

ASSESSMENT ON THE BEEF CATTLE PRODUCTION AND MARKETING SYSTEMS OF SMALLHOLDER CATTLE FATTENING PRACTICES IN JABITEHNAN DISTRICT, AMHARA REGION, ETHIOPIA

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SUMMARY

The study was carried out to characterize the beef cattle production system and to characterize marketing system of the current smallholder cattle fattening practices. The study was conducted using questionnaire-based survey by interviewing a total of 120 household heads involved in cattle fattening practices selected by a systematic random sampling method from seven rural kebelles in the mid altitude and two kebelles in Low altitude agro-ecologies of Jabitehnan district in Amhara National Regional State, Ethiopia. Moreover, focus group discussions, field observations and Rapid Market Appraisal (RMA) techniques have been carried out. Descriptive statistics, one way ANOVA and DMRT for comparison of means were carried out using SPSS version 16 software and Chi-square (χ^2) test was employed to test the association of different qualitative categorical variables. The basal feeds were fresh cut green forage including improved forage and weeds took higher proportion (63.3%), followed by maize stover and stubble grazing (22.4%), pasture grazing (9.7%), and hay (5%). The three types of houses for fattening cattle are separated room in the family house (62%), enclosed barn with simple shade (22.4%) and housed together with humans (15.6%). Sources of fattening cattle were culled oxen due to old age or being unproductive (34.6%), immediate purchase for fattening (55.7%) and both culled oxen and immediate purchase (9.7%). Lack of capital and credit significantly affect ($P < 0.05$) the practice in the mid altitude than in the low altitude. Average price of cattle before and after fattening were about 2297 and 3670 birr, respectively, which resulted in gross profit of about 1359 birr per fattened cattle that came from price margin and feed margin over 97 days of feeding period. It can be concluded that even though the cattle fattening practices carried out by smallholders are more of traditional; it could be one potential strategy to improve the income of smallholders if the present existing constraints could be avoided.

Key words : Agro-ecology, production system, cattle fattening, feed resources, marketing system

The livestock population of Ethiopia is believed to be one of the largest in the world and the largest in Africa totaling up to 134.33 million animals (NABC, 2010). The livestock sub sector contributes about 12% and 33% of the total agricultural Gross Domestic Product (GDP), respectively, and provides livelihood for 65% of the population (Ayele *et al.*, 2003). Livestock is primarily kept on smallholdings where it provides draught power for crop production, manure for soil fertility and fuel, and serves as a source of family diet and source of cash income (from the sale of livestock and livestock products) particularly when markets for crops are not favorable (ibid). There are, however, key constraints to the productivity of livestock in Ethiopia Feed shortage, livestock diseases, lack of extension service, lack of enough credit, inadequate market places, lack of adequate supply of good condition animals, lack of holding (concentration) places, shortage of stock supply for

fattening/reproduction, lack of market information and low price due to poor body conditions (Berhanu *et al.*, 2007). The area of land allocated to grazing in the highlands progressively declined through time due to the expansion of cultivation (Alemayehu, 2002; Zerihun, 2002). As a result of this, scarcity of feed resources is the major bottleneck to livestock production in the highlands of Ethiopia, where natural pasture and crop residues are the major sources of feed supply to livestock (Zerihun, 2002). However, these feed resources are inadequate quantitatively and qualitatively to support reasonable livestock production (Mohamed-Saleem and Abate, 1995). In Ethiopia, there are three types of cattle fattening systems namely; traditional, by-product based and the Hararghe type of fattening which varies mainly depending on the available feed resources, source of fattening cattle and marketing conditions (Arend Jan Nell, 2006).

Statement of the problem

Even though smallholder cattle fattening practices have been practiced for many years, the marketing system is not characterized in the study area. Even if detail- constraints and opportunities have not yet been compiled out, the district seems suitable for cattle fattening due to suitable market access and presence of two all-weather roads connecting with Bahir-Dar and Addis Ababa. Apparently the district is known in cereal crop production and the resulting crop-residues could be used as potential feed source, there may be still mishandling and lack of feed resources. Besides, there may be lack of proper selection of fattening cattle, lack of working capital and credit, lack of market information and marketing system; which may lower the performance of cattle fattening. Hence, the producers may not get reasonable benefit from their fattening activities unless appropriate improvement strategies are introduced.

Objectives of the study

The general objective of the study was to generate baseline information that could be used for future interventions to develop market-oriented cattle fattening program within the integrated mixed crop-livestock system. The Specific objectives were to characterize the beef cattle production system and to characterize the marketing system of smallholder cattle fattening practices.

MATERIALS AND METHODS

Description of the study area

The study was conducted in Jabitehnan district, which is found in West Gojjam Administration Zone, Amhara National Regional State. Jabitehnan district is situated at about 387 km North-West of Addis Ababa at the main highway through Debre Markos leading to Bahir Dar and about 176 km from Bahir Dar town. The two traditional agro-ecological zones found in Jabitehnan district are mid altitude(88%) and low altitude(12%). The altitude of the district ranges from as low as 1500 to 2300 m.a.s.l. (JDOA, 2011).

Sample size and sample selection procedure

A multistage sampling procedure was employed to select representative kebeles and households. Kebeles were purposively selected from

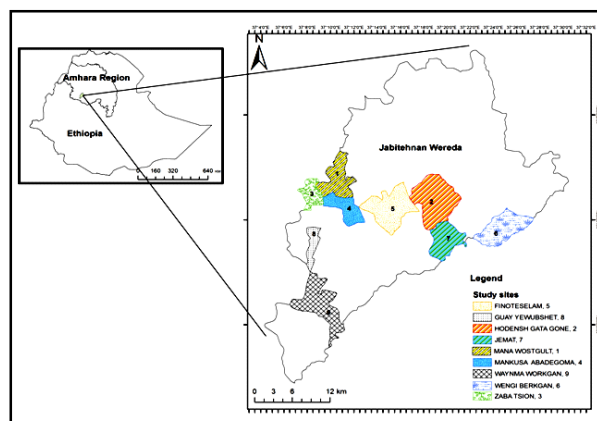


Fig. 1. Map of Jabitehnan District and Sample sites (Source: Produced on ARC Map software from Amhara Region shape file).

each of the two agro-ecologies based on the population of beef cattle in each Kebele. Accordingly, kebeles that have relatively higher beef cattle population in the production system were considered for the study.

A systematic random sampling method was employed to select 106 households from the selected rural eight kebeles in the district. Whereas, 14 households were selected from the selected rural kebele found in Finkoteselam city. A total sample size of 120 households was selected from the study area. Out of which 93 households were selected from 7 kebeles in the mid altitude and 27 households were selected from 2 kebeles in the low altitude based on beef cattle population.

Data collection techniques

Two sources of information were considered to collect the required data. Both secondary and primary data sources were used. Primary data sources are the household heads, Traders and Butchers in the district. The secondary data sources were taken from the district agricultural offices, zonal office of agriculture and NGO's of the district and documents that have been written about the study area. PRA techniques such as individual and group discussion with key-informants were held to collect wide range of qualitative data. Focused formal survey was conducted using semi structured and pretested questionnaire to quantify some of the important parameters (herd size, length of feeding period, price of cattle before and after fattening, number of fattening cattle per household) for the study.

The specific procedure used for data collection depends on the type of data that was sought and the sources of information. The study was

composed of two main components as beef cattle production system and marketing system of the smallholder cattle fattening practices. Accordingly, the procedures of data collection pertinent to the two component studies were discussed separately.

Collection of data

Primarily, over view of the area was perceived through discussion held with agricultural extension officers, experts and development agents. Group discussion with key informants was also employed to know the overview of smallholder cattle fattening practices in the area. A questionnaire-based survey was used to collect data needed for assessment of the fattening cattle production system and marketing system in the area. Before starting data collection, the questionnaire was translated into the local language and pre-tested using purposively selected key informants, such as elderly persons and farmers with long time of experience in cattle fattening practices. Accordingly, many of the questions in the questionnaire were restructured or rephrased for the purpose of clarity.

Data collection was performed under close supervision of the researcher. Accordingly, data collectors were visited and monitored regularly while conducting the survey as well as each questionnaire was promptly checked up on submission to verify biased and ambiguous information and when necessary, concerned enumerators were promptly contacted for explanation while they have fresh memory about the issues.

In order to characterize the marketing system of marketable live cattle for meat purpose, Rapid Market Appraisal (RMA) technique was employed (Berhanu and Moti, 2008). Before administering RMA on the different marketing agents, the number of permanent cattle traders and butchers in the study area were identified. The qualitative data obtained from these market agents were used to summarize marketing chains, marketing channels, marketing problems and possible solutions.

In the study area, producers, traders, butcher houses and consumers were identified as marketing agents. Available butcher houses and cattle traders were interviewed with the help of separate topical guidelines (checklists) at four main market places in the district, namely, Finoteselam, Menkusa, Jiga and Laybir. Whereas, the producers (N=120) as a whole were interviewed with the help of semi-structure

questionnaire, which contained questions about fattening practices and marketing system.

Moreover, to study marketable oxen's live weight and body condition in relation to their market price, heart girth measurement of 80 oxen sold for slaughter was taken at the four major market places of the district on eight market days. This information was used to estimate the live weight and condition of marketable oxen and price offered at each market place.

Data analysis

Statistical analysis of the primary data was made using the statistical package for Social Science (SPSS, 2010) version 16. Survey results were reported using descriptive statistics. Chi-square (χ^2) test was employed to test the association of different qualitative categorical variables included in this study. One way ANOVA and Mean comparisons for some of the variables such as landholdings, livestock holdings and prices were declared using Duncan's multiple range test (DMRT). Data related with pricing, collected for the characterization of cattle marketing system were analyzed using descriptive statistics and data collected using RMA technique were reported with flow charts and summarized discussions.

RESULTS AND DISCUSSION

Family size and educational level of the household

Responses of the household survey showed that the average family size of the households to be 5.91 ± 0.16 which is slightly higher than the Amhara regional average 5 persons per household (Girma *et al.*, 2003) and 5.2 persons per household of the national average (CSA, 2003) and almost similar to 6.22 persons per household (Adebabay, 2009) in Burie District. Out of this, males accounted for 52.4 % and females accounted for 47.6 %, which is similar to the finding of (Shitahun, 2009) that is 53.84 % and 46.16 % for males and females, respectively. Out of the total family size indicated above 47.8 % of the family was under the age of 15-55 years, 34.7 % was under the age of <15 years and 17.5% was under the age of >55 years. The higher percentage of the age structure between 15-55 years as compared to <15 and >55 years has a positive implication in the availability of labor for the fattening practices carried out by smallholders.

It is obvious that education is a base for any

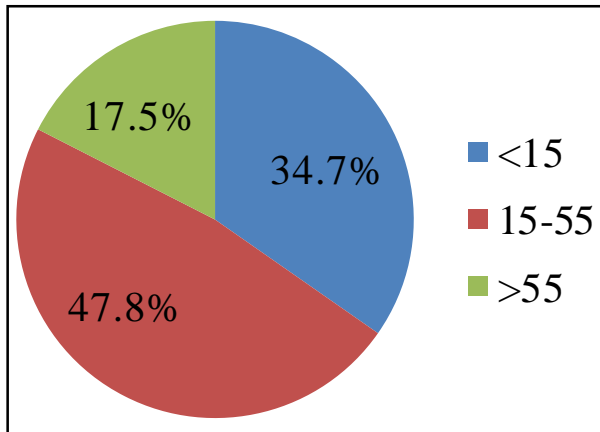


Fig. 2. Family size by age of Jabitehnan District.

development. Results of this study shows that 28.3% of the sampled household heads are illiterate, 39.4 % can only read and write, 25.6 % of them were enrolled in primary and junior schools, 5.1 % attended secondary school and 1.6 % attended preparatory. The results of the current study shows that participants attended literacy and over (71.7%) were more involved in cattle fattening than those who cannot read and write (28.3%). This may be due to participants that are on literacy and over may be more awarded the benefits of the fattening practices than who cannot read and write. The higher percentage of literacy and over may be one opportunity for participants to adopt knowledge about the fattening and marketing practices delivered through training and extension service.

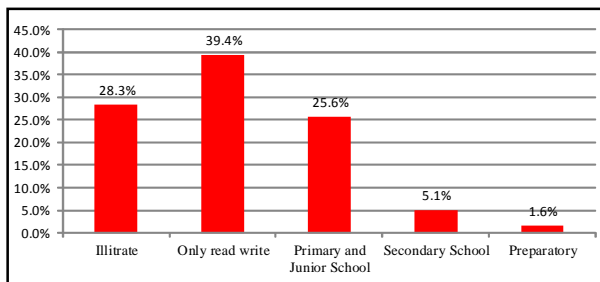


Fig. 3. Educational Level of the Household.

The role of gender and division of labor in cattle fattening practices

The participation of female headed households (2.5%) was significantly ($P<0.05$) lower than male headed households (97.5%) in cattle fattening practices. This does not mean that the participation of females within a household in fattening practices was limited rather the reverse holds true in the participation of different fattening activities such as herding, feeding and watering and cleaning the barn.

The results of this study showed that most of

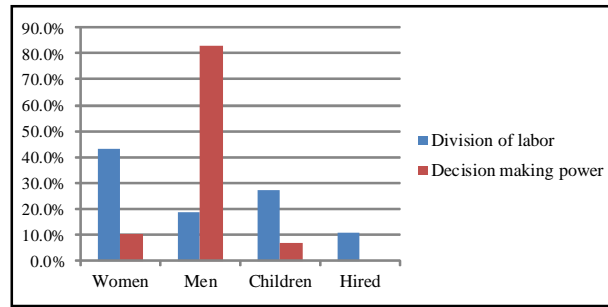


Fig. 4. Division of labor and Decision making Power in Fattening practices.

the fattening practices are carried out by women. The contribution of women in the fattening practices with regard to herding, feeding and watering and cleaning the barn was 43.3 % followed by children (27.2%) and men (18.7%).

The contribution of women with regard to labor was significantly higher ($P<0.05$) than men and children. However, men (82.8 %) mostly the head of the family carried out purchasing and selling of cattle. In reality purchasing and selling of cattle is not considered as labor rather it signifies decision-making power of men and the involvement of women (10.3%) in the decision making process is significantly lower ($P<0.05$) than men (82.8%). This may be due to culturally men are decision makers within the family. This is similar to the summary report of a seminar carried out by Center of Tropical Agriculture (CTA, 2002) in Uganda, which reported that married women are considered to be under the total guardianship of their husbands in that any property they acquire is automatically vested in the husband.

Major feed resources and feeding system for fattening cattle

Among the major basal feeds given for the fattening cattle, fresh cut green forage (including improved forage and weeds) took the higher proportion (63.3% of the respondents), followed by maize stover,

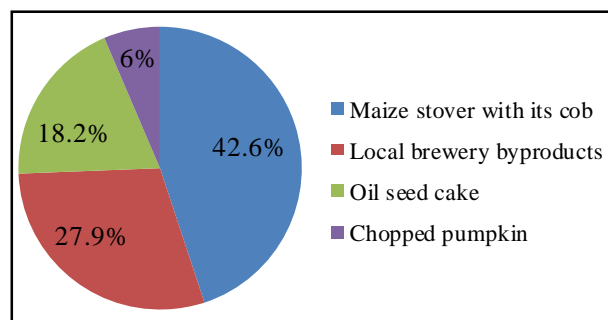


Fig. 5. Major feed resources.

pasture grazing, and hay with 22.4%, 9.7% and 5% of the respondents, respectively.

From the feed supplements given to the fattening cattle in the study area, maize grain with its cob was the leading feed supplement which accounted for about 42.6% and was followed by local brewery byproducts (27.9%), oil seed cake (18.2%), chopped pumpkin (6.1%), and mixed ration prepared at home (5.2%). About 26.7% of the households did not provide supplementary feed for their fattening cattle due to different reasons. The reasons pointed out by the respondents include higher cost (73.7%) and unavailability in the area (26.3%).

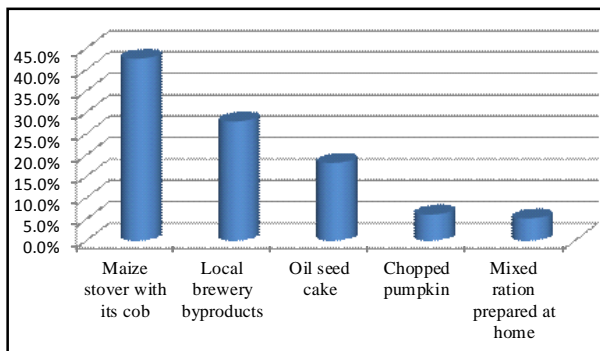


Fig. 6. Major feed supplements.

For fattening cattle in addition to free grazing; tethering, stall-feeding or mixed (free grazing, tethering and stall feeding) are practiced as shown in Fig. 7.

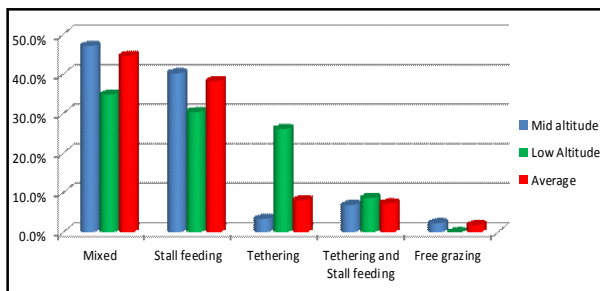


Fig. 7. Feeding system of cattle system.

In the morning (before 10 AM) and after 4 PM, the fattening cattle are released to graze freely on the boundaries of croplands. However, between 10 AM and 4 PM the fattening cattle are tethered under the trees or near the barn or stall in the barn and fed either the basal feeds or supplements.

The result of this study indicated that tethering was more practiced ($P < 0.05$) in the low altitude than in the mid altitude. This could be due to the lack of family labor in the low altitude taking the fattening cattle and tethering when weeding or harvesting or keeping the crops on cultivated land is a

common practice in the low altitude than in the mid altitude.

Sources of fattening cattle

The sources of fattening cattle were immediate purchase for fattening (55.7%), culled oxen due to old age or unproductive (34.6%) and both culled oxen and immediate purchase (9.7%). The source of fattening cattle from culled oxen due to old age or being unproductive (34.6%) in the current study was lower than (51%) that reported by Shitahun (2009) in Burie district. The source fattening cattle from immediate purchase was significantly higher ($P < 0.05$) than from culled oxen due to old age or being unproductive.

This may be due to the reason that smallholders are realizing the benefits of fattening practices into account. Culled oxen were used for fattening more in the mid altitude than in the low altitude. This may be due to the lack of enough capital available in the mid altitude limits the participants to purchase cattle for fattening.

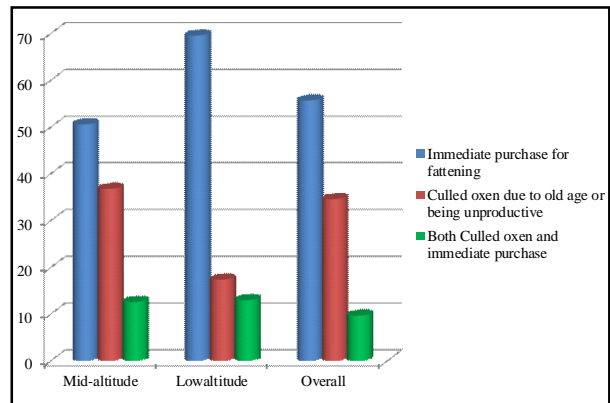


Fig. 8. Source of fattening cattle.

Selection criteria of fattening cattle

When smallholders in study are purchase cattle for the purpose of fattening, they considered type of animal, sex, age, productivity and other characteristics (Body size/frame; Health; Body condition; Price; Color; Adaptation and presence or size of the Horn). The type of animal smallholders selected for fattening were cattle (76.7%), cattle and sheep (16.4%), sheep (5.2%) and all cattle, sheep and goats (1.7%) in the descending order. There was no significant ($P > 0.05$) different in the type of animal being selected for fattening between the two agro-ecologies. The general reasons indicated by respondents why they preferred cattle for fattening were having better profit (67.6%), shorter fattening

period (18.5%) and both better profit and shorter fattening period (13.9%). There was no significant ($P>0.05$) difference in the reasons why cattle were more preferred than sheep and goats between the two agro-ecologies. Cattle have shorter fattening period than sheep and goats. The reasons for these are at farmers' management level with the available low quality and quantity feed resources, sheep and goats required longer fattening period than cattle. On the one hand, culturally purchasing of sheep and goats for fattening focuses on uncastrated or younger sheep and goats and fattening and selling them after castration and maturation may take longer period (as long as half or a year in most cases). With regard to sex preference for fattening, males were more preferred ($P<0.05$) to females. The reasons suggested by the respondents were that males have shorter fattening period (37.7%), high market demand and shorter fattening period (16.9%), higher market demand (14.4%), greater body size and culturally more acceptable (9.75%), dual purpose (plowing on the way of fattening) (8.6%), fetch better profit (6.48%) and mixed higher market demand, shorter fattening period and fetch better profit (6.17%).

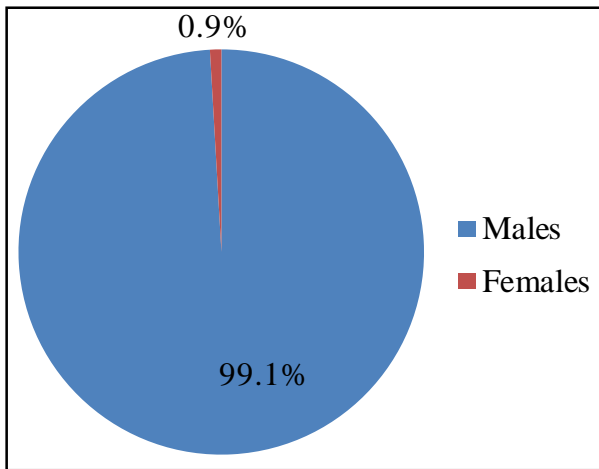


Fig. 9. Sex preference of fattening cattle.

The other criteria smallholders used when purchasing cattle for fattening were ranked 1st-9th as Body size or frame, Age of cattle, Health, Color, Price, Body condition, Adaptation, Presence or size of the horn, Breed respectively in the descending order of importance. There was no significant difference ($P>0.05$) in the use of the above-mentioned criteria when purchasing between the two agro-ecologies.

Season of cattle fattening

According to the response of smallholders and discussions held with focused groups in each kebele,

cattle fattening was dependent on season by considering the resources available in the area such as feed, labor and market demand. Season of cattle fattening had no significant difference between the two agro-ecologies. About 78.2% of the cattle fattening practices were carried out starting from mid-August and in areas where chickpea agriculture is practiced, about 17.6% of cattle fattening practices are done starting from October. The reasons for both cases are availability of enough labor due to the plowing activity was finished, optimum feed supply on the specified periods and the need to supply fattened cattle for Christmas and Epiphany.

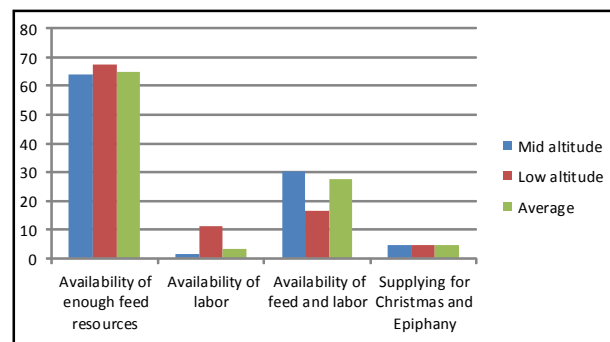


Fig. 10. Reasons for most smallholders starting cattle fattening on Mid-August.

The remaining 4.2% of the cattle fattening is carried out starting from January to April aiming to supply fattened cattle for Easter. The low percentage of cattle fattening during Easter was due to feed scarcity, lack of labor, lack of capital (most smallholders invest their money on agricultural inputs such as fertilizer, improved seed and even they purchase oxen for plowing). Starting from May (after Easter) up to early August, cattle fattening is totally absent in the study district. The possible reasons for the absence of cattle fattening during the specified period were ranked from 1st up to 6th as feed scarcity, high demand of family labor for other agricultural activities, high demand of oxen for plowing, lack of capital due to the high demand of agricultural input, dampness of feeding areas and low market demand for fattened cattle in the descending order.

Length of fattening period

Five fattening lengths have been identified in the study area. These were 2 months (12.5%), 3 months (50%), 3.5 months (20.5%), 4 months (14.3%) and 4.5 months (2.7%) of the fattening period. However, fattening lengths in low altitude agro-ecology were 3 months (72.7%), 3.5 months (13.6%) and 4 months

(4.6%). Whereas in mid altitude agro-ecology the fattening lengths were 2 months (13.3%), 3 months (44.4%), 3.5 months (22.2%), 4 months (16.7%) and 4.5 months (3.3%). The mean fattening lengths were not significantly different ($P>0.05$) between low altitude (94.4 days) and mid altitude (97.8 days) agro-ecologies. This may be due to the use of similar type of basal feed resources and supplements.

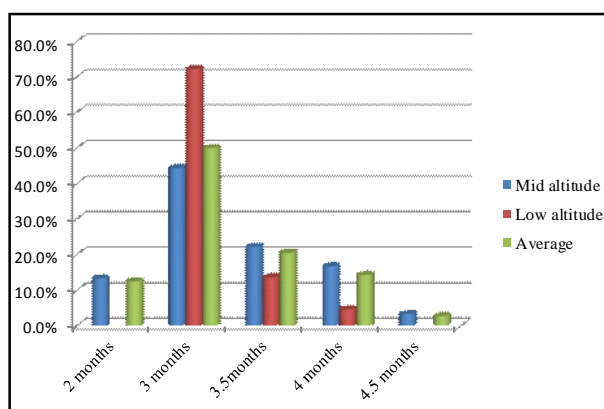


Fig. 11. Length of fattening period.

From the fattening lengths, 3 months (50%) and 3.5 months (20.5%) are optimum. This may be due to most of the cattle fattening (78.2%) was carried out starting from mid- August when green pasture and supplementary feed particularly maize grain with its cob and chopped pumpkin are available. Shitahun (2009) also reported that fattening cattle fed with supplementary feed would finish within 3 to 3.5 months of feeding lengths. The average length of fattening in this study was estimated to be 97 days.

Markets and Marketing

The marketing system of the study area is characterized by several shortcomings. Most of the markets in the district did not show any improvement from their early traditional roots. It can be characterized by a large number of highly dispersed markets, which generally lack basic infrastructural facilities like perimeter fencing, cattle pens, weighing scale, watering, feeding and quarantine places. Purchasing is done through eyeball negotiations. Marketing of almost all livestock species are carried out at the same open area by mixing together without any shade and structural separation. All animals may be at risk of disease transmission from infected to healthy. The two common market days in the major marketing places in the district are Saturday and Tuesday. The similarity of market days within the major marketing places may have their own impact

on the overall market flow. This may be due to the similarity of market days may limit traders and smallholders at a limited number of marketing places.

Transportation

Almost all the interviewed smallholders (100%) and traders (96.2%) reported that cattle were trekked on foot while purchasing and selling took place. According to a discussion held with cattle traders, they encountered a number of problems when transporting their animals including poorly maintained roads with potholes, insecurity and impassable. Some cattle traders (3.8%) who were transporting animals to Metema and Sudan reported that there is high live animal transport costs associated with overloading. Traders from Menkusa indicated that the transportation cost was birr 1,125 per head and 16 heads were transported with one Isuzu (FSR) track. Measurements showed that the area of one Isuzu (FSR) transportation track is about 5 meters long and 2 meters wide (10m^2) that means 0.625m^2 per head and which is not enough to transport live animals in secured and comfortably. The number of animal transported (16 cattle) in the current study is higher than Berhanu et al (2007) who reported that apparently to avoid weight loss and deterioration in body condition, an Isuzu truck could carry 6-10 cattle.

Lack of market information

One of the limitations of cattle markets in the study area is their lack of information. About 58% the respondents get market information by self-checking prices at markets which are found near their residence and some (31.7%) get prices of information from social interactions in their respective peasant associations while only 1.7% receive information from agricultural extension agents and 8.2% from nearby fattening farms. The result of the current study showed that there was no significant difference ($P>0.05$) in source of cattle market information between the two agro-ecologies. However, one of the duties of extension agents is to give market information to farmers (BoARD, 2008). In view of this, market information received from extension agents was insignificant.

Even though most cattle traders in the study area face inadequate access to cattle market information, some local assemblers and retailers get information by self-checking from nearby markets as smallholders did. The available medium traders used mobile phone for market information within the country and even information on export prices.

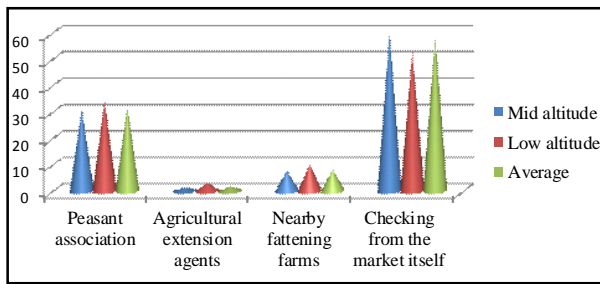


Fig. 12. Sources of Market information.

Lack of working capital by traders

Lack of working capital was one of the shortcomings of smallholders, local assemblers and retailers have been constrained. The amount of cattle, smallholders, local assemblers and retailers purchasing are limited within a range of 1-2, 1-4 and 8-15, respectively. Availability of credit from Amhara Credit and Saving Institution (ACSI) and Service Cooperatives is a solution indicated by all interviewed traders. However, the major problems associated with credit were the amount of credit being low, the monthly credit returning procedure, long credit procedure and high interest rate associated with informal credit receiving from local money lenders in the descending order.

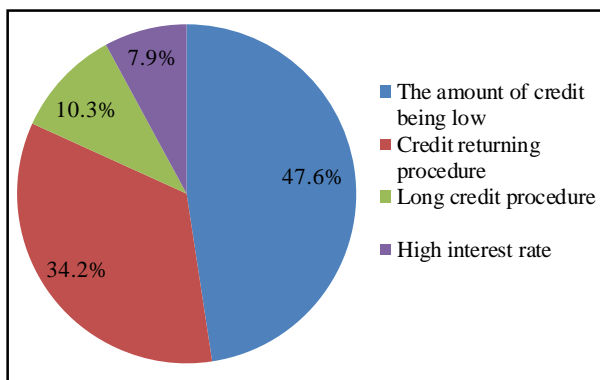


Fig. 13. Major problems associated with credit.

According to discussions held with traders, the maximum amount of credit traders being received from Amhara Credit and Saving Institution (ACSI) is birr 7,500, which is not enough to purchase more than one cattle and it was a constraint particularly for those having very low capital. Most traders reported that the amount of credit from credit institutions should be taking purchasing power of money into account. The credit returning procedure of traders is on a monthly basis unlike smallholders who disburse the loan being received at the end of the year. The real problem here was most traders likely to sell their cattle at periods when there is better price and demand at hand so that

they kept their cattle as long as two or more months to fetch better price and profit. In this regard, most of them are forced to sell their cattle even with cheaper prices on days when the loan is repaid.

Some local assemblers and retailers reported that the credit procedure is long and cumbersome particularly for those receiving credit for the first time. In the study area, one of the principal suppliers of business credit for cattle traders is the Amhara Credit and Saving Institution (ACSI). This institution is lending credit to traders on group basis. According to discussions held with Amhara Credit and Saving Institution (ACSI) the formal procedures to be followed by eligible applicants before they receive credit are :

- The local association in which the applicant area of residence must be within the outreach program of the institution.
- Borrowers have to address their formal application in written form to the client targeting committee within the locality.
- The committee in turn screens out potential borrowers based on the criteria of the institution.
- If accepted, the applicants form groups. The groups should be self-initiated.

To finish these procedures, the credit may not be available at periods when traders need to invest. The other problem pointed out by some traders was if the numbers of borrowers in the group are not enough as per the institution's rule, no one receives the loan. Because of these constraints, most traders were forced to receive credit from local lenders with high interest rates.

Marketing system of cattle

Purchasing and selling place of cattle

In the mid altitude agro-ecology of the study area, matured and used for traction oxen about 8-10 years old are purchased from the local markets named as Derequa, Menkusa, Finoteselam, Jiga, Maksegnin and Dembecha. According to the respondents' view, most smallholders purchase cattle for fattening from markets that are available near their residence. However, some smallholders were going for purchase to markets which are in a longer distance, demand deficit and poor road networking. This is because of plowed oxen in such markets were relatively cheaper

than markets available nearby or in Urban and peri-urban centers. About 50% of the respondents were marketing their fattening cattle less than 5km distance, 46% of the respondents were purchasing or selling their fattening cattle 5-10 km distance and only 4% of the respondents were marketing their fattening cattle 10-15 km distance. From this it can be concluded that the distance of marketing places may not be a constraint for cattle Marketing practices.

In low altitude agro-ecology of the study area, purchasing of fattening cattle mostly took place in the village, Menkusa local market, Horrogodru woreda of Oromia region, Kuchi local market and Lay birr local markets, in the ascending order respectively. Whereas in mid altitude agro-ecology, purchasing of fattening cattle was carried out at Menkusa, Jiga, Finoteselam, Dembecha, Derequa, Maksegnin, in the village, Laybir and Agut local market in the descending order respectively.

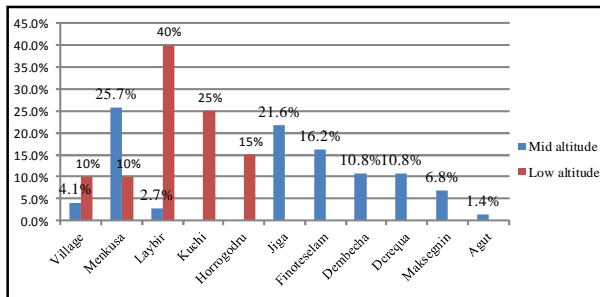


Fig. 14. Purchasing places of fattening cattle.

The study indicated that overall in the study area, selling of fattened cattle was undertaken at Finoteselam town, in the village, Menkusa, Jiga, Burie, Dembecha and Laybirr local market. From the data, it was concluded that smallholders are purchasing and selling their cattle at markets available near their residence.

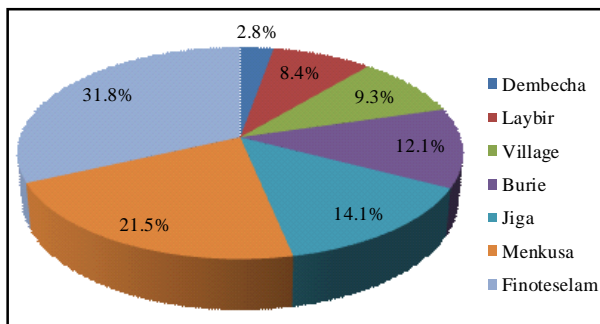


Fig. 15. Selling places of fattening cattle.

However, when there is a cheap purchasing price or markets having good selling prices; smallholders go to a longer distance nevertheless the

distance of the marketing place. This may be due to whatever the case their aim is maximizing profit from the fattening practice.

Market participants

According to the observations made at the four major market places of the district, the major market participants were identified as smallholders, local assemblers, retailers, consumers and butchers in the descending order.

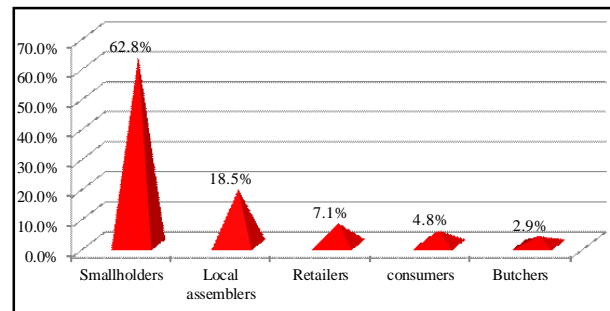


Fig. 16. Market participants.

Marketing flow and channels

The cattle marketing system of the study area is the complex web of relationships among its key participants, namely smallholders, traders and butchers. The links between these agents could be described by an analysis of marketing flow and channels. The overall purpose of these channels is to transport and sell the cattle produced by smallholders, to transform it into products and distribute it to consumers. Depending on the involvement of the market participants in cattle marketing from the smallholder to the consumer, the following marketing channels were observed. The common characteristic of these market participants is that they all purchased cattle from smallholders. Nevertheless, the type of product, which they distribute to consumers, varies from live animal to products such as slaughtered animal and meat.

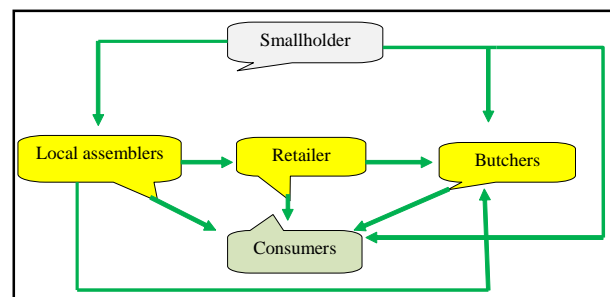


Fig. 17. Marketing channel of cattle in Jabitehnan District.

Condition and weight of marketable oxen

According to the market assessment carried out on the major market places in the district, about 35.3% of the cattle sold were at grade 2, about 59.4% of the cattle were at grade 3 and the rest 5.3% were at grade 4. Results of heart girth measurement showed that the mean weight of marketable oxen was 317.12 ± 7.16 kg which was less than 341.24 kg that reported by Shitahun (2009) in Burie District. The absence of grade 1 and most of the cattle (59.4 %) being at grade 3 indicated that the livestock production was constrained by a lot of constraints such as feed resources and animal health problems.

Purchasing and selling price of cattle

According to the respondents, the overall in the study area the mean price of cattle before and after fattening were about 2297 birr and 3670 birr, respectively, and resulting with gross profit of about 1359 birr per fattening cattle, which comes from price margin and feed margin.

Average purchasing price of fattening cattle was lower ($P < 0.05$) in the low altitude than in the mid altitude. This may be due to the relative abundance of Horro cattle that resulted from extensive cattle production in the surrounding low land areas. Average selling price of fattened cattle was not significantly different ($P > 0.05$) between in the low altitude and mid altitude agro-ecologies. This may be due to smallholders were sold their fattened cattle where markets having better price and demand at hand nevertheless the distance of marketing place.

According to respondents, mean gross profit of fattened cattle in low altitude kebelles was 1394 birr and not significantly higher ($P > 0.05$) than in the mid altitude kebelles which was about 1281 birr. However, market assessment showed that the mean price of fattened cattle was about 3394 birr and ranged from 2350 birr to 4750 birr.

According to discussions held with focused groups, the price of fattened cattle was higher during Easter as compared with Christmas. This may be due to the availability of labor and feed resources during Christmas may be allowed most smallholders involved in cattle fattening practices. Hence, supply was expected to be comparable to or more than demand and then the price of fattened cattle may be low.

Relationship between buyers and sellers

According to the market assessment carried

out during the study on different market places in the district, prices were smoother when there is a relationship between buyers and sellers than no relationship at all. According to the responses held with respondents, 54.3 % of the respondents sold with lower prices when the buyers are relatives or friends. The rest 45.7 % sold their cattle with the normal prices even if there is any relationship between buyers and sellers.

In fact, selling with lower prices for relatives or friends is not an aimless wandering but sellers were thinking that the buyers are their common customers for the future when marketing their fattened cattle.

Mode of payment

According to the responses held with household survey, 100 % of the respondents were sold their fattened cattle in cash. However, some traders sold their cattle in credit transaction for Butchers and Hotels particularly when the selling price is lower than expected. Cattle traders were use this mechanism to mitigate or cope up the loss in profit when prices are lower than expected. Prices are higher for credit transaction than cash payment.

This type of payment had its own impact on traders and smallholders similar to that reported by NABC (2010). The credit transaction may stay as long as two or more months. This may be affecting the number of turnover in the trade, lost the profit that can be able to earn from the cattle trade in the one hand and affecting the marketing system, and fattened cattle prices of smallholders on the other hand.

CONCLUSION

Crop residue and natural pasture were the major feed resources during dry and wet seasons, respectively, in both agro-ecologies. Of the basal feeds given for the fattening cattle, fresh cut green forage took higher proportion followed by maize Stover, hay and pasture grazing, respectively.

The sources of fattening cattle are immediate purchase for fattening, followed by culled oxen due to old age or being unproductive and both culled oxen and immediate purchase. Type, sex, age, body size/ frame, health, body condition, price, color, adaptation and presence or sizes of the horn are selection criteria when purchasing cattle for fattening. Cattle are the most preferred type of animals for fattening to sheep and goats. With regard to sex, males are more preferred for fattening than females. The type of cattle selected

for fattening are more dependent on age and productivity that means older and unproductive cattle are more preferred by smallholders for fattening than young and productive ones.

Most of the cattle fattening practices are carried out starting from Mid-August, starting from October, and from January to April in the descending order. The average length of fattening in the current study was estimated to be 97 days. The marketing system of the study area was characterized by several shortcomings. Most of the markets in the district have not shown any improvement from their early traditional roots. Purchasing was done through eyeball negotiations. Cattle are trekked on foot while purchasing and selling took place. In general, it can be concluded that even though the cattle fattening practices carried out by smallholders are more of traditional; it could be one potential strategy to improve the income of smallholders if the present existing constraints could be solved.

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