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Research Article

Assessment of Sheep Production and Marketing System in Jimma Geneti Wereda, Horo Guduru Wollega Zone of Oromia Regional State, Western Ethiopia

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Abstract

The study was conducted in Jimma Geneti district to assess production and marketing system of sheep. Three kebeles were randomly selected as sample kebeles from which sample respondents were purposively selected based on their potential. Data were collected from 15 respondents from each kebele. The result of the study showed that the most dominant sheep production system was extensive system (93.3%). The housing systems with 53.3% of house with main house, 31.1% of separated house and 15.6% sheltering with main house and feeding resources were also identified from the production status. Regarding marketing of sheep, high demand for sheep was found during holidays of Easter, Christmas, New Year and others in 44.4%, 31.1%, 20% and 4.4% respectively. The price of a sheep is determined by body condition of a sheep (51.1%), Age of sheep, color of sheep and season of selling have contributed to 24.4%, 17.8% and 6.7% respectively. It can be concluded that sheep production in the study area was traditional and constrained by low input ,lack of awareness and feed shortage.

Keywords: Feed Resource; Marketing Constraints; Production system; Sheep housing

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Introduction

Background of the Study

Ethiopia has the largest livestock population in Africa with estimated number of 65 million cattle, 40 million sheep and 51 million goats respectively [1] indicated that the livestock production systems in Ethiopia have evolved largely as a result of the influence of the natural production environments and socio-economic circumstances of farmers/pastoralists rather than market forces. Sheep and goat in Ethiopia and most developing countries are kept under traditional extensive systems. The livestock production a system is of subsistence nature has evolved largely as a result of the influence of the natural production environments and socio-economic circumstances of farmers, rather than market forces in Ethiopia. Like all other livestock species, sheep and goat in Ethiopia are kept under traditional extensive systems with no or minimal inputs and improved technologies, which results in characteristically low productivity [2]. Even though different attempts have been made in the past to improve the performance of sheep, there was no significant increase in the productivity in Jimma Genet Woreda in particular and Ethiopia in general. For instance, [3] indicated that although various research and development activities have been carried out, no significant increase in productivity was achieved. As a result, improvement programs are highly important to improve productivity of sheep in a sustainable manner of the country. However, such development achievement for sheep will only be successful when accompanied by a good understanding of the different farming systems and when simultaneously addressing several constraints: feeding, health control, general management, as well as cost and availability of credit and marketing infrastructure.

Statement of the Problem

Despite the potential of sheep and their contribution to the livelihood of the farmers and the national economy, sheep production in Ethiopia is below its potential due to different factors like feed shortage, prevalence of disease and parasites. In the same manner, Jimma Geneti woreda of Horo Guduru Wollega zone is one of the most potential of sheep production found in southern Ethiopia. The productivity of sheep production in the study area remains low like in Ethiopia despite of the large potential and suitable environment for production. Moreover, sheep has a great economic importance, the production; management and marketing system are not well studied and documented so far at Jimma Geneti Woreda Horo Guduru Wollega zone of Oromia Regional State, Western Ethiopia. Therefore, the present study was designed to assess the existing sheep production and marketing system in Jimma Geneti wereda.

Objective of the Study

General Objective

The general objective of this study was to assess the existing sheep production and marketing system in Jimma Geneti wereda.

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Specific Objectives

- · To identify existing sheep production systems
- · To identify major sheep marketing systems
- · to assess the sheep production and marketing constraints

Scope of the Study

The study was delimited to Jimma Geneti district for assessing sheep production and marketing systems.

Significance of the Study

The result of this study would be used as a survey line study for next research works beside help us as a requirement for holding BSc degree.

Materials and Methods

Description of the study area

This study was carried out in the Jimma Geneti district, Horo Guduru Wollega Zone of Oromia region, Western Ethiopia. Geographically, it lies between 9°13'00" to 9°33'00" North latitudes and 36°3'00" to 36°17'00" East longitudes (Figure 3). It is situated between 2100 to 3100 meter above sea level. And thus the wareda is categorized into mid and high land agro ecological zones. The annual average rainfall and temperature are 1500mm and 18°c respectively [4]. The wareda has 14 kebeles (lowest administrative systems); 12 rural kebeles and 2 urban kebeles. This woreda is known by mixed farming system, i.e., crop production and livestock rearing. The population of livestock found in the district is listed in the (table 1).

Types of livestock	Total number
Cattle	170367
Sheep	92884
Goat	60997
Donkey	16149
Horse	21335
Mule	3735
Poultry (local and improved breed)	640400

 Table 1: Types and number of livestock in Jimma Geneti Wereda. Source:

 JGANRO, Livestock dep't socioeconomic data, (2021).

Sampling Techniques and Sample Size

Jimma Geneti district has 14 Kebeles. The Woreda is characterized by two agro-ecologies namely 'Woina Dega' (mid altitude) and 'Dega' (high land). The number of Kebeles in the Woreda which is characterized by 'Woina Dega' and 'Dega' is 9 and 5 respectively. For the present study to make representative based on agroecolgy 2 and 1 Kebeles were selected by proportional simple random from "Woina Dega" and "Dega" respectively. From each Kebele, 15 households were selected purposely based on the experience and involvement of sheep production. Thus, the total number of respondents who included in the study was 45 (i.e. 3 Kebeles ×15 house holders).

Data Collection

Both primary and secondary source of data were used for the study. The primary data were obtained through questionnaire and

personal observation. The Primary data like respondents' socio economics characteristics, livestock holdings, sheep production systems and constraints of [5-7] sheep production were gathered from the selected respondents through the pretested semi structured questionnaire. The secondary data were obtained from written documents, journals and the Woreda Agriculture and Natural Resource office, livestock department.

Data analysis

Data collected through questionnaire, interview, personal observations and secondary sources were analyzed qualitatively using excel. Simple descriptive statistics (frequency count, percentage, mean and standard deviation) were used to describe and summarize the data.

Results and Discussion

Demographic and socioeconomic characteristics of respondents

Sex of the Respondents

As shown in the (Table 2), about 73.3% male respondents and 26.7% of female participants were involved in this study. This indicates that the overwhelming majority of male household heads that [8] participated in sheep production and marketing. But, it also indicates that large numbers of female household heads are participated in sheep production and marketing in the study area.

S.N.	Respondents from sample kebeles	Male	Female	Total
1	Charo Gobana	11	4	15
2	Gudetu Geneti	13	2	15
3	Lalisa Biya	9	6	15
	Total	33	12	45
	Percent	73.3%	26.7%	100%
Table	2: Sex of respondents. Source	e: own con	mputation fro	om survey

Age of Respondents

Regarding ages of respondents, for simplicity ages of the respondents are categorized into three groups. Accordingly, the ages of majority of respondents (75.56%) were dropped between 30-50 years while about 15.56% and 8.89% of respondents were below 30 years and greater than 50 years respectively (Figure 1). This indicates that most herders are those whose ages fall in active working age [9]. This presence of high proportion of active working age force may be an opportunity for active participation in agricultural activities and this agrees with reports of Asaminew and Eyasu (2009).

Educational backgrounds of Households

As indicated in the (Table 3), majority 27(60%) of the household heads had attended basic primary education and 31.1% had attended secondary school education and above. But, few households 4 (8.9%) have no formal education (uneducated). This shows that most of respondents participated in this study are literate (can read and write). It is understood that the presence of high percentage of literate individuals in farming community can be an opportunity for easily training, transfer and adoption of improved farming practice [10-12].





S.No	Educational status	Frequency	Percent
1	No formal education	4	8.9
2	Primary education	27	60.0
4	Secondary and above	14	31.1
	Total	45	100.0

 Table 3: Educational backgrounds of Household heads of charcoal producers.

 Source: own computation from survey (2022).

The livestock type and size of the respondents

As indicated in the (Table 4), types of livestock and their number were identified. Accordingly, the highest average number of livestock per household head was identified as sheep with 12 heads of sheep per household. Thus, sheep was ranked first in the study area. The present research finding indicated that the population of sheep is slightly higher than the finding of Madebo and Anja (2018) who showed that the average number of sheep was 10 for study conducted in Shashego wereda, Hadiya zone and also the result of present study is higher than the study of [13] who indicated that the average number of sheep was 7.4 for the sites being dominant in sheep dominating site in Alaba, Southern Ethiopia. The higher number of sheep in study area compared to other livestock species can indicate that the area is potential of sheep production and also its higher importance to the contribution of the livelihood of the community.

Types of livestock	Total number of livestock re- corded from all respondents	Number of respondents who do not have the livestock	Average number of livestock per house- hold	Propor- tion of livestock (%)	Rank
cattle	270	8	6	21	3
sheep	540	0	12	42	1
goat	430	2	9	33	2
equine	49	16	1	4	4
Total/ Average	1289	7	7	100	

 Table 4: Type and number of livestock recorded from the respondents.

 Source: own computation from survey (2022).

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Sheep production system in the study area

Method of sheep production

The production method of sheep in the study area is shown in the (Figure 2). As it is evident from the figure, most (98%) of the interviewed households were practicing using extensive sheep production system, while the rest (2%) practiced semi intensive system [14-16]. This indicates that the extensive production system under small holder farmers in the study area. This production system is known to be the low input, management and finally low output system. Therefore, awareness to the farmer about improved management system of sheep production should be advised (Table 5).

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Feed resources and feeding management of sheep

Grazing of sheep in different forms is the dominant feed resources for sheep in the study area. Accordingly, the major (86.7%) of the respondents use natural grazing and browsing land to feed their sheep, and about 13.3% give supplementary crop residues during dry season. But none of them provide concentrate feed to their animals (Table 5). In agreement to the results of the current study, Belete (2009) reported that Communal grazing land, roadside grazing, riverside grazing and aftermath grazing are the major types of grazing for sheep [17].

Parameters	Frequency	Percent
Feed resource		
Natural grazing	39	86.7
crop residue	6	13.3
concentrates	0	0
Season of feed shortage	-	
Dry season	27	60.0
wet season	18	40.0
Frequency of feeding		
Once a day	29	64.4
twice a day	16	35.6

 Table 5: Feed sources and feeding management of sheep in study area.

 Source: own computation from survey (2022).

In this study, majority (60%) of the respondents faced feed shortage during dry season, while the rest (40%) reports feed shortage occurs during the wet season (Table 5). This shows that there was feed shortage problem both during the dry and the rainy seasons. With respect to feeding frequency most (64.4%) of respondents feed their sheep once a day. In this case the products let out their animal to

grazing/browsing area at the morning and this type of feeding system is common in the extensive sheep production system. This finding agrees with the results of Madebo and Anja (2018) who found that 66.7% of the respondents faced feed shortage during dry season and also the same number of respondents responded that thy let their sheep to graze once a day [18-20].

Housing of sheep

Farmers in the area use different types of sheep houses. Attaching sheep house with a main house is predominant housing system in the area (53.3%) followed by sheep houses separately constructed (31.1%). Sheltering sheep in the main house (15.6%) is also found in the area (Table 6). Sheep houses were made of locally available materials. The types of materials used for wall construction of sheep houses were different among kebeles based on the availability construction materials [21]. In Lalisa Biya and Charo Gobano kebeles, the wall of most of sheep houses were constructed using eucalyptus poles while indigenous woods were used in case of Gudetu Geneti kebele. In the two kebeles, eucalyptus trees are widely grown.

The wall was usually plastered with mud to protect against wild prey animals. The roof is usually made of corrugated iron sheet (90%) [22-24]. The dominant floor type was usually earth both during the dry (70%) and rainy (52%) seasons (Table 6). Regarding cleaning of houses, majority of respondents (42.2%) clean sheep houses once a week. While about 26.7%, 17.8%, and 13.3% of households clean sheep house twice a week, three times a week and on a daily basis respectively. The differences of frequency of cleaning by the respondents might depend on number of herds they have.

Parameters	Frequency	Percent
Housing method		
Sheltering sheep in home	7	15.6
Attaching sheep house with home	24	53.3
Separated sheep house	14	31.1
Type of floor		
Earth	34	75.6
wood	3	6.7
Stone	8	17.8
Frequency of cleaning		
Daily	6	13.3
Three times a week	8	17.8
Two times a week	12	26.7
Once a week	19	42.2

 Table 6: Housing and house management for sheep production in the study area. Source: own computation from survey (2022).

Sheep marketing in the study area

Sheep marketing system and high demand season for sheep

The marketing system and season of high demand of sheep area are shown in (Table 7). According to the data collected from the respondents, majority (80%) of respondents indicated that sheep were marketed through formal system, i.e., bringing to market place while only (20%) of the respondents showed that sheep were marketed through informal systems. This shows that marketing of sheep in the

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study area is exercised largely by formal system in which a seller and a buyer meet at a specific market place. Respondents were asked to give a response on what was a high demand season or occasion for sheep marketing. Accordingly, the data collected from the respondents revealed that about 44.4% of the respondents indicated that there is a high demand of sheep in the market during Easter holiday. In the same manner, about 31.1 and 20% of the respondents indicated that the demand for sheep is high during Christmas and New Year occasions respectively. Few respondents responded that there is a high demand for sheep other than these aforementioned occasions. The seasons might be during Muslim holidays.

Paramotors/questions	Response		
r arameters/questions	Frequency	Percent	
Season of high demands of sheep			
New year	9	20.0	
Christmas	14	31.1	
Easter	20	44.4	
Others	2	4.4	
Total	45	100.0	
Marketing method			
Formal	36	80.0	
Informal	9	20.0	
Total	45	100.0	

 Table 7: Marketing system and season of high demand for sheep. Source:

 own computation from survey (2022).

Marketing constraints

As indicated in Table 8, marketing of sheep was constrained by different factors (Table 8).

D	Response	Response	
Parameters	Frequency	Percent	
Marketing constraints	i	•	
Lack of awareness	17	37.8	
Distance of market place	7	15.6	
lack of marketing channels	21	46.7	
Total	45	100.0	
Factors affecting price of a sheep	·		
Age of sheep	11	24.4	
Color	8	17.8	
Body condition	23	51.1	
Season	3	6.7	
Total	45	100.0	

 Table 8: Marketing constraints and determinants of sheep price. Source:

 own computation from survey (2022).

Mainly lack of marketing channels (46.7%) was indicated as major marketing constraint in sheep marketing in the study area. And also lack of awareness on marketing issues and distance of a household home from a market place were considered as constraints in sheep marketing system by about 37.8% and 15.6% of respondents respectively (Table 8).The respondents also reported that the price of a sheep is determined by physical characteristics of a sheep and

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season. Accordingly, the most important factor to influence price of sheep in the study area was found to be body condition of a sheep which was responded by more than half of respondents (51.1%). Age of sheep, color of sheep and season of selling have contributed to 24.4%, 17.8% and 6.7% of influence on price change of a sheep (Table 9).

No 1 Co	Factors affecting price of sheep	Responses	
	Color	frequency	percetage
	Red	37	82.22
	Black	1	2.22
	White	2	4.44
	Brown	5	11.11
2	Age		
	0-1 year	29	64.44
	1 year and above	16	35.56

The result shows the preferability of red color sheep is 81% of market, brown color sheep 15%, white color shares 3% and black color sheep accounts about 1% of the total market choice in percentage. This can show the most marketed color is red. In respective of their age sheep of age 0-1 year is preferred by 64.44 and the sheep aged 1 year or above have 35.56% preferability.

Conclusion and Recommendation

Conclusion

The study was conducted in Jimma Geneti district to assess production and marketing system of sheep. Three kebeles were randomly selected as sample kebeles from which sample respondents were purposively selected based on their potential of rearing sheep and other livestock. Data were collected from 45 respondents selected from the three kebeles using semi-structured questionnaire.

The result of the present survey study showed the dominant (93.3%) of sheep production systems was the extensive system. Sheep production was common in study area and average numbers per households were 12 heads. The common feed resource for sheep was natural grazing and crop residues and house hold wastage. Feed shortage during dry season was the most critical constraints for sheep raised by majority (60%) of the respondents. The most common (64.4%) feeding frequency of sheep was once a day. High demand for sheep was happened during holidays. The highest demand was thus observed during Easter holiday. Even though marketing of sheep was through formal market system, marketing constraints such as lack of market channels and lack of awareness about market issue were identified as big issues which need collaboration.

Recommendation

Based the finding, the following recommendations were forwarded

- Strong extension work must be done to alleviate the problems associated with production and marketing constrains of sheep.
- Possible market channels should be created to facilitate marketing options for the farmers
- Attention should be given to create awareness about improved sheep production system.

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