding) system and other were using grazing and stall feeding system (26%). The different challenges which ranked by respondents at the current study area were land shortage (76%), feed shortage and poor quality (68%), lack of initial capital and governmental support (56%), disease outbreak and inadequate veterinary services (50%). The farmers considered opportunities of beef cattle production such as demand (78%), market access (72%), urbanization (36%), and breed availability (34%). Common health problems of beef identified were infectious disease (48%) followed by noninfectious problems (32%). Reportable diseases that affect cattle health in the current study farms were LSD, FMD, Anthrax, Blackleg and Pasteurellosis(70%, 66%, 40%, 30%, and 12% respectively). To improve and motivate beef cattle production in the area, the challenges must be solved through focusing on credit provision, strategic disease control, and scheme to fight against infectious diseases.

Keywords: beef cattle; challenges; health problem; opportunities; production system

Introduction

Ethiopia, like most of the countries in sub Saharan Africa is heavily dependent on agriculture. The agricultural sector plays an important role in the overall development of the country's economy. The sector plays a major role in the national economy and it is the source of income and employment for the

rural population (Negussie, 2001). Ethiopia's livestock population is the largest in Africa. In 2008/09, Ethiopia sedentary private holdings were estimated at about 49 million heads of cattle, 25 million head of sheep, 22 million heads of goats and 38 million. These livestock population estimation exclude the livestock

population for pastoral areas as there were no official statistics for those areas. Some rough expect estimate indicate that pastoral area account for about 20% of cattle, 40% of sheep and 40% of goats in the country. Thus, including these rough estimates for the pastoral areas, the estimates of national live stock populations for 2008/09 were 59 million cattle, 35 million sheep, 31 million goats and 38 million poultry. The livestock is an important sub sector with in Ethiopia's economy sector in terms of its contributions to both agricultural and value added and national GDP. Between 1995/96 and 2005/06, the livestock sub sector share averaged 24% of agricultural GDP and 11% of national GDP with the highest share recorded at 27% and 13% respectively at its peak (CSA, 2009).

Based on integration of livestock with crop production, level of input and intensity of production, agro-ecology and market orientation; beef cattle production system in Ethiopia is categorized as pastoral, agro-pastoral, mixed crop livestock production, urban and peri-urban farming and specialized intensive farming system (Mohammed et al., 2004; Yitage, 2007). However, the systems are predominantly categorized at agro pastoral system in the low land and the mixed crop- livestock system in the high land. Traditionally, fattening of animals in both system concentrates on male animals and on females which are either infertile or have finished their reproductive cycle. In low land agro pastoral system, grazing is the most common source of feed with limited use of crop residue, whereas, in the high land system, crop residues are the most important source of animals feed during the wet season. When crop residues are scarce in the high lands during the wet season, male animals are taken to the lowland areas for grazing (Elias et al., 2007).

Ethiopian domestic meat consumption for 2006/ 07 have been estimated to be 2.4kg capita per year for beef; 7.0kg capita per years for sheep meet and 0.4kg capita per year for goat meat. Total meet consumption was close to 276 tons in 2006/ 07 of which beef and mutton accounts for 68% and 21% respectively. Pronounced differences have been identified between rural and urban patterns of meat consumption particularly for beef, 1.7kg and 7 kg respectively. A side from economic factors, rural and urban patterns of meat consumption differences can be explained by social and demographic characteristics such as age structure and the rigour of adherence to religions based fattening (Negassa and Jabbare, 2008)

At Hawassa city, majority of the population (95.1%) consumes meat whereas, most of them consume meat once a month (26.8%) followed by consumption at a weekly basis (25.1%). Among the meat being consumed, beef was the most popular one and was mostly consumed on a weekly basis (23.7%) that followed chevon and mutton, which were mostly consumed once a month (13.9 % ,11.8%) respectively (Tsegay et al., 2013). To increase the above figures of nation at beef consumption, enhancing the production in the area will help the improvement at the sector contribution to national and agricultural GDP. This research was assessed different challenges and opportunities available in the study area and will create base line information for further research at the area. Hawassa city is showing rapid change in economic development from time to time nowadays. As a result of this, demand on animal product especially meat is increased greatly than before. In spite of this, there are so many challenging factors that inhibit beef fatteners from producing adequate and quality beef to meet public demand. Therefore, the Objectives of the Study were:-

- To show challenges of beef cattle production
- To indicate available opportunities of beef cattle production
- To assess common health problems and reportable diseases in study area

Materials and Methods

Description of the Study Area

The study was conducted in southern Ethiopia, Sidama zone, Hawassa from December 2017 to April 2018. Hawassa, capital city of SNNPR and Sidama zone administration, lies 275 Km South of Addis Ababa, the capital city of Ethiopia along the asphalt road to Moyale. It is located at 4° 27' and 8° 30' N latitude and 34° 25' and 39° 1' E longitude. The agro-ecology of the area is "woyna-dega" having an altitude ranging from 1650-1700 meters above sea level. The average minimum and maximum temperature is 20.1°C and 34°C respectively. The area receives an annual rain fall ranges between 900-1100 millimeters and Average relative humidity of 51.8%. The rainy seasons extends from February to November, the heaviest concentration being February to March and July to September. Based on the 2007 Census conducted by the CSA, the current study area has a total population of 2,954,136, of whom 1,491,248 are men and 1,462,888 women; with an area of 6,538.17

square kilometers. The total livestock population of Sidama zone is estimated to constituted, 1,721,341 cattle, 228,941 goats, 457, 65 sheep, 204,460 equines, 725,540 poultry and 44,492 beehives. The main crops that grown around the study area are coffee and Inset as specialization and annual crop as diversification are sugarcane, maize, wheat, improved forages and other fruits and vegetables(CSA, 2007; CSA, 2008)

Study Design

A cross-sectional study was conducted from December 2017 to April 2018 to assess challenges and opportunities of beef cattle production in Hawassa from purposively selected 10 Kebeles. From each Kebele, five beef farmers and private and governmental beef farm owners, totally 50 households were selected based on participation on beef cattle production. A semi-structured questionnaire assessment was conducted on selected beef farm owners.

Sample size and sampling techniques

For the aim of this study, sample size was determined by using purposive sampling based on the proportion of 5 to 10 % of the total households living in each selected Kebeles were included. Preliminary assessment was conducted to collect basic information about the study area in order to select representative potential Kebeles of beef fatteners from 32 Kebeles of the study area. Out of 8 sub cities (32 Kebeles), 5 sub cities were selected based on the existence of cattle, access for data collection, experience and practice of beef cattle fattening or production and representativeness of study area. Theselected Kebeles were Alamura, Caffe, Daato odahe, Gamaxo gaale, Hawela wondo, Tuula-gexeri, Daaka, Adaare, Gudumale, gebeya dari and Teesso. From each Kebele,five beef farmers (50 farmers in total) were selected purposively based on the participation on beef cattle production (70% from peri urban area & 30% from urban area of the city residents) and private and governmental beef farm owners were selected. Furthermore, in order to increase the precision of the results, the key informants were selected randomly from each Kebele elders from different direction (places) who knows about the past and present condition of each Kebele. In addition to these, enumerators were selected from each Kebele Development agents (DA), who were speakers of local language and orientation were given on the importance of every item in the questionnaires and on the

techniques of collecting data. The secondary data was collected from written documented materials concerning beef cattle fattening and associated health problems. Secondary sources kept in Hawassa city municipal Livestock and Fishery Resource Office were collected.

Methods of Data Collection

In the current study, data were collected primarily from different private beef farm owners through questionnaire and interviews. The Secondary data from related document reports of Agricultural office, informants' and enumerators' responses were used to increase precision of the findings.

Data Analysis and Interpretation

All the collected data were coded and entered in to the computer Microsoft Excel spread sheet. Descriptive statistics (frequency, percentage, table, text and counts)were employed to analyze and illustrate the data.

Results

Demographic characteristics

The educational level attained by the majority of the house hold heads was low as illustrated in the table blow that cannot read and write (34%) and primary school completed (32%). As the study revealed, the rest 24% were secondary school and 10% were completed higher education. Regarding sex, men (86%) were firstly ranked participants in fattening process and female (14%) were hardly ever participated. Majority of the respondents were in range of 15-45 years old (76%) followed by the range of 46-60 years old (20%) and Above 60 years (4%)(Table1).

Table: 1 Demographic characteristics of study area

Parameters	Category	Number of respondents	Percentage (%)
Educational background of farmers	Cannot read and write	17	34
	Primary school (1-8)	16	32
	Secondary school (9-10)	12	24
	Above grade 10	5	10
sex	Male	43	86
	female	7	14
age	15-45 years	38	76
	B/n 46-60 years	10	20
	Above 60 years	2	4

Criteria considered for selecting cattle for fattening

According to criteria considered by fattener, red color (58%) was the best color selected for fattening followed by the black color (26%) in the study area. The mixed color and blue colored animals were recorded as having the lowest consideration for fattening purpose with the percentage of 12% and 4% respectively. Fattener in the current study area selected tall height (66%) followed by mixed height (24%). The medium height was not much considered for

fattening animals at the area. Majority (78%) of the fatteners selected the male animals while, 20% of them have interest on both sex and only 2% of respondents considered female animals for fattening. The sample was analyzed as the good body condition animals (78%) and matured (84%) animals were selected in higher rate for fattening. In this study area, fattener use castrated (64%) followed by non-castrated (20%) and most of them uses local (48%) breeds followed by both local and cross breeds (44%).

Table: 2 Criteria considered at selecting cattle for fattening

Parameters	Category	Number of respondents	Percentage (%)
Color	Red	29	58
	Black	13	26
	Blue	2	4
	Others/mixed	6	12
Height	Tall	33	66
	Medium	5	10
	mixed	12	24
Sex	Male	39	78
	Female	1	2
	Both	10	20
Age	Under mature	1	2
	Mature	42	84
	Old	7	14
Body condition	Good	39	78
	Emaciated	9	18
	Very emaciated	2	4
Castration	Castrated	32	64
	Non castrated	10	20
	Both	8	16
Breed	Local	24	48
	cross	4	8
	Both	22	44

Fattening duration; feeding systems and types feeding supplements

As the study results indicated, majorities (78%) of the respondents in the study area were fattening the animals for 4-5 months and the left (22%) were fattening for 3-4 months. Majority of fatteners in the current study area were using the stall/indoor feeding

system (74%) and of them, 26% are using grazing and stall feeding system. Any of the fatteners had been never used free grazing only feeding system. The respondents supplement their animals with sugarcane (80%), all parts of Inset (70%), wheat bran (68%) and improved forages (42%) like Elephant grass, Napier grass, Desho, Rhodes grass and others like Fagulo, beer by product, poultry leftoveretc. (Table:3).

Table: 3 Fattening duration; feeding systems and types feeding supplements used

Parameters	Category	Number of respondents	Percentage (%)
Fattening duration	3-4months	11	22
	4-5 months	39	78
Feeding systems	Stall feeding	37	74
	Free grazing only	0	0
	Mixed	13	26
Types of feed supplements	Inset	35	70
	Sugarcane	40	80
	Improved forage	21	42
	Wheat bran	34	68
	others	11	22

Season of marketing and how to sell finished beef cattle in the study area

As indicated in the table 4 below, majority (82%) of fatteners in the study area sells their cattle up on the

main holidays and the left (18%) of respondents market their product at any time for local abattoirs/traders (100%).

Table: 4 Season of marketing and how to sell finished beef cattle in the study area

Parameters	Category	Number of respondents	Percentage (%)
Season of marketing	During main holiday	41	82
	At any time	9	18
To whom finished beef cattle sold	Local abattoir/traders	50	100
	Exporters	0	0

Opportunities of beef cattle production systems in study area

Major opportunities for beef cattle production in the study area include demand (78%), market access

(72%), Urbanization (36%) and breed availability (34%).

Table: 5 Opportunities of beef cattle production systems in study area

Opportunities	Number of respondents	Percentage (%)
Demand	39	78
Market access	36	72
urbanization	18	36
Breed availability	17	34

Challenges of beef cattle production systems

According to the following table (Table 6), the shortage of land (76%) was the first challenge in the study area. Feed shortage and poor quality of feed (68%) was also a crucial problem in the study area.

Next to these, lack of initial capital and governmental supports (56%) and also disease outbreak and inadequate veterinary service (50%) were also limitations to a beef cattle production in the study area.

Table: 6 Challenges of beef cattle production systems in study area

Challenges	Number of respondents	Percentage (%)
Land shortage	38	76
Feed shortage and its poor quality	34	68
Lack of credit and governmental support	28	56
Disease outbreak and inadequate veterinary service	25	50

Common health problems encountered in the farms and the ways how farmers handle the cases

As indicated in the current study, the most common health problems in the study area includes infectious diseases (48%) followed by non-infectious disease

(32%) and the mix of both infectious and non-infectious health problems (20%). The majority of respondents treated their diseased animals by taking to nearby veterinary clinic (84%) and the rest 16% gives medication by themselves (Table 7).

Table 7: Common health problems encountered in farms and ways how farmers handle cases

Parameters	Category	Number of respondents	percentage (%)
Common health problems	Infectious	24	48
	Non infectious	16	32
	Both	10	20
How farmers handle the cases	Takes to nearby vet. Clinic	42	84
	Gives medication by themselves	8	16

Reportable diseases and vaccination

According to the recent finding in the study area as indicated in table 8, the majority of respondents, local informants, and other secondary data sources showed that: LSD (70%) and FMD (66%) are commonly

reportable infectious diseases followed by anthrax (40%) and blackleg (30%) which affects beef cattle production systems in the study area. Out of the total fatteners, 74% of them in the study area vaccinate their animals for commonly reportable diseases and for other outbreaks.

Table 8: Reportable diseases and vaccination

Parameters	Category	Local name	Number of respondents	Percentage (%)
Reportable disease	LSD	Gogu xibba	35	70
	FMD	Afteagir	33	66
	Anthrax	Butamo	20	40
	Blackleg	Aduwuyiha	15	30
	Pasteurellosis	Guribrib	6	12
Vaccination	Yes		37	74
	No		13	26

Discussion

The educational level attained by the majority of the house hold heads were low according to the finding which falls between cannot read and write (34%) and primary school (32%). The finding reveals, at the current study area the house hold heads that participate on beef cattle fattening (66%) were mostly had less academic knowledge. The current research report shows slight agreement with the report of (Yien, 2014) who reported the low level of education of house holders in Gambella region Jikawo woreda (70%). These low level of education were blocked small stockholder fatteners from coping up with modernized way of farming systems in the study area which indicates that more intervention would needed to aware farmers in order to improve their beef production and husbandry practices. Regarding sex, males (86%) were top ranked participants in fattening process than females (14%). These results contradict with (Bereda *et al.*, 2014) who reported majority (75%) of respondents in Ilu Aba Borawho were engaging in livestock production were females. These difference may be due to beef production offers more opportunities for males to be closely involved in the daily management than females in the study area since most of tasks accomplished in beef cattle production requires more powerful task.

As current studies result indicated, red color (58%) were the best color selected for fattening followed by the black color (26%) in the study area. As the respondents' idea, the color selection were only associated with fatteners' preference to specific color from various color types and local traders need at market value. These results were in disagreement with the report of (Shewanigzaw *et al.*, 2014), who reported the majority of respondents (66%) select light white color as the best animal skin color for selecting fattening animals followed by red (29%) in central southern region of Ethiopia. Fattener in the study area selected tall height (66%) and good body condition animals (78%). As the respondents' response, tall height animals have good market acceptability than short and medium height animals and good body condition animals are better for fattening in a short period of time and the result was in line with (Takele, 2009), who reported the similar figure in Wolaita Zone. The majority of fatteners in the study area uses male (78%) and matured (84%) animals for fattening. These were because; in Hawassa town many household dairy cattle producers do not grow male calves due to a fear of feed consumption. Due to the fear of feed cost, they sell male calves for beef fattener

at low cost immediately as the calves have stopped calving. These current study results were similar with the report of (Shewanigzaw *et al.*, 2014), who reported 80% of respondents purchased tall height, male animals in the central southern region of Ethiopia. In this study area fattener mainly fatten castrated (64%) animals than non-castrated (20%) animals. Their main reason behind why they use castrated animals for fattening was in order to reduce sexual desire of the animal. The sample respondents and informants' said that the castrated animal stores fat and bitterly converts feed resources to meat. The respondents also believe that castration simplifies the fattening operation and it makes the animal healthy and appetite-full. According to the respondents, the difference that they observed in terms of time and body weight in comparison with castrated animal were that the uncastrated one increases time of fattening rather than fattening castrated one. Uncastrated animals store low fat than castrated one and had lower body weight at the end. Furthermore; the uncastrated one had given less managements and takes low market price than castrated when fattened. Local breed animals (48%) were the choice of fatteners at the current study area followed to mixed breed or both local and cross breed animals (44%). These result shows slight agreement with the report of (Shewanigzaw *et al.*, 2014), who reported major fatteners (79%) castrate their animal in the central southern region of Ethiopia and most of them uses local (80%) beef breeds for fattening due to ease of access and needs less feed than exotic/cross breeds. The current study finding also agree with the report of (Teklehaymanot *et al.* 2017), who reported that Local breeds (86%) which were mostly purchased from the market for traction purpose were used as sources of fattening cattle. The farmers and farm owners also stated that local cattle breed had the lowest vulnerability to disease risks in terms of the average sickness frequency, veterinary costs and output loss and also have the capacity to cope with the harsh environmental conditions like drought, heat and poor quality feed even though, they are less productive.

Majority (78%) of the farmers in the study area takes 4-5 months for fattening and the rest (22%) for 3-4 months. This short duration of fattening was associated with types and aim of production and agro-ecology of study area. However, the length of fattening period varies according to the feed availability and market demand. These results were similar with the report of (BoARD, 2004), who

reported cattle fatteners fed usually for 4 months in Wolaita area of southern Ethiopia but it's different from the report of (MOA, 1997b) and (Habtemariam, 2000) which reported duration of fattening cattle for 6 months in western and more than 1 year in eastern part of Ethiopia respectively. Due to hot environmental climate of the current study area, animals utilize parts of the energy obtained from absorbed nutrients for body weight gain. In the current finding, the feeding system used were the stall/ indoor feeding (74%) followed by mixed or grazing and stall feeding system (26%) that were similar with the report of (Shewanigzaw *et al.*, 2014), who reported the similar report in the central southern region of Ethiopia and no one recommend grazing only feeding system. Fatteners in the study area supplement their animals with sugarcane (80%), all parts of Inset (70%), wheat bran (68%) and improved forages (42%) like Elephant grass, Napier grass, Desho, Rhodes grass and others (fagulo, beer by product, poultry leftover) etc. All fatteners were using the supplements listed above install feeding and let their animals to exercise in the enclosed land per day. These results were in lined with the report of (Shewanigzaw *et al.*, 2014), who reported similar report in the central southern region of Ethiopia.

As to marketing in study area, (82%) of fatteners market their cattle during the main holidays. Respondents and informants as well as enumerators forwarded that marketing of fattened cattle were better at the end of dry season particularly near Easter (Fasica) holyday. Their main reason for these activity were related to the availability of crop residues and natural grasses as well as, the market price of fattened cattle were attractive because of the holiday of annual Chris mass and Epiphany (Timket) of Ethiopia and the left (18%) market at any time after main holidays. The results were the similar with the reports of (Shewanigzaw *et al.*, 2014) and (Takele 2009), who reported the similar findings in the central and southern regions of Ethiopia. As the current finding shows, all of fatteners sell their finished beef cattle for local abattoirs/traders, Hotels and Butchers house and local consumer (Kircha) (100%). According to the observational findings in the study area, the above findings were associated with lack of export abattoir in the Hawassa town. The findings were contradictory with the report of (Ayenew 2012) from North Ethiopia who reported; most farmers (80%) sell fattened animals at the export market of Metema; even though no farmer had a license to export.

The majority of farmers responded that opportunities for beef cattle production in the study area include demand (78%), market access (72%), and urbanization (36%) and breed availability (34%). As the fatteners response, the increase in number of hotels, and restaurants in the towns increased demand for meats; emerging middle-class urban dwellers with higher income and more buying power and the demand in animal products have initiated fatteners to be emerged in Hawassa town. The study city becoming more urbanized and industrialized than before and urban dwellers increased the use of animal product, particularly, meat comes from fattened cattle. A Key informants in the study area informed that, traders come from different neighborhood Woredas to buy fattened cattle while that increase marketing choice and opportunities for beef cattle production. Furthermore; the informants, enumerators and agricultural office findings indicated that, the increase of Hawassa town population, an increase in demand due to economic growth of urban population and the increase of butcher shops in the town is upgrading the opportunities for beef cattle production in the study area. These finding not agree with the report of (Amistu *et al.* 2016) who reported major beef cattle production opportunities were market demand (38.3%), comfortable environments (30%), and feed resource and water availability (13.33%).

Based on the current finding, there were reports of challenges like shortage of land (76%) which was the worst challenge in the study area, because the concerned area was highly populated. The result of current study was in lined with the report of (Million, 2003) who reported the central southern region (73%) was highly populated with a maximum of about 670 persons per Km² and therefore, intensification is probably a better path for this area since there is no possibility for future land expansion. Feed shortage and poor quality (68%) were also a crucial problem in the study area which had a similarity with the report of (Getnet, 2003) who reported that feed quality and quantity as a main limitation to animal production in Ethiopia due to population expansion. Next to feed quality and quantity, lack of initial capital and governmental supports (56%) was also alarming constraints of beef farmers and initiatives in the study area. The finding agree with the report of (Belete *et al.*, 2010) who reported shortage of capital and credit in Amhara region which might be due to sources of financing, generally involving subsidized, low interest credit; and trend not to allow small holders to borrow money unless they are organized in groups or through

cooperative arrangements. The disease outbreak and inadequate veterinary service (50%) were also limitations to a beef cattle production in the study area. These results were similar with the report of (Berihu *et al.*, 2014) who reported that 75% of total respondents responded that shortage of animal health centers in the woreda and disease outbreak as major constraints to Gantaafeshum Woreda of Tigray, Northern Ethiopia. These may be due to the available clinics were too far from their residence and for the other thing even the available clinics were not well equipped with facilities to provide adequate veterinary service.

The most common health problems in the study area included infectious (48%) which includes ectoparasite (tick, mite, lice etc.); endoparasite (faciolosis, GIT parasite), LSD, FMD and other bacterial and viral diseases followed by non-infectious diseases (32%). The respondents also indicated that the disease dynamic was aggravated by many factors like feed shortage, inadequate veterinary service and season and agro ecological factors. High economic losses of LSD were also incurred by fatteners' for extra feed bought to assist sick animals during their recovery and the lengthened period required for fattening. Furthermore, animals that recovered were no longer fit for trade purposes and were therefore sold at local markets at a lower price. These finding shows slight agreement with (Belete, 2006) who reported that infectious diseases in Fogera (41.3%) areas were the major health problems. The majority of respondents in the study area treat their diseased animals by taking to nearby veterinary clinic (84%) and the rest (16%) treat/gives medication by themselves as a result of the fear of high cost of medication and lack of nearby veterinary clinics while that was the finding that slightly agree with the report of (Daniel, 2008) who reported from Borena area.

Based on the study's and secondary data findings, the most commonly reportable diseases in the study areas were LSD, FMD, Anthrax, blackleg and Pasteurellosis that rates 70%, 66%, 40% and 30% respectively. As the results revealed, Lumpy skin diseases were firstly ranked disease of livestock in the study area. The findings shows slight agreement with the report of (EAHYB, 2012) who reported LSD was an endemic viral disease of cattle in Ethiopia. Herd-level prevalence of LSD had been reported to be 44% (38-50%), with the highest prevalence in the mid-highlands (64%), followed by the lowlands (50%).

Based on outbreak reports to the Ministry of Agriculture by (Ayelet *et al.*, 2014) LSD outbreaks also had occurred in all regions except Harari and Dire Dawa, with the highest records in the central and southwest parts of the country. The present study result for other reportable diseases also shows slight agreement with the report of (Gebremedhin, 2007) who reported that FMD (17.7%), Pasteurellosis (15.5%), Anthrax and blackleg were the major cattle diseases in Astbiwomberta. Regarding Vaccination, (74%) of respondents vaccinate their animals for commonly reportable and other infectious disease. These results slightly agree with the report of (Berihu *et al.*, 2014) who reported that (68%) of respondent's vaccinate their animals at times of campaign. The finding tells us that, the respondent vaccinate their livestock to maintain health as productivity can't be achieved without proper health maintenance, and they did nothing other than vaccination. Therefore, in the study area, even though there are many opportunities that initiate farmers or fatteners to start beef production, there are also so many challenges that encounter fatteners during production which needs serious governmental interference or support.

Conclusion and Recommendations

Different criteria were used to select cattle for fattening in the study area. These are color, height, body condition, age, sex, breed, castration etc. In the study area, the duration of fattening were 3-4 months and 4-5 months depending on the type of farm, feed availability and market demand. Majority of fatteners in the study area follows indoor or stall type of feeding systems followed by mixed type and none of them uses grazing only. Farmers/fatteners supply their beef cattle with different types of feed supplements. Most fatteners responded that they sell finished cattle during main Holyday to local traders/abattoir/butchers. As the beef farmers responded, the challenges for beef cattle production in the study area were land shortage (76%) feed shortage and poor quality (68%), lack of initial capital and governmental support (56%) and disease outbreak and inadequate veterinary services (50%). There were different opportunities that facilitate good conditions for beef fattening in the study area. These were demand, market access, urbanization and breed availability and others. Infectious diseases were the most common health problems encountered in farms and then most of fatteners handle the cases by taking the cattle to nearby veterinary clinic and most of the fatteners vaccinate their cattle for reportable infectious diseases.

Based on above conclusive statements, the following recommendations are forwarded by authors:-

- There should be the mechanism of planting improved forage grasses to minimize the shortage of feed and poor quality.
- Short training on beef cattle production should be given to the farmers for advanced implementation.
- Credit provision should be facilitated to motivate beef cattle production.
- Using data generated from this study, which could be serving as basic line information, strategic disease control scheme should be developed to fight against infectious, non-infectious and miscellaneous diseases and further research should be done in and around the study area.

Conflict of Interest

The authors declares that there is no conflict of interest regarding the publication of this article

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References

- Amistu, K., Temesgen, M., Alemu, A. and Tarekegn, W. (2016): Assessment of Beef Cattle Fattening and Marketing System and Contribution to Household Food Security in Case of Lemmo Woreda, Hadiya Zone, Southern Ethiopia. *Mark.Cons. Research.* **29**:5-6.
- Ayelet, G.H., Jemberie, S., Belay, A., Gelaye, E., Sibhat, B., Skjerve, E. and Asmare, K. (2014): Lumpy skin disease in cattle in central Ethiopia: outbreak investigation and isolation and molecular detection of the virus. *Revue scientifique technique* (International Office of Epizootics). **33**(3):877-887.
- Ayew, H.Y. (2012), "Risk analysis in cattle fattening in North West Ethiopia: Empirical evidence form two limit Tobit model", *International Journal of Development and Sustainability*, Vol. 1 No. 2, pp. 240–254.
- Belete, A. (2006): Studies on cattle milk and meat production in Fogera Woreda: production system, constraints and opportunities for development, M.Sc. Thesis, Hawassa University, Hawassa College of agriculture school of graduate studies, Department of Animal and Range science, Hawassa, Ethiopia. *J.Vet.Sci.Technol.* **32**:5
- Belete, A., Azage, T., Fekadu, B. and Berhanu, G. (2010): Cattle milk and meat production and marketing system and opportunities for market orientation in fogera woreda, Amhara region, Ethiopia. *Agric. Biol. J. N. Am.* **8** (1):18-34.
- Bereda, A., Yilma, Z. and Nurfeta, A. (2014): Dairy Production System and Constraints in Ezha Districts of the Gurage Zone, Southern Ethiopia. *J.Global.Vet.* **12** (2): 181-186.
- Berihu, H., Aleme, A. and Mulata, H. (2014): Assessment on Major Health Constraints of Livestock Development in Eastern Zone of Tigray: The Case of "Gantaafeshum Woreda" Northern Ethiopia Department of Animal Sciences, Adigrat University, Ethiopia. *J.Vet.Sci.Techn.* **5**:1-6.
- BoARD, (2004): Annualreport of bureau of agriculture and rural development of Amhara region Bahirdar, Ethiopia. *Agric. Biol. J. N. Am.* **8**(1):12.
- CSA (Central Statistical Authority) (2009): Livestock and livestock characteristics statisticalbulletin No 446 Addis Ababa Ethiopia. *Int. J.Med.Sci.* **5**(6):279-285.
- CSA (Central Statistical Authority). (2007): Ethiopian Agricultural Census. Sample Enumeration Results for the SNNPS Region. *Journal of Marketing and Consumption Research.* **29**:12.
- CSA (Central Statistical Authority). (2008): Agricultural Sample Survey. Report on Livestock and Livestock Characteristics, Volume II, Federal Democratic Republic Of Ethiopia.
- Daniel, T. (2008): Beef cattle production system and opportunities for market orientation in Borena zone, Southern Ethiopia. A Thesis Submitted to the Department of Animal Science, School of Graduate Studies Haramaya University. P.4.
- EAHYB. (2012). Ethiopia Animal Health Yearbook 2011. Addis Ababa, Ethiopia.
- Elias, M., Berhanu, G., Hockstra, D. and Jabar, M. (2007): Analysis of Ethio-Sudan cross boarder cattle trade. The case of Amhara regional state. Improving productivity and market success (IPMS) of Ethiopian farmers project working paper 4. International live stock research institute (ILRI). Nairobi, Kenya. *Acad. J. Nutr.* **2** (3):41.
- Gebremedhin A., (2007): Major animal health problems market oriented livestock development atsbi womberta Woreda, Tigray regional state DVM Thesis, AAU, FVM, Debrezeit, Ethiopia. *J.Vet.Sci.Technol.* **5**:4-6.

- Getnet, A. (2003): Feed resource development and utilization: possible options and recommendations under Ethiopian conditions. Holeta agricultural research center, Holeta, Ethiopia. *A.J.Agr.Res.* **32**:2.
- Habtemariam K., (2000); Livestock production, household food security and sustain-ability in smallholder mixed farms: A case study from Kombolcha Woreda of Eastern Ethiopia. MSc thesis. Swedish University of Agricultural Sciences, Department of Rural Development Studies, Uppsala.
- Million, T. (2003): Challenges and opportunities to livestock and livestock marketing in Wolaita zone, Ethiopia. *A.J.Agr.Res.* **9**(41):3050-3055.
- MOA, (Ministry of Agriculture) (1997b): Ruminant livestock development strategy, Addis Ababa, Ethiopia. P.87.
- Mohammed, A., Ahmed, A., Ehusi, and yemesrech, A. (2004): Dairy development in Ethiopia EPTD, Discussion papers no 123. International food policy research institute, Washington DC, USA. P.41.
- Negassa, A. and Jabbare, M. (2008): Livestock ownership commercial off take rate and their determinant in Ethiopia. ILRI, research reports no 9. Nairobi, Kenya
- Negussie B., (2001). Borena Zone: Outcome of Small Rains Anxiously Waited. Report on a Rapid Assessment Mission, 14-24 September 1999. P. 5.
- Shewanigzaw, W., Zekarias, B. and Tesfaye, A. (2014): Assessment of cattle fattening and marketing system and constraints affecting cattle fattening in central southern region of Ethiopia. *J.w. Appl. Sci.* **9**(41):3050-3055
- Takele, (2009): Traditional backyard cattle fattening in Wolaita system of operation and the routine husbandry practice. Ethiopian society of Animal production (ESAP) ISSN: **9**:1607-3835.
- Teklehaymanot Gebremichae, Tsegay Tkue Gebrewahdand Niraj Kumar, (2017), Assessment of beef cattle fattening practices and its challenges in and around Mekelle, Tigray, Ethiopia, *Ethiopian Veterinary Journal* 2017, 21 (1):29-39;
- Tsegay Lijalem, Mohammed Beyan, Sandip Banerjee, (2013) ; Meat Consumption Patterns in Hawassa City, Southern Ethiopia *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*; Volume 3, No 1, pp 56-65
- Yien, D, (2014): assessment of hygienic milk production and prevalence of mastitis in dairy cow in jikawo woreda of nuer zone, gambella region, Ethiopia. P 30.
- Yitage, A. (2007): Characterization and analysis of the urban and per urban and dairy production system in the north western Ethiopian high-land. PHD. Dissertation, Boku University, Vienna, Australia. *Acad. J. Nutr.* **2**(3):120.

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