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Traditional Cattle Fattening and Live Animal Marketing System in Different Agro-Ecologies of Ilu Aba Bora Zone, Oromia, Ethiopia

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Abstract: A cross-sectional survey was conducted in three districts of Ilu Aba Bora zone of Oromia Regional State in south-western Ethiopia to characterize smallholder cattle fattening and live animal marketing systems. A pre-tested, structured questionnaire was used to collect data. Using a stratified sampling technique, a total of 180 households from three districts were included in the survey. Collected data were analysed using descriptive statistics. Results indicated that about 71.1, 35 and 81.7% of respondents in Bacho, Algie and Chewaka districts practiced cattle fattening, respectively. About 46.6, 7.8 and 45.6% of the respondents fattened cattle for 4-9, 10-15 and more than 16 months, respectively. Cattle marketing in the study area function at two levels, namely village level and primary markets. Market actors were producers, consumers, middlemen, restaurant owners, traders and butchers. Majority (72.8%) of respondents had access to market information before sale. Most of the respondents (86.7%) determined price through strong bargaining practice between buyers and sellers. The lower and higher average price of cattle was 1756.67±38.31 and 3872.2±65.02 Ethiopian Birr (ETB), respectively and differed significantly ($P<0.05$) among the districts. The channels of cattle marketing was farmers-to-farmers, farmers-to-consumers, farmers-to-traders and farmers-to-butchers. The mean distance to cattle market was 11.46±0.22Km and showed a significant ($P<0.05$) difference among study districts.

Key words: Cattle · Fattening · Marketing · Marketing Channel · Middlemen · Price Determination

INTRODUCTION

Cattle production in Ethiopia is an integral part of the mixed farming, agro-pastoral and pastoral production systems. In both rural and urban areas, smallholder cattle fattening is emerging as an important source of income. In rural Ethiopia cattle fattening is based on locally available feed resources.

According to MOA [1], Cattle fattening practices in Ethiopia is categorized in to three major fattening systems: traditional system, by product based system and the Hararghe fattening system. In traditional system, farmers usually sell oxen after the plowing season when they are in poor condition and too old for the draught purposes. By-product fattening system is mainly based on agro-industrial by-product such as molasses, cereal milling by-product and oilseed meals. Intensive feeding of the available feed supply to young oxen used for draught power could best describe the Hararghe fattening practice. The Hararghe fattening system is characterized by the use of the available feed resources to young oxen through cut-and-carry feeding system of individual tethered animals. The most common feed types used for this system are thinning, leaf strip and part of maize and sorghum plants.

The Marketing of livestock and livestock products is an important activity all over Ethiopia. The primary reason for selling livestock in the highlands of Ethiopia is the generation of income to meet unforeseen expenses [2]. Pastoralists also, besides using livestock as sources of food and as a form of saving and wealth, sell animals at times of cash needs to purchase food and other necessities [2].

According to UNDP-EUE [3], livestock marketing in Ethiopia follows a three-tier system: primary, secondary and terminal markets through which animals go into the hands of small traders and large traders, final buyers, which include butchers, meat-processing factories, fattening farms or live animal exporters. Livestock are generally traded by visual judgment and weighing livestock is uncommon though auctions were used to be practiced in some of the southern (Borena) markets where

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weighing was also practiced [4]. Prices are usually fixed by individual bargaining and depend mainly on supply and demand, which is heavily influenced by the season of the year and the occurrence of religious and cultural festivals. Livestock marketing systems in Ethiopia is not well developed. It is characterized by markets that lack basic infrastructure, facilities like cattle pen, weighing scale, water troughs, feed and market information [5].

In the study area, there is little information available on smallholder cattle fattening and marketing systems. Therefore, to plan and develop improved cattle fattening and marketing systems, it is very important to investigate the existing cattle fattening practices and marketing systems in the study area. The objective of this study was, therefore, to assess smallholder cattle fattening and marketing systems in Ilu Aba Bora Zone.

MATERIALS AND METHODS

Study Area: Bacho, Algie and Chewaka districts are located at a distance of 640, 654 and 560 km, respectively from Addis Ababa, capital of Ethiopia and are situated at an altitude ranging from 1650 to 2500, 1139 to 2165 and 900 to 1400 meters above sea level, respectively, with area of 49249, 94344 and 54220 ha, respectively. Bacho, Algie and Chewaka districts receives an average annual rainfall ranging from 1500 to 2200, 1371.6 to 2275 and 1000 to 1200 mm, respectively and the minimum and maximum daily temperature of 12 and 25°C, 14.9 and 25.1°C and 36 and 41°C, respectively. Human population of Bacho, Algie and Chewaka) was estimated to be 42,335, 90, 290 and 92,027 people [6].

Sampling Procedure: A stratified sampling technique was used based to obtain the respondents for the purpose of this study based on the agro-ecological zone altitude. Bacho, Algie and Chewaka districts represented high, medium and Low land, respectively. A total of 180 households, 60 from each district were randomly selected using systematic random sampling method.

Sources of Data and Analytical Technique: Informal and formal survey tools were employed to gather primary data for this study. These were obtained by using pre-test, well-structured questionnaires. The respondents were smallholder cattle producers. Structured questions were asked to each farmer. The data collected were management of the fattening cattle, feeds and feeding, cattle meat consumption, source of animals for fattening, duration and frequency of fattening, marketing of cattle, market actors and price determination. The primary data collected for this survey were analyzed using descriptive statistics such as mean, frequency of distribution, range and percentages and GLM ANOVA using SPSS software version 16. Least Significant Difference was employed to separate means having statistically significant difference.

RESULTS AND DISCUSSION

Fattening practices and cattle meat consumption: Experiences of small-scale cattle fattening and cattle meat consumption in the study area are shown in (Table 1). Results showed that about 71.1, 35 and 81.7% of respondents in Bacho, Algie and Chewaka districts practice small-scale cattle fattening, respectively. Farmers in Chewaka district had a long history of traditional small-scale fattening, where by almost all households owning cattle engaged in fattening one or more cattle by tethering and hand feeding. Majority (62.8%) of respondents fattened cattle using animals from their own herd. About 37.2% of the respondents indicated that they sell their animal without improving their body condition. Similar results were reported by Tesfaye [7]. Overall, 64.6% of the respondents fatten cattle once a year.

Majority (90%) of the respondents in the study areas consume cattle meat and 83.3% of the respondents consumed meat during holidays or non-holiday days, particularly on market day from butcheries, while 16.7% respondents consume meat during different national and religious festivals from shared slaughter (*kircha*). In Bacho, Chewaka and Algie districts about 22, 19.3 and 9.1% of the respondents practice backyard slaughtering of animals. This is because of lack of slaughter house services and lack of control by animal health and meat inspectors at town municipality. This needs a special attention from human health point of view of zoonotic diseases, since raw meat consumption is a common practice in the study area.

About 46.6, 45.6 and 7.8% of the respondents fattened cattle for 4-9, 16 and 10-15 months, respectively. Respondents in Chewaka fed cattle for shorter time (4-9 months) as compared to other study sites. This is probably due to their indigenous knowledge on fattening aspects. As a unique management tool, they separate animals for fattening from other herd and provide shelter and relatively quality feed and adequate water. They also restrict movement of animals by tethering them; thereby prevent loss of energy for search of feed and water. Habtemariam [8] indicated that farmers in east Ethiopia fed oxen for more than one year. According to Jepsen and Creek [9] poor performing cattle are kept for a longer period to reach targeted fattening level.

Table 1: Percent of farmers practicing Cattle fattening and cattle meat consumption

	Districts of the study							
	Bacho		Algie		Chewaka		Total	
Variables	N	%	N	%	N	%	N	%
Experience of fattening	43	71.7	21	35	49	81.7	113	62.8
Source of animal for fattening								
Purchased	6	14	4	19	35	71.4	45	39.8
From own herd	37	86	17	81	14	28.6	68	60.2
Frequency of fattening per year								
Once	32	74.4	20	95.2	21	42.9	73	64.6
Twice	9	20.9	1	4.8	27	55.1	37	32.7
Thrice	2	4.7	0	0	1	2	3	2.7
Duration of fattening								
4-9 months	0	0	0	0	100	48	48	46.6
10-15 months	8	19.5	0	0	0	0	8	7.8
>16 months	33	80.5	14	100	0	0	47	45.6
Cattle meat consumption	50	83.3	55	91.7	57	95	162	90
Source of meat for household consumption								
From shared slaughter (kircha)	11	22	5	9.1	11	19.3	27	16.7
Purchased from butcheries	39	78	50	90.9	46	80.7	135	83.3

N= Number of households

Table 2: Market information, methods of price determination, cattle purchased and sold in the last 12 months and their major reasons

	Districts of the study							
	Bacho		Algie		Chewaka		Total	
Variables	N	%	N	%	N	%	N	%
Market information	36	60	45	75	50	83.3	131	72.8
Source of information								
Developmental agents(DA's)	11	30.6	9	20	3	6	23	17.6
Relatives	12	33.3	1	2.2	1	2	14	10.7
Neighbors	13	36.1	35	77.8	46	92	94	71.8
Price determination								
Brokers	14	23.3	3	5	7	11.7	24	13.3
Negotiation between sellers and buyers	46	76.7	57	95	53	88.3	156	86.7
Purchased cattle	25	41.7	5	8.3	3	5	33	18.3
Reasons of purchase								
Fattening	8	32	1	20	1	33.3	10	30.3
Breeding purpose	17	68	4	80	2	66.7	23	69.7
Cattle sold in the last 12 months	48	80	36	60	45	75	129	71.7
Reasons for sale								
To pay tax	7	14.6	14	38.9	8	17.8	29	22.5
To cover school fee	3	6.2	7	19.4	3	6.7	13	10.1
To cover health fee	7	14.6	4	11.1	2	4.4	13	10.1
To replace older stock	25	52.1	10	27.8	25	55.6	60	46.5
To cover HH necessities	6	12.5	1	2.8	7	15.6	14	10.9
Types of buyers								
Retailers/butchers	31	64.6	30	83.3	10	22.2	71	55
Traders	6	12.5	3	8.3	35	77.8	44	34.1
Hotels and restaurants	11	22.9	3	8.3	0	0	14	10.9

N= Number of households; HH = household

Table 3: Price variation for selling cattle across different market places

	Districts of the study							
	Bacho		Algie		Chewaka		Total	
Variables	N	%	N	%	N	%	N	%
Price variation between markets	49	81.7	52	86.7	52	86.7	153	85
Cattle price is higher at								
Kemise market	49	100	0	0	0	0	49	32
Algie market	0	0	52	100	0	0	52	34
Lamafa/Ilu Harar market	0	0	0	0	52	100	52	34
Reason for price variation								
Differ in number of traders	36	73.5	42	80.8	45	86.5	123	80.4
Proximity to urban centers	6	12.2	2	3.8	0	0	8	5.2
Infrastructure/road	7	14.3	8	15.4	7	13.5	22	14.4

N= Number of households

Table 4: Average price of cattle (ETB) on different season and distance to market place (Km)

Variables	Districts	N	Mean ± SE	Minimum	Maximum
Lower Price	Bacho	60	1746.67±61.41[a]	1100	3000
Algie	60	1355 ±45.25[b]	700	2700	
Chewaka	60	2168.3±43.92[c]	1500	3000	
Overall mean	180	1756.67±38.31	700	3000	
Higher Price	Bacho	60	4033.3±90.69[a]	3000	6000
Algie	60	2988.3±50.55[b]	2000	4000	
Chewaka	60	4595±71.88[c]	3500	5500	
Overall mean	180	3872.2±65.02	2000	6000	
Distance to market	Bacho	60	11.98±0.44[a]	4	18
Algie	60	13.35±0.22[b]	9	15	
Chewaka	60	9.03±0.22[c]	5	11	
Overall mean	180	11.46±0.22	4	18	

[a-c] Means within a column with different superscript differ significantly (P<0.05). SE= standard errors, Km=kilometer

Table 5: Market place, means of purchase, slaughter house services and retailing activities

	Districts of the study							
	Bacho		Algie		Chewaka		Total	
Variables	N	%	N	%	N	%	N	%
Market Centers								
Farm gate	0	0	1	11.1	0	0	1	6.2
Village markets	0	0	0	0	2	66.7	2	12.5
Market at District town	4	100	8	89.9	1	33.3	13	81.3
Means of buying cattle								
Buyers themselves	0	0	5	55.6	3	100	8	50
Brokers/commission agents	4	100	3	33.3	0	0	7	43.8
Family members	0	0	1	11.1	0	0	1	6.2
Slaughter house services								
Indoor/backyard	0	0	3	33.3	3	100	6	37.5
Slaughter house/abattoir	4	100	6	66.7	0	0	10	62.5
Meat sellers at butcheries								
Household head	1	25	5	55.6	2	66.7	8	50
Family members	3	75	2	22.2	1	33.3	6	37.5
Hired labor	0	0	2	22.2	0	0	2	12.5

N= Number of households

Cattle Marketing: Market information, methods of price determination, cattle purchased and sold in the last 12 months and their major reasons are indicated in Table 2. Cattle marketing in the study area function at two levels: Village level and primary markets. At village level markets the volume of animals sold per week or market day was relatively less. Primary markets are set at district towns. Market actors were producers, medium to large traders, middlemen/brokers, butchers, restaurant owners and others farmers buying cattle for replacement. In primary markets the volume of animals sold was high as compared to the village level market and they feed the terminal markets. In both market types there are no facilities for feeding, watering, housing and weighing.

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. Majority (72.8%) of respondents indicated that they obtain market information before cattle sale. Neighbors, relatives, own visit and extension agents are the major source of market information. According to Daniel [10], 92% of the respondents in Borena zone, get market information before they sell their cattle.

Price Determination: About 86.7% of the respondents indicated that price determination was through strong bargaining practice between buyers and sellers, while 13.3% respondents determined prices through involvement of brokers/middlemen-this offers the lowest profit margin for the producer due to the fee paid to the middlemen. The involvement of middlemen was reported to be higher in Bacho district probably due to the existence of more buyers such as butchers and restaurant owners especially at *Kemise* market.

During the last 12 months, about 18.3 and 30.3% of the respondents bought cattle for breeding/replacement and fattening purposes, respectively. With regard to sources of animals, 81.8% of the respondents purchased cattle from other smallholders in other locality and the rest (18.2%) purchased from farmers within the same locality.

About 71.7% of the respondents sold some of their cattle in the last 12 months to replace older stock (46.5%), while the rest sold to meet family financial needs such as taxes, health bills, school fees and household expenses. Our result was in agreement with findings of Workneh and Rowland [11].

Marketing Channels: The channels of cattle marketing found in the study areas are farmers-to-farmers, farmers-to-consumers, farmers-to-traders and farmers-to-butchers. About 64.6 and 83.3% respondents in Bacho and Algie sold their cattle to butchers, while 77.8% in Chewaka sold their cattle to traders, who collect and track cattle to terminal markets such as Addis Ababa. With regard to the types of buyers, 55 and 34.1% were butchers and traders, respectively. Majority (68.3%) of the respondents trek animals to the market by themselves.

Price Variation across Different Market Places: In the study area, farmers sell cattle at village level markets and secondary markets based on proximity and price variation. All markets set one day per week. About 85% of respondents stated that there was a price variation between different market places. Price of cattle was found to be higher at kamise (32%), Algie (34%) and Lamafa/Iluharar (34%) markets in Bacho, Algie and Chewaka districts, respectively. Price of cattle was relatively lower at Bacho and Leka of Bacho district, Iriyo market of Algie and Tokofa and Lamafa markets of Chewaka district. Major reasons for price variation at different markets were high participation of cattle traders (80.4%), accessibility of the market (14.4%) and proximity (5.2%).

Price Variation across Months/seasons: Majority (89.4%) of respondents stated that cattle price increase during January-April. Majority of respondents in Bacho and Algie stated that price of cattle rise during coffee harvesting in the month of January. According to respondents in Chewaka, the price of cattle gets higher during Easter. During this time cattle traders from different regions buy cattle and track to tertiary markets prior to Easter and festive seasons. About 10.58% of the respondents indicated that price of cattle was higher during Ethiopian new-year which is celebrated on September eleven every year. All market actors and key informants indicated that cattle price generally rise during Christmas, Easter, Eid Al-Adha, Eid Al-Fetir and the Ethiopian New year. The lower and higher overall average price of cattle in the study area was 1756.67±38.31 and 3872.2±65.02 ETB, respectively and differed significantly ($P<0.05$) among the districts. Variation in cattle price across months was due to coffee harvesting (45.6% of the respondents), fasting and holidays (36.1%) and lack of transport network 12.8%). According to informal discussion with market participants, some preferred traits of cattle for buying were age, body condition, size, length, height, productivity, colour, local breed type and sex. If the animal is for breeding purpose the buyers ask the history of breeding/productivity of the animal's ancestors. When farmers buy for traction, they focus on the strength and suitability of the bull/oxen for draught power to cultivate crop land and its willingness in making

pair with other bull/oxen. These preferred traits also influence the price of cattle, where buyers pay more for the desirable quantitative and qualitative traits.

Supply of the animals to markets is mostly done by trekking. The overall average distance travelled to cattle market was 11.46±0.22Km, with a range of 4-18Km. There was a significant ($P<0.05$) difference in distance travelled to cattle market among the districts.

Butchery Aspects: Majority 81.3 of the butchers buy cattle from district town markets, while 12.5 and 6.2% buy from village markets and at farm gate. About 50% of the owners of butcheries buy cattle by themselves, whereas about 43.8% used paid brokers/middlemen. Comparatively, butchers in Bacho district were highly influenced by the interference of middlemen/brokers than in Algie and

Chewaka Districts: About 31.2% of the butchers stated that they participated in retailing meat year round. The butchers indicated that in the study area there was no adequate modern cattle slaughtering services. Majority (62.5%) of the butchers indicated that they slaughter cattle at slaughter houses, while 37.5% respondents slaughter at backyard.

CONCLUSIONS

It was concluded that smallholder farmers in the study area practice traditional cattle fattening. Farmer in the study area fattened cattle using traditional practices. Cattle marketing in the study area function at two levels, namely village level and primary markets. Market actors were producers, consumers, middlemen, restaurant owners, traders and butchers. Majority of respondents in the study area had access to market information before sale. Most of the respondents determined price through strong bargaining between buyers and sellers. Cattle marketing outlets were farmers-to-farmers, farmers-to-consumers, farmers-to-traders, farmers-to-restaurant owners and farmers-to-butchers. To increase the quality and number of animals fattened, providing farmers with sufficient training and extension services on improved cattle fattening technologies is very important. Because of lack weighing facilities cattle are marketed based on visual judgment and this could affect the actual price of the animal reducing the profitability of farmers.

Season and market locations were found to affect price of cattle suggesting the need to plan cattle fattening targeting season and market location to benefit farmers from better price, so that cattle fattening become sustainable.

REFERENCES

1. MoA (Ministry of Agriculture), 1997b. Ruminant Livestock Development Strategy, Addis Ababa, pp: 87.
2. Jabbar, M.A. and A. Gezahegn, 2003. Livestock Marketing, Food Security and Related Issues in Ethiopia, A Paper Prepared for the Workshop on 'Towards Sustainable Food Security in Ethiopia: Integrating the Agri-food Chain' held at Ghion Hotel, Addis Ababa, Ethiopia, 15-16 May 2003.
3. UNDP-EUE, 2002. A support unit for the United Nations system in Ethiopia, UN emergencies unit for Ethiopia welcome to the UN-EUE home page, Addis Ababa, Ethiopia.
4. MoA (Ministry of Agriculture), 1997b. Ruminant Livestock Development Strategy, Addis Ababa, pp: 87.
5. Zewdu, K. and G.M. Sintayehu, 1987. Livestock market survey results of animal resources marketing department. In: Institute of Agricultural Research Proceedings of the First National Livestock Improvement Conference. 11-13 February 1987, Addis Ababa, Ethiopia, pp: 97-99.
6. LDMA, 2010. Annual progress report, Livestock Development and Marketing Agency, (LDMA). Ilu Aba Bora Zone Department of Agriculture. Mettu, Ethiopia.
7. Tesfaye, M., 2007. Characterization of cattle milk and meat production, processing and marketing system in Metema district, Ethiopia. M.S. thesis, Hawassa Univ., Hwassa, Ethiopia.
8. Habtemariam, K., 2000. Livestock production, household food security and sustainability in smallholder mixed farms: A case study from Kombolcha Woreda of Eastern Ethiopia. M.S. thesis. Swedish Univ. of Agricultural Sciences, Department of Rural Development Studies, Uppsala.
9. Jepsen, O. and M.J. Creek, 1976. Comparative fattening performance of two types of cattle in Ethiopia. World Review of Animal Production, 12: 83-90.
10. Daniel, T., 2008. Beef cattle production system and opportunities for market orientation in Borena zone, southern Ethiopia. M.S. thesis, Haramaya Univ., Ethiopia, pp: 139.
11. Workneh, A. and J. Rowlands, (ed.), 2004. Design and execution and analysis of livestock breed survey in Oromiya regional state, Ethiopia. OADIS (Oromia Agricultural Bureau), Addis Ababa, Ethiopia and ILRI (International Livestock Research Institute), Nairobi, Kenya, pp: 260.