**Sheep Marketing Practices and Their Influences on Farm Profitability: A Study in Hassan District, Karnataka, India**

**ABSTRACT**

This study was conducted in the Hassan district of Karnataka state to examine the sheep marketing practices adopted by farmers in this region and their implication for farm profitability. Sheep production is a significant livestock activity for commercial and smallholder farmers in India. The rapid increase in population, climate change, and other production constraints has directly led to the rise in demand and declining sheep numbers, leading to a shortage in supply in the local market. A stratified multistage random sampling method was adopted to select 150 sheep farmers from the study area. Data were gathered using a pre-tested structured interview schedule, and statistical analyses were conducted to interpret the findings. The study revealed that marketing was a major constraint faced by many sheep farmers. They chose mainly the village collectors (55.33 %), local market (40.67 %) relatives and friends (3.33 %) and other channels (10.67 %) as their main marketing channels. Need-based marketing channel was observed and 41.33 per cent of sheep farmers sold their stock to meet the financial requirement of domestic needs. About 24 per cent sold the surplus animals while, 19.33 per cent sold the animals to repay their loans and 9.33 per cent sold their stock, due to other reasons.The price fixation was determined by both market demand and body condition judgement of the animals (40.67 %). The choice of animals for sale belonged to the age group of 6- 12 months old (59.33 %) followed by <6 month and >12 month old. The farmers travelled to far off places to sell their animals and the marketing strategies adopted were fragile and unscientific. As such no specific marketing plans were noticed and it was majorly need-based and middleman dominated. The findings highlight the need for organized marketing interventions and capacity building to ensure fair pricing and sustainable sheep farming.

**Key words:** Sheep marketing, farm profitability, financial requirement, husbandry activity

1. **INTRODUCTION**

The rapid growth in the demand for livestock products will increase the pressure on livestock farmers to increase production, and the increase in production is expected to improve the incomes and livelihood of livestock farmers, especially smallholders in developing countries who depend on livestock production for their livelihood (Nyam et al., 2022). The vulnerability of extensive sheep systems in marginal areas, and their capacity to deliver important socio-economic functions and ecosystem services, can be studied through the lens of resilience theory (Bertolozzi-Caredio et al., 2021). Marketing of sheep is a neglected component of sheep production in India, as many farmers are not business-oriented and there is lack of awareness of organized market strategies. Marketing in India is highly unorganized, dominated by middlemen, based on unscientific pricing structure, lack of efficient means of transport combined with distress sales makes the farmers receive unfair prices to their stock (Porwal *et al*., 2006). ‘The sale of stock depends on the size of the flock’ *i.e.* the farmers try to maintain flock size uniformly throughout the rearing cycle (Rama Rao and Raghu Ram, 1998). Sheep farming contributes to fulfilling cultural commitments. Chiefs of the North, for instance, sit on skin. Some people make religious sacrifices and prayers using skin. For the people working on the production, it serves as a source of income. Sheep manure is a useful fertilizer for fish ponds and soil. Additionally, bio-gas for householdconsumption can be produced with it (Husein et al., 2024).

Common ways of marketing sheep are, through local shandies or markets, direct sales to the consumers at the farm level and sale through middlemen (Natarajan Akila, 2014). Farmers sell lambs at the age of 3-4 months and the price is based on physical appearance. Adult animals are sold when they become in number or become old, unfit for production, diseased and also for reducing the flock size (Kumar *et al*., 2010). At times the selling price of sheep is subjectively attributed to the body condition score (BCS) of the animals and marketing becomes competitive in nature (Biradar, 2016). With all these constraints and deficits of marketing, sheep farming still continues to be a source of livelihood supporting farmers and dependable animal husbandry activity. The present study explores about sheep marketing practices and their influences on farm profitability.

1. **MATERIALS AND METHOD**

The survey was carried out purposively in three different agro-climatic zones of Hassan District, where sheep farming is one of the main livelihood activities *viz.,* Central Dry Zone (CDZ), Southern Dry Zone (SDZ) and Southern Transition Zone (STZ). The average annual rainfall is 718-900 mm and for the period 2000-2016 it was 1074.9 mm. The total geographical area of the district is 6,62,602 hectares, and the geographical location of the district is between 12013’and 13033’ North latitudes and 75033’ and 76038’ East longitude.

* 1. **Sampling design**

In this study a multistage stratified random sampling was adopted to select the villages and respondents-. Five (05) villages were selected from each zone based on the optimum sheep population and ten (10) sheep farmers from each village were identified. A total of 150 sheep owners from three agro-climatic zones formed the study group.

* 1. **Data collection**

Variables pertaining to the marketing of sheep *viz*. the reason for sale, the marketing channels used, marketing plans, price of various components, price determination method, age at marketing and transportation details were selected from a pilot survey conducted in the non-sampling area and discussion with the experts. This formed the basis for developing the questionnaire schedule which was pre-tested and appropriate modifications to the questions and their sequence were made. These pre-tested structured interview questions scheduled were used to interview the sheep owners personally, for the collection of accurate information. The owners were interviewed in person and the questions were asked in their local dialect during the month from May to June-2017 and the information gathered was compiled and analysed.

* 1. **Statistical analysis**

The data were compiled and analysed using Microsoft Excel, 2007 software, employing descriptive and inferential statistics .

1. **RESULTS AND DISCUSSION**
	1. **Sheep marketing practices**

The study also revealed that marketing of sheep was considered to be a major constraint faced by many of the sheep farmers due to various reasons. Hence, thorough analysis of sheep production in this regard was carried out and the findings are presented in Table 1.

* 1. **Marketing channels and plans**

The sheep farmers chose mainly the village collectors (55.33 %), local market (40.67 %) relatives and friends (3.33 %) and other channels (10.67 %) as their main marketing channels due to their own presumed advantages and ease of marketing. The zonal variations were significant of local market in the STZ sheep farmers over the other channels, whereas the farmers of CDZ and SDZ chose village collectors as comfortable channels of marketing of sheep.

The need-based marketing channel was observed as 95.33 per cent of the sheep farmers did not have any predetermined marketing plans and the differences across the zones with respect to the adoption of marketing plans were non-significant.

Unorganized and unscientific marketing patterns along with fragile and fluctuating prices for the sheep, dominated by middleman was the marketing scenario for sheep observed in the present study, which was mainly due to the fact that Indian sheep farmers were not business-oriented *i.e.,* sheep farming was rather a livelihood activity than a business enterprise as such. Ramesh *et al.,* (2017) reiterated this behavior of sheep farmers and termed this kind of approach as the reason behind the perception of farmers that the marketing of sheep was stressful event.

Low level of marketing tactics and knowledge of sheep farmers were highly exploited by the middleman and thus they were denied a fair price to their stock. The majority of them perceived sheep marketing to be a stressful, labour-intensive aspect of sheep production with non-remunerative returns as reported by Senthilkumar *et al.* (2012). Natarajan Akila (2014) was of the opinion that Mecheri sheep farmers of Kannur district were efficient in marketing strategies but agreed to the fact that the market was unorganized and middleman dominated.

* 1. **Reasons for sale and price determination**

Profitability in sheep farming is chiefly determined by effective sale of productive stock. The reasons for the sale revealed that 41.33% of farmers sold their stock primarily to meet their domestic financial needs. About 24 per cent of the sheep farmers sold the surplus animals while, 19.33 per cent of them sold the animals to repay their loans and 9.33 per cent sold their stock, due to various reasons such as scarcity of fodder, fear of sickness, older animals, unproductive animals *etc.* However, these reasons attributed for sale varied significantly between the zones where in need of cash for domestic purposes and surplus animals were the prime reasons for sale in STZ, need of cash and to repay the loans were the major reasons in SDZ whereas, the need of cash was the main reason for sale in SDZ.

The price determination policy was unscientific in the study area and most of the time the farmers were denied optimum, prime price for their stock. Price fixation was determined by both market demand and the body condition judgement of the animals (40.67 %) whereas, 30.6 per cent of the sheep farmers fixed the price depending on the market demand only and 28.67 per cent of them relied on body condition judgement to arrive at fair price of their animals. The zonal variations were found to be significant (*P*<0.05) with respect to these criteria of marketing.

The reasons for sale of sheep as determined by the economic status of sheep farmers, it was majorly to meet the financial requirement for their domestic needs. The fact was sustainable from the point that small ruminants, particularly sheep were considered as ‘mobile bank’ as they were the first choice of financial resources at the time crisis. Findings of Ramesh *et al.* (2017) and Senthilkumar *et al.* (2012) reaffirmed the above particulars and also the sale was carried out to repay the loans, to arrange for school fees of their children as well as to meet the ceremonial needs*.*

Few of the economically stable farmers practised sale of their stock whenever the flock size over expanded *i.e.,* to maintain the uniform flock size throughout the year, excess animals were sold. The other reasons attributed were severe shortage of feed and fodder, water, grazing land, outbreak of diseases and also as source of income at times of crop failures due to uncertainties of rain. This finding is in accordance with Pankaj and Singh (2008). Under these circumstances, disposal of their stock was ideal way of economising the farming system rather to achieve below average rate of growth as well as production leading to unstable and economically non-viable sheep farming.

* 1. **Age of the animals and time of marketing**

The choice of animals for sale belonged to the age group of 6-12 months old (59.33 %) followed by 27.33 per cent of < 6 month old animals and 13.34 per cent of then-sold animals of > 12 month old (Adults). The highest percentage of 6-12 month old animal sale was noticed in SDZ (82 %), however, the zonal differences were found to be significant (*P*<0.05) (Table 1).

The time of marketing (both buying and selling) analysed in the present study showed that festive season was the best time to buy as well as sell their animals (30.67 % and 47.33 %, respectively). The sale of animals was on the rise during summer season followed by the other season (10.67 %). The zone-wise differences were found to be significant (*P*<0.05).

The age chosen to sell the animals by farmers was 6-12 months old which indicated that the farmers were well aware of the growth pattern of sheep. Although it depended on the market demand and season, the majority of them adhered to the above class of animals since no more substantial growth was expected particularly after nine months of age.

Occasionally animals below six months were also sold and mostly it was to maintain the uniform flock size *i.e.,* only surplus were sold or due to excessive market demand with good price the very young animals were marketed. This aspect of marketing was in concurrence with the findings of Malik *et al.* (2015) and Swarnkar and Singh (2010).

The period during festivals and other regional ceremonial occasions were considered to be the best time to market which was completely driven by the market demand. The other off-season sale and purchase of animals continued in order to fulfil the personal needs as detailed previously.

* 1. **Market price of the products**

The market price of various products from the sheep were analysed in the study area and it was observed the average market price of the Ram was Rs. 8433.63 ± 226.93, Ewe was Rs. 6348.20 ± 414.89, Ram lamb was Rs. 3583.33 ± 229.35, Ewe lamb Rs. 2797.25 ± 144.1 and the price of mutton was Rs. 355.90 ± 4.03 (Table 2). These prices were significantly(*P*< 0.05) varying in STZ compared to the other two zones except ram lamb price which did not alter significantly across the zones.

The market price of animals and the products (mainly mutton) were completely individualistic and no scientific rationale was adopted. The farmers used their traditional knowledge acquired through their ancestors in deciding the price of lambs, adults and the meat. Ram and ram lambs were priced premium compared to ewes and ewe lambs just because they vary in their body weight and growth rate, whereas mutton pricing was completely decided by the retailers and middleman and farmers had no role to play since, they were least interested once their animals were sold.

* 1. **Other aspects of marketing of sheep**

Various other aspects of marketing include distance travelled and mode of transport in the present study. It was noticed that 46.67 per cent of the sheep farmers travelled < 10 km to buy or sell their animals, followed by 28 per cent travelling about 10- 20 km and 25.33 per cent travelled > 20 km for marketing of animals. The lesser distance (< 10 km) was travelled by highest proportion (72 %) of sheep farmers in SDZ but the differences were significant (*P*<0.05).

The two nearest local markets convenient to the farmers were observed to be at a distance of 12.06 ± 0.53 and 26.27 ± 1.91 km (Table 2). A sizeable proportion of sheep owners depended on any of the local market as per their choice and ease of travelling. The distances were significantly (*P*< 0.05) different, especially between CDZ and SDZ.

The criteria related to distance of the local market and the distance travelled by sheep farmers in order to market their stock indicated that they chose the nearest distance, since it involved money in the form of vehicle rent and even a few of them, they grouped together and transported their animals rather arranging at individual level.

Transport by foot was not considered ideal by the sheep farmers since they thought the animals would get exhausted, thereby fetch less price in the market and the majority of them used vehicles for transporting as the accessibility in terms of roads and vehicles was congenial.

**CONCLUSION**

The marketing strategies adopted by sheep farmers were found to be unorganized and largely personal need-based, with limited scientific underpinning. As such no specific marketing plans were noticed and it was majorly need based and middleman dominated. The sale was carried out mainly to arrange finance for their domestic needs, to repay the loans, to escape the vagaries of draught (scarcity of feed and fodder), to maintain the uniform flock size and during outbreaks of diseases. The price determination was decided by market demand as well as by BCS. The age at which the animals were sold was between 6-9 months indicating the farmers had better knowledge of the growth pattern and the season chosen was mostly during the peak demand seasons (festivals, ceremonial occasions *etc*.)

The market price of the animals and the product varied across the zones and males were priced higher than females because of their comparatively better growth and body size. The preference of the farmers was for local nearby market places well within 20 km distance and improved accessibility in terms of roads and vehicles prompted them to transport the stock.

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**Table 1: Marketing practices of Sheep farmers across the different agro-climatic zones in Hassan**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Marketing parameters** | **CDZ****(n=50)** | **SDZ****(n=50)** | **STZ****(n=50)** | **Pooled****(n=150)** | **Chi square value & df** |
| **Best time to buy** | **-** |
| Winter | 23 (46) | -- | 33 (66) | 56 (23.00) |  |
| Summer | 15 (30) | -- | 17 (34) | 32 (21.33) |
| Rainy | 12 (24) | -- | -- | 12 (08.00) |
| Festive season | 00 (00) | 46 (92) | -- | 46 (30.67) |
| Other | 00 (00) | 04 (08) | -- | 04 (02.67) |
| **Best time to sell** | 137.5\*; 8 |
| Winter | 00 (00) | 00 (00) | 13 (26) | 13 (08.67) |  |
| Summer | 23 (46) | 00 (00) | 12 (24) | 35 (23.33) |
| Rainy | 15 (30) | 00 (00) | 00 (00) | 15 (10.00) |
| Festive season | 00 (00) | 46 (92) | 25 (50) | 71 (47.33) |
| Other | 12 (24) | 04 (08) | 00 (00) | 16 (10.67) |
| **Reasons for sale** | 44.19\*; 6 |
| Need of cash for domestic purpose | 37 (74) | 17 (34) | 17 (34) | 62 (41.33) |  |
| Other (Fodder scarcity / Fear of sickness / Older animals) | 08 (16) | 00 (00) | 06 (12) | 14 (09.33) |
| Surplus animals | 04 (08) | 14 (28) | 18 (36) | 36 (24.00) |
| To repay loan | 01 (02) | 19 (38) | 09 (18) | 29 (19.33) |
| **Marketing channels** | 28.50\*; 6 |
| Local market | 13 (26) | 18 (36) | 30 (60) | 61 (40.67) |  |
| Village collectors | 36 (72) | 32 (64) | 15 (30) | 83 (55.33) |
| Others | 01 (02) | 00 (00) | 00 (00) | 01 (00.67) |
| Relatives and Friends | 00 (00) | 00 (00) | 05 (10) | 05 (03.33) |
| **Marketing plans** | 4.79NS; 4 |
| No | 49 (98) | 45 (90) | 49 (98) | 143 (95.33) |  |
| Yes | 01 (02) | 05 (10) | 01 (02) | 07 (04.67) |
| **Travelling distance** | 29.31\*; 4 |
| <10 Kms | 17 (34) | 36 (72) | 17 (34) | 70 (46.67) |  |
| 10-20 Kms | 14 (28) | 14 (28) | 14 (28) | 42 (28.00) |
| >20 Kms | 19 (38) | 00 (00) | 19 (38) | 38 (25.33) |
| **Age of selling male** | 19.08\*; 4 |
| <6 Months | 19 (38) | 03 (06) | 19 (38) | 41 (27.33) |  |
| 6-12 Months | 24 (48) | 41 (82) | 24 (48) | 89 (59.33) |
| >12 Months | 07 (14) | 06 (12) | 07 (14) | 20 (13.33) |
| **Transportation of sheep** | 42.19\*; 4 |
| Jeep/Truck/Tractor | 24 (48) | -- | 24 (48) | 48 (32.00) |  |
| Three Wheeler | 23 (46) | 50 (100) | 23 (46) | 96 (64.00) |
| Two Wheeler | 03 (06) | -- | 03 (06) | 06 (04.00) |
| **Price determination** | 73.23\*; 4 |
| Market demand | 04 (08) | 38 (76) | 04 (08) | 46 (30.67) |  |
| Judging by BC | 18 (36) | 07 (14) | 18 (36) | 43 (28.67) |
| Both | 28 (56) | 05 (10) | 28 (56) | 61 (40.67) |

*Note: Figures in the parentheses are the percentages; NS – Non significant; \* - Significant at P<0.05*

**Table 2: Mean ± SE values of certain variables related to marketing of Sheep**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Parameters** | **CDZ** | **SDZ** | **STZ** | **Pooled** |
| 1. | Distance of the local market – 1 (km) | 14.28 ± 1.21a | 9.64 ± 0.47b | 12.16 ± 0.88ab | **12.06 ± 0.53** |
| 2. | Distance of the local market - 2 (km) | 30.50 ± 1.98a | 36.71 ± 0.79a | 17.12 ± 1.40b | **26.27 ± 1.91** |
| 3. | Market price of Ram (Rs.) | 8187.50 ± 770.38ab | 7787.23 ± 368.68a | 9120.00 ± 264.41b | **8433.63 ± 226.93** |
| 4. | Market price of Ewe (Rs.) | 3766.67 ± 396.01a | 5805.51 ± 284.32a | 7630 ± 841.87b | **6348.20 ± 414.89** |
| 5. | Market price of Ram lamb (Rs.) | 4250 ± 1228.90a | 4000 ± 263.29a | 2960 ± 122.22a | **3583.33 ± 229.35** |
| 6. | Market price of Ewe lamb (Rs.) | 3076.923 ± 630.03ab | 3358.70 ± 244.09a | 2208.00 ± 104.23b | **2797.25 ± 144.1** |
| 7. | Market price of mutton (Rs.) | 333.34 ± 10.54a | 387.76 ± 4.00b | 327.40 ± 4.21a | **355.90 ± 4.03** |
| 8. | Market price of compost (Rs.) | NA | 4848.58 ± 287.38 | NA | **-** |

*Note: Means between the zones, bearing different superscripts are statistically significant at P<0.05*