

*Original Research***An Economic Analysis of Cattle Marketing in Eastern Dry Zone of Karnataka****Mahesh Savanur¹, K. Satyanarayan², V. Jagadeeswary³ and J. Shilpa Shree^{4*}**^{1,2&3}Department of Veterinary and Animal Husbandry Extension, Veterinary College, Bangalore, Karnataka, INDIA⁴Department of Animal Husbandry Economics, Madras Veterinary College, Chennai, TamilNadu, INDIA***Corresponding author:** shilpashreej23@gmail.com

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Abstract

Cattle markets play an important role in connecting sellers and buyers and an efficient market is essential to promote the growth. An ex-post facto research design was adopted to study the economic analysis of cattle marketing in eastern dry zone of Karnataka. The study sample comprised of six cattle markets and two annual cattle fairs. Ten sellers, buyers and five brokers from each market and cattle fair were selected randomly. The study revealed that majority of cattle was transacted through channel 2 (57.76%), where broker negotiated the sale of cattle between seller and buyer. Marketing cost for bullock sale was highest (Rs.3, 784.29) in channel 4, where animal brought by traders were sold to buyers with the help of brokers. Expense on transportation was the major component of total marketing cost in all marketing channels. Brokerage accounted for 5.52 per cent of total marketing cost. Least expensive (Rs.841.00) channel for marketing of cow was found to be channel 1, where direct negotiation between seller and buyer reduced the expenses. Marketing cost was maximum (Rs.1480.41) when marketed through traders and brokers (Channel 4). Transportation (Rs.46.44) and own expenditures (Rs.23.01) were major components of the total marketing cost. Most efficient channel for marketing of bullock found to be channel 1, which had least difference between price received by the seller and effective price paid by the buyer. Marketing cost was highest in channel 4 and only 88.71 per cent of buyers' rupee was received by the seller. Similar to bullocks, most efficient channel for cow marketing was channel 1. In this channel seller received 93.61 per cent of buyers' rupee.

Key words: Cattle, Market, Efficiency, Price Spread

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Introduction

Agriculture and animal husbandry are major sources of livelihood to majority of rural households. Today, India holds the first place in the world in milk production. Milk production increased from 80.5 million tons in 2000-01 to 143.8 million tons in 2015-16. Per capita availability increased to 337 grams per day

from 214 grams per day. This increase is owing to increase in bovine population and increase in crossbred animal population. Buffaloes contribute about 55 per cent of the milk production. Milk production is mostly from large number of small scale producers. Dairying assures continuous and regular income to large number of farmers. Marketing in livestock sector plays an important role connecting producers and consumers. Market is a place where cattle are bought and sold at regular interval at particular place whereas the fair is the event where cattle are bought and sold but it is held together with other major events. Presence of regulated market for trade in animals helps smooth and efficient transactions. The regulated markets are considered to be responsible institutions in discharging all the functions connected with the sale of outputs, keeping in view the overall interest of the farming community and also the ultimate consumers. These institutions are meant to regulate unethical trading practices followed in the marketing of livestock. This would help in protecting the interest of both the sellers and buyers and thus it contributes towards the growth of orderly marketing and price stability through effective competition. Efficient functioning of a market is an essential pre-requisite of a sound cattle marketing system to provide remunerable prices to the seller and buyer. India has enormous cattle wealth but due to lack of regulated and efficient markets production potential is hindered (Directorate of marketing and inspection, 2005). In the recent years, the economy was liberalized and allowed private sector to participate in the trade of livestock. Keeping all these in view the present study was undertaken to study the economic analysis of cattle marketing in eastern dry zone of Karnataka.

Materials and Methods

An ex-post facto research design was adopted to study the structure and performance of cattle markets in eastern dry zone of Karnataka. Five regular cattle market and two annual cattle fairs were selected for the study. One regular cattle market from each district namely, Chandapur, Chikkaballapur, K G Temple, Mulbagal and Sugganahalli from Bangalore Rural, Chikkaballapur, Tumkur, Kolar and Ramanagar districts, respectively, were selected randomly. Among the cattle fairs, Subramanya cattle fair, Ghati and Siddaganga cattle fair, Tumkur were the larger cattle fairs in the study area, hence they were selected purposively for the study. In each cattle fair ten sellers, ten buyers and five brokers were selected, randomly. From each selected market ten sellers, ten buyers and five brokers were selected randomly. A total of 50 sellers, 50 buyers and 25 brokers from cattle markets and 20 sellers, 20 buyers and 10 brokers from cattle fairs were selected. In total 70 sellers, 70 buyers and 35 brokers constituted as sample for the study. Cattle and bullocks of adult age were transacted in market/fair. The respondents were personally interviewed using pre-tested interview schedule on various aspects of performance of markets and cattle fairs like number of sellers, buyers and animals marketed in a day. The time period for collection of data

was between the month of November to January. The collected data was subjected to appropriate statistical analysis.

Results and Discussion

Marketing Channels Operating and Volume of Transaction through these Channels

Following five marketing channels were identified for cow marketing in the study area.

Channel 1 → Seller - Buyer

Channel 2 → Seller – Broker - Buyer

Channel 3 → Seller – Trader - Buyer

Channel 4 → Seller – Trader – Broker - Buyer Channel 5 →
Seller - Slaughter Stock Dealer (SSD)

Table 1: Volume of sale of cattle through different marketing channels (In numbers)

Market	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Total
Sugganahalli	3	9	0	1	1	14
Mulbagal	3	10	4	1	0	18
Chikkaballapur	4	8	2	2	0	16
Chandapur	6	6	1	0	1	14
K G Temple	4	11	0	0	0	15
Ghati	7	13	0	1	0	21
Tumkur	5	10	2	1	0	18
Total	32 (27.59)	67 (57.76)	9 (7.76)	6 (5.17)	2 (1.72)	116 (100)

Figures in parentheses indicate percentage

In case of marketing of bullocks only first four channels were found operational. None of the bullock was transacted through Channel 3. Perusal of Table 1 revealed that channel 2 was most popular, accounting for majority (57.56%) of transactions. Since brokers engage regularly in marketing of cattle, they possessed adequate marketing information. Sellers and buyers were occasionally engaged in marketing of cattle and lacked adequate market information. Because of this sellers and buyers sought the service of brokers in market. This resulted in more number of transactions to take place through this channel. Least transactions (1.72%) took place through channel 5, where slaughter stock dealers directly negotiated sale of cattle with seller. The results were in contrary with the findings of Pandit (2005) who reported that majority of transactions took place through Farmer-trader-farmer channel.

Marketing Cost across Different Marketing Channels

In marketing of bullock, highest marketing cost (Rs.3784.29) was incurred when transacted through channel 4, where bullocks brought by trader were sold to buyer through broker (Table 2). Transportation expense was the major cost incurred in marketing of bullock in all available marketing channels in the

study area. Buyer shared majority of marketing cost in all marketing channels except channel 5, where slaughter stock dealer incurred the most cost associated with marketing.

Table 2: Average cost incurred in marketing of bullock and share of different marketing functionaries (In Rs. Per bullock)

Particulars	Channel 1	Channel 2	Channel 4	Channel 5	Overall
Extra Feed	100 (5.55)	216.67 (10.65)	190.48 (5.03)	100 (6.85)	151.79 (6.69)
Grooming and washing charge	89.65 (4.97)	20 (0.98)	14.29 (0.38)	0 (0)	30.99(1.36)
Transportation	1400 (77.66)	1206.67 (59.33)	2395.24 (63.29)	1200 (82.19)	1550.48 (68.3)
Feed at market	0 (0)	137.33 (6.75)	107.14 (2.83)	0 (0)	61.12 (2.69)
Market Fee	10 (0.55)	3.2 (0.16)	8.1 (0.21)	10 (0.68)	7.83 (0.34)
Own Expenditure	150 (8.32)	198.33 (9.75)	604.76 (15.98)	150 (10.27)	275.77 (12.15)
Labour	53 (2.94)	60 (2.95)	83.33 (2.2)	0 (0)	49.08 (2.16)
Brokerage	0 (0)	125 (6.15)	376.19 (9.94)	0 (0)	125.3 (5.52)
Miscellaneous	0 (0)	66.67 (3.28)	4.76 (0.13)	0 (0)	17.86 (0.79)
Total	1802.65 (100)	2033.87 (100)	3784.29 (100)	1460 (100)	2270.2 (100)
Seller's Share	643.91 (35.72)	570.91 (28.07)	188.46 (4.98)	355.07 (24.32)	439.59 (19.36)
Buyer's Share	1158.74 (64.28)	1462.96 (71.93)	2645.22 (69.9)	0 (0)	1316.73 (58)
Trader's Share	0 (0)	0(0)	950.61(25.12)	0(0)	237.65 (10.47)
Slaughter Stock Dealer' Share	0 (0)	0 (0)	0 (0)	1104.93 (75.68)	276.23 (12.17)

Figures in parentheses indicate percentage

Perusal of Table 3 revealed that highest cost in marketing of cow (Rs.1480.41) was incurred when transacted through trader and broker (channel 4).

Table 3: Average cost incurred in marketing of cow and share of different marketing functionaries (In Rs. Per cow)

Particulars	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Overall
Extra Feed	150.00 (17.84)	107.89 (8.75)	50.00 (4.13)	0.00 (0.00)	45.00 (3.80)	70.58 (5.93)
Grooming and washing charge	0.00 (0.00)	34.21 (2.77)	39.81 (3.28)	0.00 (0.00)	0.00 (0.00)	14.80 (1.24)
Transportation	300.00 (35.67)	648.50 (52.58)	778.41 (64.22)	751.67 (50.77)	285.00 (24.07)	552.72 (46.44)
Feed at market	0.00 (0.00)	43.82 (3.55)	43.89 (3.62)	133.33 (9.01)	50.00 (4.22)	54.21 (4.55)
Market Fee	0.00 (0.00)	4.21 (0.34)	3.15 (0.26)	10.00 (0.68)	5.00 (0.42)	4.47 (0.38)
Own Expenditure	53.00 (6.30)	191.84 (15.55)	266.67 (22.00)	398.00 (26.88)	460.00 (38.85)	273.90 (23.01)
Labour	291.00 (34.60)	48.68(3.95)	29.63(2.44)	0.00 (0.00)	134.00 (11.32)	100.66(8.46)
Brokerage	0.00 (0.00)	154.23 (12.50)	0.00 (0.00)	187.41 (12.66)	0.00 (0.00)	109.33 (9.19)
Miscellaneous	47.00 (5.59)	0.00 (0.00)	0.56 (0.05)	0.00 (0.00)	0.00 (0.00)	9.51 (0.80)
Total	841.00 (100.00)	1233.38 (100.00)	1212.12 (100.00)	1480.41 (100.00)	979.00 (100.00)	1190.18 (100.00)
Seller's Share	386.03 (45.90)	540.47 (43.82)	0.00 (0.00)	0.00 (0.00)	387.00 (39.53)	397.47 (33.12)
Buyer's Share	454.97 (54.10)	692.91 (56.18)	468.85 (38.68)	1202.98 (81.26)	0.00 (0.00)	470.17 (39.18)
Trader's Share	0.00 (0.00)	0.00 (0.00)	743.27 (61.32)	277.43 (18.74)	0.00 (0.00)	65.48 (5.46)
Slaughter Stock Dealer's share	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	592 (60.47)	267.05 (22.25)

Figures in parentheses indicate percentage

Least cost (Rs.841) was involved in marketing of cow when seller and buyer directly negotiate sale without involving any intermediaries. On an average most of the marketing cost was incurred on

transportation (46.44%). Major cost was incurred by the buyers in channel 1 (54.10%), channel 2 (58.18%) and channel 4 (81.26%). In channel 3 trader incurred majority (60.32%) of marketing cost. Findings of present study are similar to findings of Biswal and Sanjaykumar (2011) and Vitonde *et al.* (2004) who reported that as number of market intermediaries increased the marketing cost also increases because of increased margin earned by each person. But, present findings are contrary to the observations of Pandit (2005) finding that farmer sellers and farmer buyers generally did not incur any transportation cost due to visit of markets by walking.

Price Spread and Marketing Efficiency across Marketing Channels

Perusal of Table 4 revealed that price spread (17.29 per cent of buyer's rupee) was highest in channel 4, where cattle brought by trader were sold with the help of brokers.

Table 4: Price spread and marketing efficiency in marketing of bullock (In Rs. per bullock)

S. No.	Particulars	Channel 1	Channel 2	Channel 4	Channel 5	Overall
1	Net price received by seller	27066.93 (93.76)	16234.18 (88.87)	18100 (82.71)	11853 (89.03)	18313.53 (88.97)
2	Cost incurred by seller	643.91 (2.23)	570.91 (3.13)	88.46 (0.40)	355.07 (2.67)	414.59 (2.01)
3	Brokerage	0 (0)	125 (0.68)	376.19 (1.72)	0 (0)	125.3 (0.61)
4	Cost incurred by buyer	1158.74 (4.01)	1337.96 (7.32)	2345.12 (10.72)	0 (0)	1210.46 (5.88)
5	Cost incurred by trader	0 (0)	0 (0)	974.52 (4.45)	0 (0)	243.63 (1.18)
6	Cost incurred by SSD	0 (0)	0 (0)	0 (0)	1104.93 (8.30)	276.23 (1.34)
7	Effective price paid by buyer	28869.58 (100.00)	18268.05 (100.00)	21884.29 (100.00)	13313 (100.00)	20583.73 (100.00)
8	Price spread (7-1)	1802.65 (6.24)	2033.87 (11.13)	3784.29 (17.29)	1460 (10.97)	2270.2 (11.03)
9	Market efficiency (ratio-1/8)	15.02	7.98	4.78	8.12	8.07

Figures in parentheses indicate percentage of the ultimate buyer's rupee

In contrast price spread (6.24 per cent of buyer's rupee) was found lowest in channel 1, where direct negotiation took place between buyer and seller. Channel 1 was found most efficient (15.02) and channel 4 was discovered to be least efficient (4.17). Higher price realization was possible in channel 1 because of direct negotiation between seller and buyer, which eliminated brokerages and margins earned by the traders. This resulted in channel 1 being most efficient in the study area for marketing of bullocks.

Close examination of Table 5 discloses that most efficient (14.65) channel for marketing of cow in the study area was Channel 1 where seller and buyer directly negotiated sale without any intermediary. Seller's share ultimate buyer rupee (6.21%) was highest in this channel. Least efficient channel for cow marketing was channel 5 where cows meant for slaughter were sold to slaughter stock dealer. Due to lower average price per cow (Rs.4110.0) this channel was found least efficient. Patil *et al.* (1979) reported lower (67.52%) share of owner of cow in ultimate buyers' rupee, which is in contrast to the findings of present study.

Table 5: Price spread and marketing efficiency in marketing of cow (In Rs. per cow)

S. No.	Particulars	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Overall
1	Net price received by seller	12685 (93.61)	11644.85 (90.54)	8597 (87.64)	13645 (89.11)	4110 (75.72)	10136.37 (89.41)
2	Cost incurred by seller	405.22 (2.99)	440.47 (3.42)	0 (0)	0 (0)	487(8.97)	347.47 (3.07)
3	Brokerage	0 (0)	154.27 (1.20)	0 (0)	200.41 (1.31)	0 (0)	109.33 (0.96)
4	Cost incurred by buyer	435.78 (3.22)	638.64 (4.97)	743.27 (7.58)	1002.98 (6.55)	0 (0)	411.17 (3.63)
5	Cost incurred by trader	0 (0)	0 (0)	468.85 (4.78)	277.02 (1.81)	0 (0)	65.16 (0.57)
6	Cost incurred by SSD	0 (0)	0 (0)	0 (0)	0 (0)	492 (9.06)	267.05 (2.36)
7	Effective price paid by buyer	13550.68 (100.00)	12860.85 (100.00)	9809.12 (100.00)	15312.82 (100.00)	5428 (100.00)	11336.55 (100.00)
8	Price spread (7-1)	841 (6.21)	1233.38 (9.59)	1212.12 (12.36)	1480.41 (9.67)	979 (21.81)	1200.18 (10.59)
9	Market efficiency (ratio-1/8)	14.65	9.44	7.09	9.22	4.2	8.45

Figures in parentheses indicate percentage of the ultimate buyer's rupee

The findings of the present study are in agreement with the findings of Pandit (2005) who reported that as number of intermediaries increased, the price spread increased and efficiency of channels decreased. Accordingly most efficient channel was where only seller and buyer were involved and least efficient channel was which involved large number of intermediaries.

Conclusion

The study concluded that cattle sales were more in channel 2, where broker was involved because they lack adequate market information and knowledge. Concerned marketing authorities need to strengthen market information services to meet this information gap. Television, radio, farmer help line and websites could be used as tools for knowledge and information dissemination. Major expense in marketing was incurred on transportation. Creating community transport service for animal or subsidising transport cost would reduce marketing cost. In the study area, it was observed that the length of market channel has resulted in increased price spread and decreased marketing efficiency. Measures to decrease the number of intermediaries involved in marketing need to be undertaken. Promoting e cooperative in marketing of cattle can achieve this objective effectively. Scientific price fixation of cattle should be encouraged. Educating farmers about the economically important traits to be considered in pricing of cow and bullocks is essential.

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