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# ANALYSIS OF PRICE SPREAD AND MARKETING EFFICIENCY OF MILCH COW MARKETING IN THE STATE LEVEL CATTLE FAIRS OF RAJASTHAN, INDIA

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## ABSTRACT

The present study was carried out to analyse the price spread and marketing efficiency of different milch cow marketing channels in the state level cattle fairs of Rajasthan. The study identified six milch cow marketing channels i.e., (1) Farmer – Farmer, (2) Farmer – Local Trader – Farmer, (3) Farmer – Local Trader, (4) Farmer – Distant Trader – Farmer, (5) Farmer – Distant Trader and (6) Farmer – Local Trader – Distant Trader. Marketing efficiency and producer share in consumers' rupee were the highest in channel 1 followed by channel 2 and channel 4 as price spread was the lowest in channel 1 followed by channel 2 and channel 4 across all three breed categories (non-descript, indigenous and cross-breed). Transportation cost was found to be the major cost component both for sellers and buyers in all the six milch cow marketing channels. Besides transportation, other major cost components were cost of feeding animals at fairs and miscellaneous expenses (including own expenditure). There were differences in the marketing costs across non-descript, indigenous and cross-breed both for sellers and buyers in all channels. The study suggested the need for government transportation facilities and adequate feeds and fodder availability at reasonable price during the cattle fairs. Above all, government should bring more number of local cattle fairs under the ambit of regulation to further improve the efficiency of livestock marketing system in the state.

**Keywords:** Marketing channel, Marketing cost, Marketing efficiency and Price spread.

## INTRODUCTION

Rajasthan is one of the states in India blessed with different livestock species. As per the 18th Livestock Census (2007), Rajasthan had 57.89 million livestock out of

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which bovine constituted 23.95 million (12.41 million cattle and 11.54 million buffaloes). Livestock sector contributes 10 per cent of total GDP of the state (Report of Working Group on Animal Husbandry & Dairying, 11th Five Year Plan, Planning Commission, GoI). For livestock marketing, 10 state level cattle fairs are organised every year in the state. These cattle fairs are conducted with the aim of motivating the farmers for developing and rearing elite animals and to provide a platform for animal transaction not only to the farmers and traders of the state, but also neighbouring states like Haryana, Uttar Pradesh, Punjab, Madhya Pradesh, Gujarat etc. The heritage of Rajasthan and its cultural diversities are also well projected in these state level cattle fairs. However, in spite of the huge significance of these cattle fairs, the number of animals both assembled and transacted has been decreasing over the years leaving an important question on the marketing efficiency of different animals in these fairs. The present study was carried out with the objective of analysing the price spread and marketing efficiency of different milch cow marketing channels in the cattle fairs.

## METHODOLOGY

The present study was based on multistage sampling. Out of the 10 state cattle fairs of Rajasthan, both cattle and buffalo in huge numbers are transacted in Ramvev, Veer Tejaji, Jaswant, Puskar, Chandra Bhagha and Baldev cattle fairs. Among these 6 cattle fairs, 4 cattle fairs i.e., Ramdev (Nagaur), Veer Tejaji (Parbatsar), Jaswant (Bharatpur) and Puskar (Ajmer) were selected due to the highest average number of bovine transacted during 2000-01 to 2009-10 (Directorate of Animal Husbandry, Government of Rajasthan). Primary data was collected during 2011 from randomly selected 30 sellers and 30 buyers from each cattle fair consisting of a total sample of 120 sellers and 120 buyers. Marketing transactions of milch cows in Jaswant and Puskar cattle fairs were considered for the study as there was no transaction of milch cows in the remaining two selected fairs. First, different milch cow marketing channels were identified and then marketing costs of sellers and buyers in each channel were estimated. Marketing costs and market margin per milch cow were estimated to arrive at the total price spread and marketing efficiency of different channels. Sellers' marketing cost components were cost of preparation (extra feeding, grooming and washing), transportation, feeding of animal at market, labour cost and miscellaneous expenses (own expense, expense on tent, rope etc.). On the other hand, buyers' cost components were transportation, market fee, feeding of animals at fair, labour cost and miscellaneous expenses (own expense, expense on tent, rope etc.). Cost on brokerage was absent for both sellers and buyers as brokers were prohibited in the fair premises. Price spread was worked out by subtracting the net price paid by producer from the effective price paid by ultimate buyer. Marketing efficiency was calculated using the Shephard's formula (Shepard, 1965) as follows:

$$ME = (V/I)-1$$

Where, ME = Index of marketing efficiency, V = Value of animal at the ultimate buyer's level, I = Gross marketing cost including margin/price spread. Higher value of the index indicates the higher marketing efficiency and vice-versa.

## RESULTS AND DISCUSSION

### Marketing channels

Six marketing channels i.e., (1) Farmer – Farmer, (2) Farmer – Local Trader – Farmer, (3) Farmer – Local Trader, (4) Farmer – Distant Trader – Farmer, (5) Farmer – Distant Trader and (6) Farmer – Local Trader – Distant Trader were identified for milch cow marketing in the cattle fairs (Table 1). In channel 1 both farmer seller and farmer buyer came to fairs for transaction. It was the most popular channel with the transaction of 38.17, 39.24 and 30.00 per cent of the non-descript, indigenous and cross-breed milch cows respectively. Sharma et al. (1997) in Punjab, Rajarajan (2000) in Tamil Nadu and Pandit (2005) in West Bengal also reported this channel to be the most popular one. In channel 2, farmers sold milch cows to local traders (from within the district where fair was organised) at their doorstep and local traders sold these animals to farmer buyers at fairs. About 11.45, 11.39 and 18.00 per cent of the non-descript, indigenous and cross-breed milch cows respectively, were transacted through channel 2. Pandit (2005) also reported this channel being used for milch cow marketing in West Bengal. In channel 3, transaction took place between farmer seller and local trader in fairs. Local trader purchased milch cows to earn margin/profit by selling at a later time. However, as the local trader would sell the animals outside fairs at a later time, therefore, it was impossible to track entire length of the channel and the final buyer. Hence in this channel, only marketing costs were estimated, but trader's margin, price spread and marketing efficiency could not be estimated due to the non-availability of the ultimate buyer. Through this channel, 16.03, 7.60 and 10.00 per cent of the total transaction of non-descript, indigenous and cross-breed milch cows respectively, took place. In channel 4, milch cows reached to ultimate buyer through distant trader (from outside the district where fair was organised including other states). Farmers sold milch cows to distant traders at their doorstep and distant traders sold them to farmer buyers at fairs. Channel 4 was used for the transaction of 12.21, 15.19 and 22.00 per cent of the non-descript, indigenous and cross-breed milch cows respectively. In channel 5, transaction took place between farmer seller and distant trader buyer at fairs. Distant trader buyers purchased milch cows from farmer sellers to earn margin/profit by selling at a later time. However, as the distant trader buyers would sell the animals outside the fairs at a later time, therefore, it was not possible to track entire length of the channel as well as the final buyer. Therefore, like channel 3, only marketing costs were calculated, but trader's margin, price spread and marketing efficiency could not be estimated due to the non-availability of the ultimate buyer. About 16.80, 21.52 and 18.00 per cent of the total transaction of non-descript, indigenous and cross-breed milch cows respectively, took place through channel 5. In channel 6, farmers sold milch cows to local traders at their doorsteps and local traders

subsequently sold them to distant trader buyers at fairs earning some margin/profit. In this channel also ultimate buyers could not be traced as distant trader buyers would sell the animals outside cattle fairs at some later time; therefore, only marketing costs were calculated. Through channel 6, only 5.34, 5.06 and 2.00 per cent of the total transaction of non-descript, indigenous and cross-breed milch cows respectively, took place. Thus, the most popular channel for transaction of all the three categories of milch cows was channel 1 and the least popular one was channel 6.

**Marketing costs**

In channel 1 (Farmer–Farmer), overall average marketing cost incurred by farmer sellers was Rs. 279.69, Rs. 318.87 and Rs. 419.03 for non-descript, indigenous and cross-breed milch cows respectively (Table 2). For non-descript milch cows, transportation cost (33.52%), feeding of animal at market (20.73%), and miscellaneous expenses i.e., own expenditure and expenditure on rope, tent and others (18.89%); for indigenous cows, transportation cost (37.01%), feeding at market (18.97%), miscellaneous expenses (18.69%) and labour cost (13.97%); and for cross-breed, transportation cost (45.34%), feeding at market (19.81%), miscellaneous expenses (14.44%) and preparation cost (10.64%) were the major cost components for sellers. Overall average marketing cost incurred by buyer was Rs. 285.22, Rs. 332.97 and Rs. 431.83 for non-descript, indigenous and cross-breed milch cows respectively. For non-descript milch cows, transportation cost (40.54%), feeding of animal at market (23.61%), and miscellaneous expenses (21.17%); for indigenous descriptive, transportation cost (43.96%), feeding of animal at market (22.52%), miscellaneous expenses (18.48%) and labour cost (13.54%); and for cross-breed, transportation cost (50.48%), feeding of animal at market (19.68%), miscellaneous expenses (18.37%) and labour cost (10.30%) were the major cost components for farmer buyers. Thus, in channel 1, buyers' costs were slightly higher than sellers' for all the three breed categories as expenses on market feeding of animals and miscellaneous expenses were comparatively higher for buyer as they had to stay at fair even after completion of purchase up to the fixed "Rawanna" date (the date when buyers had to pay fair tax/fee per animal, obtain payment receipt and allowed to leave fair) leading to increase in costs. Further, there were considerable differences in marketing costs across non-descript, indigenous and cross-breeds both for sellers and buyers. This was so because feeds and fodder intake as well as transportation costs varied across these breeds with cross-breed consuming more feeds and fodder because of heavy body capacity followed by indigenous and non-descript breeds.

For all the three categories of animals, transportation cost was the major cost component for both buyers and sellers in the study area. Similar results were reported by Rajarajan (2000) in Tamil Nadu.

On an average marketing cost incurred by local trader seller in channel 2 (Farmer – Local Trader – Farmer) was Rs. 394.70, Rs. 441.95 and Rs. 470.63 for non-descript, indigenous and cross-breed milch cows respectively (Table 3). For non-

descript, transportation cost (52.40%), feeding at market (17.33%) and miscellaneous expenses (13.42%); for indigenous breed, transportation cost (52.91%), feeding at market (17.04%), miscellaneous expenses (12.29%) and labour cost (9.32%); and for cross- breed, transportation cost (51.94%), feeding at market (19.36%), miscellaneous expenses (12.32%) and preparation cost (8.73%) were the major cost components for local trader sellers. On the other hand, overall average marketing cost incurred by farmer buyer was Rs. 282.73, Rs. 375.74 and Rs. 432.59 for non-descript, descriptive indigenous and cross-breed respectively. For non-descript, transportation cost (50.24%), feeding at market (19.61%), miscellaneous expenses (18.00%) and labour cost (10.38%); for indigenous, transportation cost (59.10%), feeding at market (16.13%) and miscellaneous expenses (14.91%); and for cross-breed milch cows, transportation cost (56.51%), feeding at market (18.24%) and miscellaneous expenses (15.24%) were the major cost components for farmer buyers. Marketing costs of local trader sellers were relatively higher for all three breed categories than farmer buyers mainly because of higher transportation cost. Further, there were differences in marketing costs across breed categories both for sellers and buyers. Pandit (2005) reported preparation and transportation costs for sellers whereas market fee and labour cost for buyers as the major cost components in this channel in West Bengal.

In channel 3, overall average marketing cost incurred by farmer seller was Rs. 316.06, Rs. 337.50 and Rs. 413.90 for non-descript, indigenous and cross-breed milch cows respectively (Table 4). For non-descript, transportation cost (43.14%), feeding at market (18.05%), miscellaneous expenses (16.11%) and labour cost (11.87%); for indigenous breed, transportation cost (44.89%), feeding at market (17.95%), miscellaneous expenses (16.60%) and preparation cost (11.06%); and for cross-breed, transportation cost (49.67%), feeding at market (19.33%), miscellaneous expenses (11.81%) and preparation cost (9.93%) were the major cost items for farmer sellers. On the other hand, overall average marketing cost incurred by local trader buyers was Rs. 387.72, Rs. 409.60 and Rs. 477.30 for non-descript, descriptive indigenous and cross-breed respectively. For non-descript milch cows, transportation cost (54.80%), feeding at market (19.70%), miscellaneous expenses (14.36%) and labour cost (9.85%); for indigenous breed, transportation cost (57.09%), feeding at market (18.38%), miscellaneous expenses (13.26%) and labour cost (10.05%); and for cross-breed, transportation cost (55.87%), feeding at market (22.35%), miscellaneous expenses (12.49%) and labour cost (8.24%) were the major cost items for local trader. Local trader's costs were marginally higher than farmer seller's cost for all the three categories of breed. There were differences in marketing costs across breeds both for sellers and buyers mainly because of variation in feeds and fodder intake as well as transportation costs with cross-breed consuming more feeds and fodder followed by indigenous and non-descript breeds.

On an average marketing cost incurred by distant trader seller in channel 4 (Farmer – Distant Trader – Farmer) was Rs. 514.53, Rs. 616.00 and Rs. 712.27 for

non-descript, indigenous and cross-breed milch cows respectively (Table 5). As far as the different components of marketing cost are concerned, for non-descript milch cows, transportation cost (64.32%), feeding at market (12.31%), miscellaneous expenses (10.13%) and preparation cost (6.76%); for indigenous breed, transportation (66.56%) feeding at market (12.34%), miscellaneous expenses (9.47%) and preparation cost (6.10%); and for cross-breed, transportation cost (65.99%), feeding at market (14.04%), miscellaneous expenses (7.68%) and preparation cost (6.73%) were the major cost components for distant trader sellers. However, the overall average marketing cost incurred by farmer buyer was Rs. 257.86, Rs. 318.00 and Rs. 453.66 for non-descript, descriptive indigenous and cross-breed respectively. For non-descript, transportation cost (43.86%), feeding at market (22.71%), miscellaneous expenses (19.85%) and labour cost (11.63%); for indigenous breed, transportation cost (52.20%), miscellaneous expenses (17.92%), feeding at market (17.61%) and labour cost (10.69%); and for cross-breed, transportation cost (50.70%), miscellaneous expenses (19.98%), feeding at market (17.63%) and labour cost (10.58%) were the major cost items for farmer buyers. Marketing costs incurred by distant trader seller were relatively higher than farmer buyer for all the three breed categories mainly because of the huge transportation cost incurred by them as they came from different far-away districts of Rajasthan and neighbouring states like Uttar Pradesh, Haryana, Punjab, Madhya Pradesh and Gujarat.

In channel 5 (Farmer – Distant Trader), overall average marketing cost incurred by farmer seller was Rs. 309.44, Rs. 339.73 and Rs. 472.47 for non-descript, indigenous and cross-breed milch cows respectively (Table 6). For non-descript, transportation cost (44.01%), feeding at market (17.27%), miscellaneous expenses (16.68%) and preparation cost (11.13%); for indigenous breed, transportation cost (41.21%), feeding at market (18.54%), miscellaneous expenses (18.15%) and labour cost (11.38%); and for cross-breed, transportation cost (51.29%), feeding at market (17.10%), miscellaneous expenses (13.67%) were major items of marketing costs for farmer seller. Overall average marketing cost incurred by distant trader buyer was Rs. 680.66, Rs. 761.64 and Rs. 815.38 for non-descript, descriptive indigenous and cross-breed milch cows respectively. For non-descript, transportation cost (77.52%), feeding at market (8.86%) and miscellaneous expenses (7.67%); for indigenous, transportation cost (76.58%), feeding at market (9.41%) and miscellaneous expenses (7.85%); and for cross-breed, transportation cost (73.59%), feeding at market (11.23%) and miscellaneous expenses (9.01%) were the major cost components for distant trader buyer. Distant trader buyer's costs were significantly higher than farmer seller's cost for all the three categories of breeds as they came from far-away places, even from neighbouring states to purchase animals.

Channel 6 was the least popular one. Overall average marketing cost incurred by local trader seller was Rs. 389.90, Rs. 467.15 and Rs. 478.55 for non-descript, indigenous and cross-breed milch cows respectively (Table 7). For non-descript,

transportation cost (50.53%), feeding at market (19.75%), miscellaneous expenses (12.93%) and preparation cost (9.29%); for indigenous breed, transportation cost (55.43%), feeding at market (15.90%) and miscellaneous expenses (11.39%); and for cross-breed, transportation cost (53.98%), feeding at market (17.06%), miscellaneous expenses (12.83%) and preparation cost (9.06%) were the major cost components for local trader sellers. Overall average marketing cost incurred by distant trader buyer was Rs. 646.90, Rs. 801.60 and Rs. 886.12 for non-descript, descriptive indigenous and cross-breed milch cows respectively. For non-descript, transportation cost (75.90%), feeding at market (8.47%), miscellaneous expenses (8.24%) and labour cost (6.62%); for indigenous, transportation cost (78.41%), feeding at market (9.27%) and miscellaneous expenses (7.24%); and for cross-breed, transportation cost (75.24%), feeding at market (10.53%), miscellaneous expenses (8.97%) and labour cost (4.70%) were the major cost items for distant trader buyer. Results indicated a higher cost for distant trader buyer as expected due to greater transportation costs for them.

Marketing costs of milch cows in different channels revealed that in general, both for sellers and buyers, transportation cost, expenses on feeding of animals at fair, miscellaneous expenses (including own expenses) were the major cost components and they varied across channels. Further, there were cost differences across non-descript, indigenous and cross-breed milch cows because of their differential feed intake capacity and body strength.

**Price spread and marketing efficiency**

Estimation of price spread and marketing efficiency assumes significance in ascertaining efficiency of a particular marketing channel. In the present study, price spread and marketing efficiency for (1) Farmer – Farmer, (2) Farmer – Local Trader – Farmer and (4) Farmer – Distant Trader – Farmer channels were estimated as these were full length channels; however, for the remaining three channels it was not possible to estimate price spread and marketing efficiency as entire length of the channels couldn't be tracked in fairs. In channel 1 (Farmer – Farmer), farmer's share in ultimate buyer's rupee was very high i.e., 93.18, 94.42 and 95.29 per cent for non-descript, indigenous and cross-breed respectively (Table 8) as there was no intermediary involved in between farmer seller and farmer buyer. The price spreads were Rs. 564.91, Rs. 651.84 and Rs. 850.86 for non-descript, indigenous and cross-breed respectively. Marketing efficiency was the highest for cross-breed (20.25%) followed by indigenous (16.92%) and non-descript (13.66%) as price spread in terms of percentage of buyer's rupee was lowest for cross-breed (4.71%) followed by indigenous (5.58%) and non-descript breed (6.82%). In channel 2 (Farmer – Local Trader – Farmer), farmer's share in the ultimate buyer's rupee was 87.99, 89.78 and 91.82 per cent for non-descript, indigenous and cross-breed respectively (Table 9). Price spreads were found to be Rs. 980.46, Rs. 1158.08 and Rs. 1302.04 for non-descript, indigenous and cross-breed respectively. Marketing efficiency was found to

be highest for cross-breed (11.23%) followed by indigenous (8.79%) and non-descript milch cows (7.32%) because price spread in terms of percentage of buyer's rupee was lowest for cross-breed (4.71%) followed by indigenous (5.58%) and non-descript (6.82%). Finally, in channel 4 (Farmer – Distant Trader - Farmer), farmer's share in ultimate buyer's rupee was 84.85, 87.49 and 90.75 per cent for non-descript, indigenous and cross-breed milch cows respectively (Table 10). Price spreads were found to be Rs. 1188.98, Rs. 1460.67 and Rs. 1826.23 for non-descript, indigenous and cross-breed respectively. In this channel also marketing efficiency was found to be highest for cross-breed (9.81%) followed by indigenous (6.99%) and non-descript milch cows (5.60%).

A comparative analysis of the three full length marketing channels revealed that marketing efficiency was clearly highest in channel 1 followed by channel 2 and channel 4 for all three breed categories (Table 11). Absence of intermediaries between farmer sellers and farmer buyers in channel 1 resulted in the highest marketing efficiency and maximum share of producer farmer in ultimate buyer's rupee as compared to channel 2 and channel 4. Further, marketing efficiency of channel 2 was more than channel 4 for all three breeds as price spread was more in channel 4 due to higher transportation cost incurred by distant trader seller than transportation cost of local trader sellers of channel 2. While studying the milch cow marketing, Kareeemulla and Srinivasan (1994) in Andhra Pradesh, Sharma et al. (1997) in Punjab, Rajarajan (2000) in Tamil Nadu and Pandit (2005) in West Bengal reported Farmer/Producer-Farmer/consumer channel to be the most efficient marketing channel for milch cows.

## CONCLUSION AND RECOMMENDATIONS

The study revealed that marketing efficiency and producer farmers' share in consumers' rupee were highest in channel 1 (Farmer - Farmer) followed by channel 2 (Farmer – Local Trader – Farmer) and channel 4 (Farmer – Distant Trader – Farmer) as price spread was the lowest in channel 1 followed by channel 2 and channel 4 across all three breed categories. Therefore, channel 1 was found to be preferred over other channels as there was no middleman in between farmer sellers and farmer buyers. As far as marketing costs are concerned, transportation cost was found to be the major cost component both for sellers and buyers in all the six milch cow marketing channels. Besides transportation, other major cost components which contributed to price spread were high cost of feeding animals at fairs and miscellaneous expenses (including own expenditure). In view of above findings, it would be good both for sellers and buyers if government can provide free or subsidized transportation facilities during the period of cattle fairs as it would boost up the assembling and transaction of animals which have been decreasing over the years. In view of relatively higher expenses on feeds and fodder both for sellers and buyers, authorities should provide quality feeds and fodder at reasonable prices at least during the period of cattle fairs. Authority should allow the buyers to leave fairs

immediately after transactions as this would reduce unwanted expenses on both feeds and fodder as well as own expenses which in turn would help in improving the marketing efficiency. Establishment of proper animal grading facilities may be made available for settling the price more effectively in the fairs. Above all, government should bring more number of local cattle fairs under the ambit of regulation to improve the efficiency of livestock marketing system in the state.

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**Table 1. Distribution of milch cows across different marketing channels.** **(in nos.)**

| Channel | ND | IND | CB |
|---|---|---|---|
| 1. F - F | 50 (38.17) | 31 (39.24) | 15 (30.00) |
| 2. F - LT - F | 15 (11.45) | 9 (11.39) | 9 (18.00) |
| 3. F - LT | 21 (16.03) | 6 (7.60) | 5 (10.00) |
| 4. F - DT - F | 16 (12.21) | 12 (15.19) | 11 (22.00) |
| 5. F - DT | 22 (16.80) | 17 (21.52) | 9 (18.00) |
| 6. F - LT - DT | 7 (5.34) | 4 (5.06) | 1 (2.00) |
| Total | 131 (100.00) | 79 (100.00) | 50 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed.
Figures in the parentheses indicate percentage of milch cows in different channels to total milch cows.
F = Farmer, LT = Local trader and DT = Distant trader.
"Distant Trader" is from outside the district & "Local Trader" is from within the district where cattle fair was organised.

**Table 2. Average cost of seller and buyer in marketing of milch cows (Channel 1: Farmer – Farmer) (in Rs. per milch cow)**

| Cost components | Seller | | | Buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 37.79 (13.51) | 36.23 (11.36) | 44.60 (10.64) | - | - | - |
| a. Extra feeding | 31.72 (11.34) | 30.23 (9.48) | 36.30 (8.66) | - | - | - |
| b. Grooming & washing | 6.07 (2.17) | 6.00 (1.88) | 8.30 (1.98) | - | - | - |
| B. Transportation cost | 93.75 (33.52) | 118.03 (37.01) | 190.00 (45.34) | 115.63 (40.54) | 146.36 (43.96) | 218.00 (50.48) |
| C. Market fee | - | - | - | 5.00 (1.75) | 5.00 (1.50) | 5.00 (1.16) |
| D. Feeding at market | 57.97 (20.73) | 60.45 (18.97) | 83.00 (19.81) | 67.34 (23.61) | 75.00 (22.52) | 85.00 (19.68) |
| E. Labour cost | 37.34 (13.35) | 44.55 (13.97) | 40.93 (9.77) | 36.88 (12.93) | 45.09 (13.54) | 44.50 (10.30) |
| F. Miscellaneous expenses | 52.84 (18.89) | 59.61 (18.69) | 60.5 (14.44) | 60.37 (21.17) | 61.52 (18.48) | 79.33 (18.37) |
| Total cost (A - F) | 279.69 (100.00) | 318.87 (100.00) | 419.03 (100.00) | 285.22 (100.00) | 332.97 (100.00) | 431.83 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 3. Average cost of local trader seller and buyer in marketing of milch cows (Channel 2: Farmer - Local Trader - Farmer) (in Rs. per milch cow)**

| Cost components | Local trader seller | | | Buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 34.24 (8.67) | 37.35 (8.45) | 41.12 (8.73) | - | - | - |
| a. Extra feeding | 28.86 (7.31) | 31.47 (7.12) | 35.56 (7.55) | - | - | - |
| b. Grooming & washing | 5.38 (1.36) | 5.88 (1.33) | 5.56 (1.18) | - | - | - |
| B. Transportation cost | 206.82 (52.40) | 233.82 (52.91) | 244.44 (51.94) | 142.05 (50.24) | 222.06 (59.10) | 244.44 (56.51) |
| C. Market fee | - | - | - | 5.00 (1.77) | 5.00 (1.33) | 5.00 (1.16) |
| D. Feeding at market | 68.41 (17.33) | 75.29 (17.04) | 91.11 (19.36) | 55.45 (19.61) | 60.59 (16.13) | 78.89 (18.24) |
| E. Labour cost | 32.27 (8.18) | 41.18 (9.32) | 36.00 (7.65) | 29.32 (10.38) | 32.06 (8.53) | 38.33 (8.85) |
| F. Miscellaneous expenses | 52.96 (13.42) | 54.31 (12.29) | 57.96 (12.32) | 50.91 (18.00) | 56.03 (14.91) | 65.93 (15.24) |
| Total cost (A - F) | 394.70 (100.00) | 441.95 (100.00) | 470.63 (100.00) | 282.73 (100.00) | 375.74 (100.00) | 432.59 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 4. Average cost of farmer seller and local trader buyer in marketing of milch cows (Channel 3: Farmer - Local Trader) (in Rs. per milch cow)**

| Cost components | Farmer seller | | | Local trader buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 34.24 (10.83) | 37.35 (11.06) | 41.12 (9.93) | - | - | - |
| a. Extra feeding | 28.86 (9.13) | 31.47 (9.32) | 35.56 (8.59) | - | - | - |
| b. Grooming & washing | 5.38 (1.70) | 5.88 (1.74) | 5.56 (1.34) | - | - | - |
| B. Transportation cost | 136.36 (43.14) | 151.47 (44.89) | 205.56 (49.67) | 212.50 (54.80) | 233.82 (57.09) | 266.67 (55.87) |
| C. Market fee | - | - | - | 5.00 (1.29) | 5.00 (1.22) | 5.00 (1.05) |
| D. Feeding at market | 57.05 (18.05) | 60.59 (17.95) | 80.00 (19.33) | 76.36 (19.70) | 75.29 (18.38) | 106.67 (22.35) |
| E. Labour cost | 37.50 (11.87) | 32.06 (9.50) | 38.33 (9.26) | 38.18 (9.85) | 41.18 (10.05) | 39.33 (8.24) |
| F. Miscellaneous expenses | 50.91 (16.11) | 56.03 (16.60) | 48.89 (11.81) | 55.68 (14.36) | 54.31 (13.26) | 59.63 (12.49) |
| Total cost (A - F) | 316.06 (100.00) | 337.50 (100.00) | 413.90 (100.00) | 387.72 (100.00) | 409.60 (100.00) | 477.30 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 5. Average cost of distant trader seller and farmer buyer in marketing of milch cows (Channel 4: Farmer - Distant Trader - Farmer) (in Rs. per milch cow)**

| Cost components | Distant trader seller | | | Farmer buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 34.78 (6.76) | 37.00 (6.10) | 48.00 (6.73) | - | - | - |
| a. Extra feeding | 30.10 (5.85) | 31.00 (5.03) | 37.00 (5.19) | - | - | - |
| b. Grooming & washing | 4.68 (0.91) | 6.00 (0.97) | 11.00 (1.54) | - | - | - |
| B. Transportation cost | 330.95 (64.32) | 410.00 (66.56) | 470.00 (65.99) | 113.10 (43.86) | 166.00 (52.20) | 230.00 (50.70) |
| C. Market fee | - | - | - | 5.00 (1.94) | 5.00 (1.57) | 5.00 (1.10) |
| D. Feeding at market | 63.33 (12.31) | 76.00 (12.34) | 100.00 (14.04) | 58.57 (22.71) | 56.00 (17.61) | 80.00 (17.63) |
| E. Labour cost | 33.33 (6.48) | 33.00 (5.36) | 39.60 (5.56) | 30.00 (11.63) | 34.00 (10.69) | 48.00 (10.58) |
| F. Miscellaneous expenses | 52.14 (10.13) | 60 (9.74) | 54.67 (7.68) | 51.19 (19.85) | 57.00 (17.92) | 90.66 (19.98) |
| Total cost (A - F) | 514.53 (100.00) | 616.00 (100.00) | 712.27 (100.00) | 257.86 (100.00) | 318.00 (100.00) | 453.66 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 6. Average cost of farmer seller and distant trader buyer in marketing of milch cows (Channel 5: Farmer - Distant Trader) (in Rs. per milch cow)**

| Cost components | Farmer seller | | | Distant trader buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 34.44 (11.13) | 36.40 (10.72) | 42.92 (9.08) | - | - | - |
| a. Extra feeding | 29.79 (9.63) | 30.67 (9.03) | 36.38 (7.70) | - | - | - |
| b. Grooming & washing | 4.65 (1.50) | 5.73 (1.69) | 6.54 (1.38) | - | - | - |
| B. Transportation cost | 136.18 (44.01) | 140.00 (41.21) | 242.31 (51.29) | 527.63 (77.52) | 583.33 (76.58) | 600.00 (73.59) |
| C. Market fee | - | - | - | 5.00 (0.73) | 5.00 (0.66) | 5.00 (0.61) |
| D. Feeding at market | 53.42 (17.26) | 63.00 (18.54) | 80.77 (17.10) | 60.26 (8.86) | 71.67 (9.41) | 91.54 (11.23) |
| E. Labour cost | 33.82 (10.93) | 38.67 (11.38) | 41.85 (8.86) | 35.53 (5.22) | 41.87 (5.50) | 45.38 (5.56) |
| F. Miscellaneous expenses | 51.58 (16.67) | 61.66 (18.15) | 64.62 (13.67) | 52.24 (7.67) | 59.77 (7.85) | 73.46 (9.01) |
| Total cost (A - F) | 309.44 (100.00) | 339.73 (100.00) | 472.47 (100.00) | 680.66 (100.00) | 761.64 (100.00) | 815.38 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 7. Average cost of local trader seller and distant trader buyer in marketing of milch cows (Channel 6: Farmer - Local Trader - Distant Trader) (in Rs. per milch cow)**

| Cost components | Local trader seller | | | Distant trader buyer | | |
|---|---|---|---|---|---|---|
| | ND | IND | CB | ND | IND | CB |
| A. Cost of preparation | 36.20 (9.29) | 40.00 (8.56) | 43.33 (9.06) | - | - | - |
| a. Extra feeding | 28.80 (7.38) | 32.14 (6.88) | 35.83 (7.49) | - | - | - |
| b. Grooming & washing | 7.40 (1.90) | 7.86 (1.68) | 7.50 (1.57) | - | - | - |
| B. Transportation cost | 197.00 (50.53) | 258.93 (55.43) | 258.33 (53.98) | 491.00 (75.90) | 628.57 (78.41) | 666.67 (75.24) |
| C. Market fee | - | - | - | 5.00 (0.77) | 5.00 (0.62) | 5.00 (0.56) |
| D. Feeding at market | 77.00 (19.75) | 74.29 (15.90) | 81.67 (17.06) | 54.80 (8.47) | 74.29 (9.27) | 93.33 (10.53) |
| E. Labour cost | 29.30 (7.51) | 40.71 (8.72) | 33.83 (7.07) | 42.80 (6.62) | 35.71 (4.46) | 41.67 (4.70) |
| F. Miscellaneous expenses | 50.40 (12.93) | 53.22 (11.39) | 61.39 (12.83) | 53.3 (8.24) | 58.03 (7.24) | 79.45 (8.97) |
| Total cost (A - F) | 389.90 (100.00) | 467.15 (100.00) | 478.55 (100.00) | 646.90 (100.00) | 801.60 (100.00) | 886.12 (100.00) |

ND = Non-descript, IND = Indigenous and CB = Cross-breed. Figures in parentheses indicate percentage of various costs to total cost.

**Table 8. Price spread and marketing efficiency in milch cow marketing (Channel 1: Farmer – Farmer) (in Rs. per milch cow)**

| | ND | IND | CB |
|---|---|---|---|
| 1. Net price received by farmer seller | 7714.06 (93.18) | 11028.86 (94.42) | 17230.97 (95.29) |
| 2. Total cost incurred by farmer seller | 279.69 (3.38) | 318.87 (2.73) | 419.03 (2.32) |
| 3. Farmer buyers purchase price (1+2) | 7993.75 | 11347.73 | 17650.00 |
| 4. Total cost incurred by farmer buyer | 285.22 (3.45) | 332.97 (2.85) | 431.83 (2.39) |
| 5.Effective price paid by farmer buyer (3+4) | 8278.97 (100.00) | 11680.7 (100.00) | 18081.83 (100.00) |
| 6. Price spread (5-1) | 564.91 (6.82) | 651.84 (5.58) | 850.86 (4.71) |
| 7. Marketing Efficiency (%) | 13.66 | 16.92 | 20.25 |

ND = Non-descript, IND = Indigenous and CB = Cross breed. Figures in parentheses indicate percentage to ultimate buyer's rupee.

**Table 9. Price spread and marketing efficiency in milch cow marketing (Channel 2: Farmer - Local Trader - Farmer) (in Rs. per milch cow)**

| | ND | IND | CB |
|---|---|---|---|
| 1. Net price received by farmer seller | 7181.82 (87.99) | 10176.48 (89.78) | 14619.44 (91.82) |
| 2. Total cost incurred by farmer seller | - | - | - |
| 3. Local trader seller's purchase price (1) | 7181.82 | 10176.48 | 14619.44 |
| 4.Total cost incurred by local trader seller | 394.7 (4.84) | 441.95 (3.90) | 470.63 (2.96) |
| 5. Local trader's net margin | 303.03 (3.71) | 340.39 (3.00) | 398.82 (2.50) |
| 6.Farmer buyers purchase price (3+4+5) | 7879.55 | 10958.82 | 15488.89 |
| 7.Total cost incurred by farmer buyer | 282.73 (3.46) | 375.74 (3.31) | 432.59 (2.72) |
| 8.Effective price paid by farmer buyer (6+7) | 8162.28 (100.00) | 11334.56 (100.00) | 15921.48 (100.00) |
| 9. Price spread (8-1) | 980.46 (12.01) | 1158.08 (10.22) | 1302.04 (8.18) |
| 10. Marketing Efficiency (%) | 7.32 | 8.79 | 11.23 |

ND = Non-descript, IND = Indigenous and CB = Cross breed. Figures in parentheses indicate percentage to ultimate buyer's rupee.

**Table 10. Price spread and marketing efficiency in milch cow marketing (Channel 4: Farmer - Distant Trader - Farmer) (in Rs. per milch cow)**

| | ND | IND | CB |
|---|---|---|---|
| 1. Net price received by farmer seller | 6656.98 (84.85) | 10217.33 (87.49) | 17907.43 (90.75) |
| 2. Total cost incurred by farmer seller | - | - | - |
| 3. Distant trader seller's purchase price (1) | 6656.98 | 10217.33 | 17907.43 |
| 4.Total cost incurred by distant trader seller | 514.53 (6.56) | 616.00 (5.27) | 712.27 (3.61) |
| 5.Distant trader's net margin | 416.58 (5.31) | 526.67 (4.51) | 660.30 (3.35) |
| 6.Farmer buyers purchase price (3+4+5) | 7588.1 | 11360 | 19280 |
| 7.Total cost incurred by farmer buyer | 257.86 (3.29) | 318.00 (2.72) | 453.66 (2.30) |
| 8.Effective price paid by farmer buyer (6+7) | 7845.96 (100.00) | 11678 (100.00) | 19733.66 (100.00) |
| 9. Price spread (8-1) | 1188.98 (15.15) | 1460.67 (12.51) | 1826.23 (9.25) |
| 10. Marketing Efficiency (%) | 5.60 | 6.99 | 9.81 |

ND = Non-descript, IND = Indigenous and CB = Cross breed. Figures in parentheses indicate percentage to ultimate buyer's rupee.

**Table 11. Price spread and marketing efficiency across different milch cow marketing channels (%)**

| Channel | Non-descript | | | Indigenous | | | Cross-breed | | |
|---|---|---|---|---|---|---|---|---|---|
| | PSBR | PS | ME | PSBR | PS | ME | PSBR | PS | ME |
| 1. Farmer - Farmer | 93.18 | 6.82 | 13.66 | 94.42 | 5.58 | 16.92 | 95.29 | 4.71 | 20.25 |
| 2. Farmer – Local Trader - Farmer | 87.99 | 12.01 | 7.32 | 89.78 | 10.22 | 8.79 | 91.82 | 8.18 | 11.23 |
| 4. Farmer – Distant Trader - Farmer | 84.85 | 15.15 | 5.60 | 87.49 | 12.51 | 6.99 | 90.75 | 9.25 | 9.81 |

PSBR = Producer farmer's share in ultimate buyer's rupee, PS = Price spread and ME = Marketing Efficiency