Cattle Fattening Practice and Marketing System  
(Study in Janamora Wereda)

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Abstract: A study was conducted from January to February, 2019 with the objective to assess cattle fattening and marketing system in Janamora Wereda by interviewing 45 cattle fattener households selected from three kebeles (Mekane Birhan, Deresgie and Rob Gebeya) purposively. Fattening length and age for oxen were 3 months and 7 years, respectively. Household source of income were livestock production (48.89%). Half of the respondents were selecting red coat colour cattle’s for fattening and 84.44 % of them are castrating male animals before the commencement of fattening. Marketing fattened animals during main holidays. The price was highest from February to June, where as low from September to January. Major sources of feed used for fattening cattle were bean straw, nug cake, chick pea, wheat bran, wheat straw, barely straw and teef straw, 24.44%, 17.78%, 15.56%, 13.33%, 11.11%, and 4.44%. Lack of capital (40%) were the main constraint to begin cattle fattening and other constraints were feed shortage, shortage of land, and animal health problem in order of importance 24.44%, 15.56%, 13.33%, 6.67%, respectively. Therefore, from the present study, it can be conclude that cattle fattening in Janamora Wereda is one of the potential strategy to improve the livelihood of the family.

Keywords: Cattle Fattening, Janamora & Marketing.

1. INTRODUCTION
In Ethiopia, agriculture is the main economic activity and more than 80% of Ethiopian population is dependent on agriculture of which livestock play a very important role [1], According to (BOFED) report [2], the agricultural sector in the Amahara region contributed nearly 64% to the regional GDP between the period 1994 to 2001. The crop sector takes the lion’s share (61%) and forest covering 12% of the total 3.2 million hectares cultivated area. The area under irrigation and improved seeds was 1.77 and 2.72 % respectively while the area applied with fertilizer was 33 % [3].

Between 1974 and 1998, human population increased by 78% while cattle population increased by 31%, and small ruminant population decreased by 5.6%  Annual growth rate for human population was 2.5% while that for cattle and small ruminants was 1.1 and –0.2%, respectively. During the same period meat, milk and skins and hides production have increased by 23.8, 42.7 and 5.7%, respectively [4].
Despite the large number of livestock, there has been a decline in national and per capita production of livestock, livestock products, export earnings from livestock, and per capita consumption of food from livestock origin since 1974, in comparison to other African countries [5]. Among exports of livestock products, skins and hides have the largest share of exports followed by live animals [6].

In recent years, exports of live animals to the Middle Eastern countries, the traditional outlet for Ethiopian animals, have substantially decreased since these countries have imposed ban on imports of live animals from the Horn of Africa due to prevalence of certain diseases such as Rift Valley fever. In Ethiopia according to [7], 99.4 % of the total cattle populations in the Country are local breeds and the remaining are the hybrids and the exotic breeds that accounted for about 0.5 % and 0.1 %, respectively. Indigenous cattle have been naturally selected for adaptive rather than for productive traits. Selection takes a long time and requires sustained effort to make substantial genetic progress and impact on productivity. However, due to high genetic variability among those indigenous animals, there is a potential to select for productive traits. There are some individual animals with relatively high meat production. Indigenous cattle are preferred to adaptive attributes. Subsistencially smallholders select particularly fattened animals for a range of desirable attributes of their animals, but some of them attributes are related to behavior and body form of animals, which are not necessarily direct related to production functions [8, 9].

Ethiopia is characterized by a high livestock population but low productivity, at least in terms of conventional products such as meat and milk. Meat production and consumption is important in the Ethiopian economy and ruminants contribute over 3.2 million tons, representing over 72% of the total meat production [10]. As cattle population has not kept up with the rate of population growth, there is a strong unsatisfied demand, in the majority of tropical countries, for milk and meat. However, the actual consumption is seriously restricted by the low purchasing power of the majority of the consumers, for whom retail prices are already too high. At the other extreme, the producer is in a difficult position and the course taken, notably for beef, does not allow to envisage the introduction of more intensive techniques, the only ones which would enable an increase in production when the limits of expansion of the pasture area are reached [11].

Crop-Mixed farming system is the predominant farming systems in the highland of Ethiopia. They inhabit nearly 90% of the human population and 70% of the livestock population of the country [12]. Due to the rising of population growth, lack of land pushing many farmers either to intensify the cropping system or diversify the system using other, integrated activities.

1.1. Statement of the Problem

Janamora Wereda was estimated to have less supply of crop-residues; there may be mishandling and lack of awareness about crop-residue improvement. As a result, utilization efficiency of the residues may be low. Besides, there may be lack of proper selection of fattening cattle, fattening practice, lack of market information and also poor managements in relation to feeding system, healthcare, housing etc. Which may lower the performance of cattle fattening? Hence, the producer may not get reasonable benefit from their fattening activity unless appropriate improvement strategies have to be introduced.

1.2. Justification of the Study

Despite good fattening practice associated with excess crop-residue production, market access and suitable cattle breeds have been expected in Mekane Berhan, because little attention given to livestock development in general and cattle fattening practice in particular and much has not been studied about utilization of the available feed resources, fattening practices and marketing system of cattle in the area. Cattle fattening practice and marketing system was under developed which needs deep-investigation about the management and its performance. Thus, on the basis of this background, the current study was initiated to address some research questions about improvement strategies of cattle fattening practices and marketing system in Janamora Wereda.
1.3 Objective of the study
The objective of this study was
✓ To assess cattle fattening practices and marketing system in Janamora Wereda.
✓ To assess cattle fattening practices on-farm level.
✓ To evaluate marketing system of cattle fattening in Mekane Birhan town.
✓ To assess major constraints of cattle fattening in Janamora Wereda.
✓ To identify major feed and feed source of fattening cattle in the study area.

2. MATERIAL AND METHOD
2.1. Description of the Study Area
The study was conducted in Janamora Wereda Janamora Wereda is located in North Gondar Zone of Amhara region, at the latitude and longitude of 12°59′N 38°07′E at a distance of about 180km from Gondar town. Janamora Wereda is well-known with Semien mountain National Park, Ras Dashen i.e. the highest point in Ethiopia and it is a home to a number of endangered species including the Ethiopian Wolf, walia ibex, and a wild goat which no found in elsewhere in the world. The area has an altitude range of 2900 meters above sea level. The region is marked by numerous mountains, hilly, and sloppy areas, plateaus, rivers, and many streams. Livestock population of the area comprises 100,386 cattle, 32,975 sheep, 131,041 goats, 2,540 horses, 634 mules, 7758 donkeys, 119,347 poultry. The farming system of the study area is characterized by a mixed crop-livestock production system. Transhumance, from the highlands to western lowlands, is practiced as an important strategy to secure grazing resources for the highland livestock during the dry season of the year. In the case of the lowlands, crop farming is not as intensive as high and mid-highland areas and livestock has larger contributions to the farmer’s livelihoods [13].

2.2. Data source and type
On this study both primary and secondary data was employed. The primary data was obtained through questionnaire which was distributed for the selected sample and semi structured interview with the concerned bodies: such as owner of cattle fattener. The secondary data were gathered from the reference book, internet and other. The qualitative parameters included gender participation in the cattle fattening farm, the background of the cattle owner, reasons for doing fattening, main constraints for cattle fattening and market system. The quantitative parameters included the family size of the households, total cattle number of the households, number of fattening cattle and length of fattening.

2.3. Sampling Technique
Purposive sampling techniques were employed to select 45 cattle fattener households from three kebeles. They are Mekane Birhan, Deresgie and Rob Gebeya. From the individual who participate in cattle fattening practice are, the owners of cattle fattener in Janamora Wereda were the target population of the study.

2.4. Data analysis and presentation
The data was checked, coded and entered in to Microsoft excel work sheet and was analyzed using SPSS software version 16. Descriptive statistics like percentage was used to express prevalence while chi-square ($\chi^2$) test, binary and multivariate logistic regression were used to compare the association of tick infestation rate with sex, breeds, age groups as well as body condition scores. In all the cases, 95% confidence level and 0.05 absolute precision errors were considered. A p-value≤ 0.05 will be considered statistically significant.
3. RESULT AND DISCUSSION

3.1. Characteristics of household

From the total of respondents the average family size of the households was 6 (ranging from 1 to 8). Majority of the household heads in the study area were married and the male family can be participate in fattening activity. While the age (31-40) of the respondent (71.11 %) highly participate in fattening practice. The major occupation of households in the study area was identified as livestock production, trade and livestock and crop, 40, 23.33, 26.33 % respectively. The educational statues of the respondents were, (1-4), (5-8), (9-12) and above 13.3,20, 46.67, 20% respectively. The respondent whose educational level (9-12) highly participating in cattle fattening practice the reason why this person start cattle fattening was to change their living standards by creating their own business to lead their living.

Table 3.1. Characteristics of the households

<table>
<thead>
<tr>
<th>Sex</th>
<th>Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>38</td>
<td>84.44</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td>15.56</td>
</tr>
<tr>
<td>Age (year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-45</td>
<td>10</td>
<td>22.22</td>
</tr>
<tr>
<td>31-40</td>
<td>32</td>
<td>71.11</td>
</tr>
<tr>
<td>Above</td>
<td>3</td>
<td>6.67</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-4</td>
<td>4</td>
<td>8.89</td>
</tr>
<tr>
<td>5-8 (elementary)</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>9-12 (secondary)</td>
<td>25</td>
<td>55.56</td>
</tr>
<tr>
<td>Above (higher education)</td>
<td>7</td>
<td>15.56</td>
</tr>
<tr>
<td>Source of income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Livestock production</td>
<td>22</td>
<td>48.89</td>
</tr>
<tr>
<td>Crop and livestock</td>
<td>11</td>
<td>24.44</td>
</tr>
<tr>
<td>Trade</td>
<td>8</td>
<td>17.78</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>8.89</td>
</tr>
</tbody>
</table>

The results of the present study were in line with Hossain [14], the average age of the respondent participate in fattening range from 27 to 40 years. In the study area large number of fattener age range from (31-40) which was (71.11 %) of the respondent.

3.2 Cattle fattening practice

Cattle fattening practice was assessed considering the general husbandry issues like major feed resources, source of fattening cattle, selection criteria for purchasing of fattening cattle, method and length of feeding and season of fattening . The time for fattening was time bounded and adjusted with their regular buyers.

3.2.1 Selection criteria of fattening cattle

From the total of household respondents indicated that red colour (50%) cattle were the most preferable for fattening purpose and bulla, Black, White, 26.7, 10, 13.3% respectively. Castration of animals was also a criterion for fattening in the study area. Accordingly 80% of the respondents castrate their animals for fattening while the remaining 20 % of the respondents were not recommending for castration.

Majority of the respondents fatten only male cattle (84.44%), where as some of the respondents fatten both male and female animals (15.56%) in the study area. In addition to the above criterions, all farmers purchased fattening cattle, good body condition, Health, Adaptation, breed and big and stand-high hump.
The present study were in line with Takele [15], and BoARD [16], fatteners in northern part of Ethiopia select fattening cattle of tall height, good body condition and big and stand-high hump in addition to coat color and sex.

### 3.2.2. Age and Duration of cattle fattening

The fattener in the study area fattens mature and much older animals 7-8 years old (53.33%), for short durations (usually three months) (75.56%), 3.5 months (17.78%), 4 months (6.67%) of the respondents. Feeding length was dependent on feeding method in that the cattle being fatten with pure feedlot finished within 3 months of feeding length.

<table>
<thead>
<tr>
<th>Duration</th>
<th>Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3( month)</td>
<td>34</td>
<td>75.56</td>
</tr>
<tr>
<td>3.5(month)</td>
<td>8</td>
<td>17.78</td>
</tr>
<tr>
<td>4(month)</td>
<td>3</td>
<td>6.67</td>
</tr>
<tr>
<td>Total</td>
<td>45</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4. 2. Length of cattle fattening and Age of fattening cattle

The present findings differ with that of the report of Takele [15], and BoARD [16], who reported that cattle feeders fed cattle usually for 4 months in southern and northern Ethiopia, respectively. Also in contrast with Habte Mariam [17], farmers in east Ethiopia fed oxen for more than one year which is also significantly exceeds the average fattening length in southern parts of Ethiopia.

### 3.2.3. Method to decide the end of finishing period fattening cattle

From the total of respondents in deciding the end of finishing period of fattening cattle in the study area were anticipated current and future prices (40 %), by considering rate of live weight change (56.67%) and by calculating feeding length (3.33%) of the respondent.

The present study were in line with that of Shitahun [18], the end of finishing period was decided by considering live weight change of fattening cattle with visual observation based on their feed intake (84.97%) and by anticipating the current and future price (15.03%).

### 3.3. Season of cattle fattening and marketing

From the total of household responses, majority of the cattle fattening was done starting from mid February up to June (60%) b/c the farmer do not sell fattening cattle at this time due to starting plowing the supply of fattening cattle in the market reduce . In some extent cattle fattening activity was done starting from September to January (40%) targeting to deliver fattened cattle for mesk and Christmas.

The price of beef cattle in Mekane Birhan town after fattening on average was 17,000 ETB. The maximum price recorded during the dry season was 29,000 ETB and the lowest was 11,000 ETB, and during the wet season the maximum price was 12,000 ETB and the lowest was 9,000 ETB.

Season of cattle fattening was agreed with the reports of Takele [15], who reported that cattle fattening was a seasonal operation in welaita with a peak from June to September and this is governed by seasonality pattern of feed availability and main holidays. This low extent of cattle fattening activity for mesk and Christmas market was due to the presence of enough green feed, supply of fattened cattle is greater than the demand and decreased purchasing price of fattening cattle. It was also associated with relative low market demand for fattened cattle because of the custom of the local people preference towards consumption of fattened sheep and goats instead of fattened cattle during Christmas. Starting from July up to August, cattle fattening was totally absent in the study area. However, market price was in
contrast with [15, 19], the market price of fattened cattle was highest from September to April. Reason for this might be due to the availability of the main holidays in September (meskel), December x-mas. Marketing system of fattening cattle was underdeveloped due to the knowledge, performance of fattener and little attention given by livestock sub sector.

The fatteners sell their fattened cattle by visual estimation negotiation with customer in the study area. The fatteners sell their fattened cattle by visual estimation negotiation with customer in the study area. The price of fattening cattle depend on weight and age of the animal, Hence, fattening more closely resemble fattening of culled cows, however, the fattener decide the end of finishing period of fattening cattle by considering rate of live–weight change in the study area. However this was in agreement with the findings of Alemayehu [20], who reported that marketing of livestock was not determined on the basis of weight and which was unfavorable marketing system and discourages price on the producers’ side.

Figure 1. Animal production expert who called Muluye Wubneh during attending fatteners in Mekane Birhan town.

3.3.1 Marketing channel of beef cattle

Before and after the Holidays, animals are taken to local market for selling, on market days. Buying and selling are completed through bargaining practice. In the process of cattle marketing farmer, whole seller, trader and butchers are involved. The report of the present study were agreed with that of Rashid [21], marketing channel referred to the sequential arrangement of various marketing intermediaries involved in the movement of products from producer to consumers.

3.4. Feeds and feeding system of fattening cattle in the study area

From the total of household respondents the feed sources which was got from bean straw, nug cake, chick pea, wheat bran, wheat straw, barely straw and teef straw, 24.44, 17.78, 15.56, 13.33, 11.11, and 4.44 respectively in the study area.
Table 3 source of feed for fattening cattle

<table>
<thead>
<tr>
<th>Feed</th>
<th>Respondent (N=45)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bean straw</td>
<td>11</td>
<td>24.44</td>
</tr>
<tr>
<td>Wheat straw</td>
<td>5</td>
<td>11.11</td>
</tr>
<tr>
<td>Barely straw</td>
<td>6</td>
<td>13.33</td>
</tr>
<tr>
<td>Chick pea</td>
<td>7</td>
<td>15.56</td>
</tr>
<tr>
<td>Nug cake</td>
<td>8</td>
<td>17.78</td>
</tr>
<tr>
<td>Wheat bran</td>
<td>6</td>
<td>13.33</td>
</tr>
<tr>
<td>Teef straw and hay</td>
<td>2</td>
<td>4.44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Similar with the findings of Takele [15], in southern region and Belete [22], in Amhara region of Ethiopia. Major feed resources used as a basal diet for fattening cattle were crop residues.

3.5. Major constraints affecting cattle fattening in the study area

Farmers have put different constraints that hindered the performance of cattle fattening activity in the study area. Lack of initial capital, shortage of feed, water, land shortage for fattening, health and lack of awareness were (40, 24.44, 15.56, 13.33 and 6.67%) respectively.

Table 4.4 factor affect cattle fattening in the study area

<table>
<thead>
<tr>
<th>Factor</th>
<th>Respondent( n=45)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of capital</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>Shortage of feed, water</td>
<td>11</td>
<td>24.44</td>
</tr>
<tr>
<td>Shortage of land for fattening</td>
<td>7</td>
<td>15.56</td>
</tr>
<tr>
<td>Helath</td>
<td>6</td>
<td>13.33</td>
</tr>
<tr>
<td>Lack of awareness</td>
<td>3</td>
<td>6.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Figure 2. Animal production experts who called muluye wubneh and Mulusemien Degie giving extension to fatteners about feeding system in Mekane Birhan town.
The present study Similar with the finding of Belete [22] reported that shortage of capital was the first constraint to cattle fattening in Amhara region of Ethiopia. Getnet [23] reported that feed quality and quantity is the main limitation to animal production in Ethiopia.

4. CONCLUSION AND RECOMMENDATIONS

The overall results of the present study revealed that the major occupation of households in the study area is on livestock production. Fatteners using oxen for fattening purpose is old, red coat colour and castrated. Farmers purchased fattening cattle based on their good body condition, health, adaptation, breed and big and stand-high hump. The major fattening practice is done starting from mid February up to June. Their feed sources are crop residues and industrial by products (bean straw, nug cake, chick pea, wheat bran, wheat straw and teff straw). The maximum price record during the dry season and the lowest price is on wet season. The major constraints for fattening practices is lack of initial capital, shortage of feed and water, land shortage for fattening, health and lack of awareness in order of importance. Generally, cattle fattening practices is one means of household livelihood improvement in Janamora Wereda. Based on this information, it is recommended that: the government should give due attention on

- Market channels of fattened animals in Janamora Wereda.
- Extension policies and strategies on fattening practices.
- Feed improvement strategies
- Provide initial capital borrow
- Training and extension service/advice on beef selection, feeding, healthcare, and market information and further researches on reproductive performance of fattening cattle and carcass quality with related to feeding should be conducted.
- Janamora Wereda Animal Production Department and other livestock research center should conduct a research on fattening improvement in Janamora Wereda.

5. REFERENCES

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