



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

## **Efficiency of Male Goat Markets in the Central Alluvial Plains of West Bengal\***

**Arun Pandit<sup>1</sup> and J.P. Dhaka<sup>2</sup>**

### **Abstract**

The marketing of goats has been studied in the four animal markets of Nadia and Hooghly districts of Central Alluvial Plains of West Bengal. Data have been collected from 30 sellers and 30 buyers, selected randomly from each market during 2001-02. In all, 228 Black Bengal and 76 Jamunapari goats have been found transacted among the selected sellers and buyers during the period. Five marketing channels have been found in male goat marketing in the study area. The major marketing cost components have been found as assembling -maintenance, animal preparation, labour and transportation for sellers and market fee, labour and levy for buyers. No broker is involved in goat marketing in the study area. The gross market margin has been found lowest in the Farmer – Farmer channel. Therefore, this channel has turned out to be most efficient. It has also been found that as the number of intermediaries between producer and ultimate buyer increases, the producer's share goes on decreasing. The study has suggested streamlining of the margins of traders and market fee, price fixation based on well-defined parameters and conservation of the Black Bengal goat germplasm in the state.

### **Introduction**

Among the small ruminants, goat is perhaps the most useful animal providing milk as well as meat. It is also superior in converting the feeds to meat and other products in a short period than most of the other livestock.

---

<sup>1</sup> Scientist (Agricultural Economics), Central Potato Research Institute, Shimla-171001

<sup>2</sup> Principal Scientist (Agricultural Economics), National Dairy Research Institute, Karnal-132 001 (Haryana)

\*The paper has been drawn from the Ph.D. thesis entitled "Efficiency of Male Goat Markets in the Central Alluvial Plains of West Bengal" submitted by the first author to National Dairy Research Institute, Karnal, Haryana.

The authors thank the referee for his valuable comments.

Goat meat accounted for almost 37 per cent of the total meat production in the country (Chandra, 2002). The importance of goat lies primarily in its quick proliferation, higher rate of growth and the ease with which goats as well as products derived from them could be marketed for food, fibre and leather. The economy of West Bengal is primarily based on agriculture and animal husbandry is closely associated with agriculture. The crop and livestock enterprises constitute two major functional components of mixed farming in determining the agriculture-based economy. The state of West Bengal possesses 14.12 million goats (Govt. of West Bengal, 2001), which are mainly of 'Black Bengal' breed. Although this breed is poor milk-yielder, it is known for its superior quality of meat and skin. Very few studies have been conducted on the economic and marketing aspects of goats. The marketing of livestock in general, and of goats in particular, in India is not orderly and efficient. There are a number of marketing channels and several market intermediaries are involved in a particular marketing channel. Therefore, the producer is usually deprived of his due share in the buyer's rupee. Although some studies as those by Dixit and Shukla (1995), Shukla and Dixit (1996), Singh and Hussain (1996) and Kumar and Singh (1999), have been made on goat marketing, no such study has been done for goats in West Bengal. This study was undertaken with a view to explore the various facets of goat marketing in the Central Alluvial Plains of West Bengal. The specific objective of the study was to identify marketing channels and to estimate the marketing costs, margins, price spreads, and marketing efficiency in male goat marketing in West Bengal.

### **Methodology**

The Central Alluvial Plains (CAP) of the Lower Gangetic Plain region was selected for the present study. The CAP is comprised of 7 districts, namely Hooghly, Nadia, Burdwan, Howrah, Paschim Medinipur, Purba Medinipur and Murshidabad. Among these 7 districts, Hooghly and Nadia have a higher density of livestock (601 and 595 per sq km, respectively) as well as of goats (248 and 291 per sq km, respectively). They possess 7.73 and 11.36 lakh goats, respectively (Govt. of West Bengal, 2001). Hence, the districts Hooghly and Nadia were selected purposively. Two markets with higher animal transactions from each district were selected purposively, namely Birohi and Birnagar from Nadia, and Mayapur and Pandua from Hooghly. All the selected markets were being held weekly, except in Pandua, which was bi-weekly. The final unit of the sample was consisted of 30 sellers and 30 buyers from each market drawn randomly. Hence, the total sample size was of 120 sellers and 120 buyers. The data were collected seasonally, viz. summer, rainy and winter seasons during the year 2001-02.

In all, 228 Black Bengal and 76 Jamunapari goats were transacted among the selected sellers and buyers. For the present study, only male goats were taken into account because Black Bengal goats being poor milk-yielders are reared mainly for the meat purpose and for this, only male goats are slaughtered.

First of all the marketing channels were identified through which male goats were being transacted in the selected markets. Marketing cost was worked out separately for the seller and the buyer for each channel. The seller's marketing cost components were: assembling and maintenance, animal preparation which included cost on extra-feeding and grooming and washing; market fee; transportation; labour; seller's personal expenditure; feeding of animals at the market; and some miscellaneous costs. The traders were found going to the villages to purchase the goats from producers. After purchasing, they kept the animals in their homes for assembling before marketing. Generally, the sellers prepared the goats a few days before marketing to enhance their body weight and /or to provide them a better look. On the other hand, buyers had to incur marketing cost on feeding the animals at the market, transportation cost, personal expenditure, market fees, labour cost and miscellaneous costs. In addition, a levy of one per cent of market price of animal was charged in the Mayapur and Pandua markets by Champadanga Regulated Marketing Society and Pandua Regulated Marketing Committee, respectively from the buyers only. No broker was found in the marketing of goats in the study area. The gross market margin was worked out by subtracting the net price received by the producer farmer from the effective price paid by the ultimate buyer. The effective price meant the purchase price *plus* the marketing cost. Marketing efficiency was calculated using the Shepherds' formula (Shepherd, 1965) given by Eq. (1):

$$ME = \frac{V}{I} - 1 \quad \dots (1)$$

where,

ME = Index of marketing efficiency

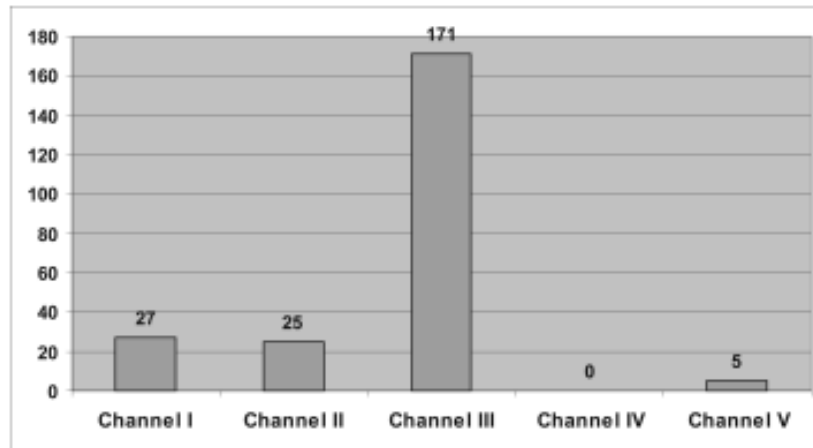
V = Value of the animal at ultimate buyer's level

I = Gross marketing cost

## Results and Discussion

### Marketing Channels

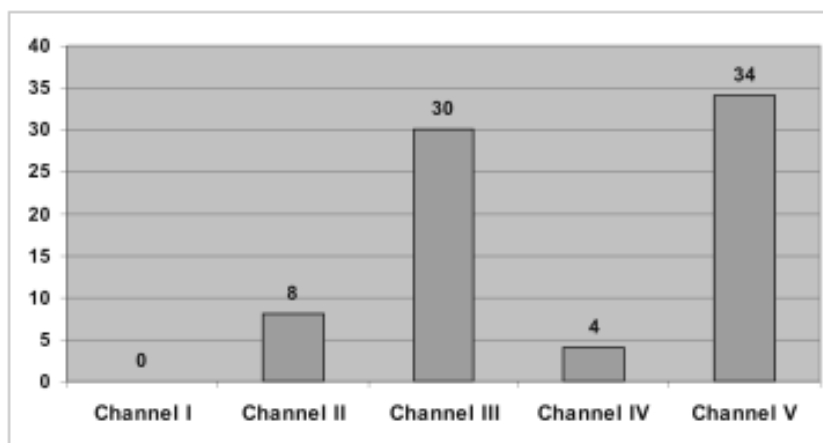
The five main marketing channels for transacting the male goats in the study area were:



**Figure 1. Channel-wise distribution of Black Bengal goats**

- I. Farmer – Farmer
- II. Farmer – Butcher
- III. Farmer – Local Trader – Butcher
- IV. Farmer – Distant Trader – Farmer
- V. Farmer – Distant Trader – Butcher

Channel-wise distribution of 304 male goats has been presented in Figure 1 for Black Bengal and in Figure 2 for Jamunapari goats. A perusal of these figures revealed that the majority (75% of the Black Bengal and 39.47% of the Jamunapari) of the goats were transacted through the Channel III. For Jamunapari goats, the majority of the animals (44.74%) were sold through



**Figure 2. Channel-wise distribution of Jamunapari goats**

Channel V. Channel I for Black Bengal goats and Channel III for Jamunapari goats emerged as the second most important channels. No marketing of male goats was observed through Channel IV for Black Bengal and Channel I for the Jamunapari breeds. Through Channel II, 25 (10.96%) Black Bengal goats and 8 (10.53%) Jamunapari goats were transacted.

### **Marketing Cost**

Marketing costs incurred by the seller and the buyer through Channel I have been presented in Table 1. Only Black Bengal goats were sold through this channel. It was observed from Table 1 that the seller had to incur Rs 27.06 for selling one Black Bengal goat and for the buyer, the amount was Rs 34.04. The cost on labour in the total cost was about 51 per cent for the seller and about 43 per cent for the buyer. Other major items of expenditure were preparation cost (27.35%) for seller and market fee (24.06%) for the buyer. A wide difference in market fee structure was observed across different markets. Moreover, buyers had to pay significantly higher fees than that of sellers (Appendix I). The green fodder was not available in the market and the goats were usually fed with some tree leaves. Sometimes, sellers brought green grass with them. Feeding at the market also served as an indicator for assessing the health condition of the animal. Here, feed cost at the market included only the labour cost for procuring this fodder. At home, farmers as well as traders rarely fed the concentrate to the goats. A few days before marketing of the animals they were usually fed with extra amount of tree leaves and grass. For working out the cost of this extra feed, only labour cost was considered.

The costs incurred by the seller and the buyer through Channel II are also given in Table 1. It was found that a seller had to incur Rs 31.84 for selling one Black Bengal goat and Rs 40.58 for selling one Jamunapari goat. Like Channel I, labour cost was found to be the major component (about 48%) in the total cost, followed by cost on preparation (about 30%) and sellers own expenditure (about 13%) in the market. On the other hand, butcher had to pay Rs 43.86 for buying one Black Bengal goat and Rs 53.09 for a Jamunapari goat. Costs on transportation and labour were the most significant items in total cost for these two breeds.

In Channel III, most important for Black Bengal goat marketing, butcher got the animal from the local trader who eventually purchased it from the farmers in the villages. The producer farmer did not spend any money because they sold their animals at their doorstep. The local trader purchased the animals and kept them in his home. The distant trader in the Channels IV and V followed the same practice. On an average, the local trader and

**Table 1. Average cost incurred by seller and buyer in marketing of male goats in West Bengal**

(in Rs per goat)

S. No.	Item	Channel I (Farmer-Farmer)		Channel II (Farmer-Butcher)				Channel III (Farmer-Local Trader-Butcher)			
		Black Bengal		Black Bengal		Jamunapari		Black Bengal		Jamunapari	
		Seller	Buyer	Seller	Buyer	Seller	Buyer	Seller	Buyer	Seller	Buyer
1.	Assembling and maintenance	-	-	-	-	-	-	16.00	-	16.00	-
								(30.07)		(32.01)	
2.	Extra feed	6.05	-	7.54	-	7.69	-	10.69	-	9.69	-
		(22.36)		(23.68)		(18.95)		(20.09)		(19.38)	
3.	Grooming & washing	1.35	-	1.85	-	4.38	-	1.91	-	5.10	-
		(4.99)		(5.81)		(10.79)		(3.59)		(10.21)	
4.	Cost of preparation (2+3)	7.40	-	9.39	-	12.07	-	12.60	-	14.79	-
		(27.35)		(29.49)		(29.74)		(23.68)		(29.59)	
5.	Transportation	0.62	-	-	16.16	-	19.60	13.09	18.21	10.49	38.04
		(2.29)			(36.84)		(36.92)	(24.68)	(40.48)	(20.98)	(46.55)
6.	Feed at market	1.22	0.67	1.69	1.31	2.38	1.48	1.42	1.24	1.05	1.35
		(4.51)	(1.97)	(5.31)	(2.99)	(5.86)	(2.79)	(2.67)	(2.76)	(2.10)	(1.65)
7.	Market fee	1.37	8.19	1.44	4.85	1.25	11.54	1.06	7.92	1.70	22.10
		(5.06)	(24.06)	(4.52)	(11.06)	(3.08)	(21.74)	(1.99)	(17.60)	(3.40)	(27.05)
8.	Own expenditure	2.64	5.37	4.04	4.46	5.50	5.38	2.61	4.26	1.84	9.85
		(9.76)	(15.78)	(12.69)	(10.17)	(13.56)	(10.13)	(4.91)	(9.47)	(3.68)	(12.06)
9.	Labour	13.81	14.46	15.28	12.18	19.38	10.34	6.43	7.47	4.12	5.20
		(51.03)	(42.48)	(47.99)	(27.77)	(47.76)	(19.48)	(12.08)	(16.60)	(8.24)	(6.37)
10.	Levy	-	4.93	-	3.90	-	3.75	-	4.89	-	4.17
			(14.48)		(8.89)		(7.06)		(10.87)		(5.10)
11.	Miscellaneous	-	0.42	-	1.00	-	1.00	-	1.00	-	1.00
			(1.23)		(2.28)		(1.88)		(2.22)		(1.22)
12.	Total	27.06	34.04	31.84	43.86	40.58	53.09	53.21	44.99	49.99	81.71
		(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Note: Figures within parentheses indicate percentages of the total marketing cost.

distant trader had to incur Rs 16 and Rs 22, respectively on each goat for assembling and maintaining before their transportation to the market. The cost structure for the local trader seller and butcher buyer has been presented in Table 2. It could be observed that a local trader spent Rs 53.21 for selling one Black Bengal and Rs 49.99 for selling one Jamunapari goat. The expenses on assembling and maintenance, transportation, animal preparation and labour were the major items of cost for sellers. Similarly, butchers cost for buying one Black Bengal goat was Rs 44.99 and that for a Jamunapari goat Rs 81.71 (Table 1). The costs on transportation (40.48% and 46.55%), market fee (17.60% and 27.05%) and labour cost (16.60% and 6.37%) were the three major components of cost to the butcher for both types of goats.

Only Jamunapari goat was transacted through Channel IV and the cost structure of seller and buyer has been presented in Table 2. It was found that a distant trader had to spend Rs 94.92 and the farmer buyer Rs 49.12 for selling and buying one Jamunapari goat, respectively. For the distant trader, cost on transportation was the major item (42.63%) in the total cost because they had to come from the distant places like Bihar, Jharkhand and UP. Costs on assembling-maintenance (23.18%) and preparation (22.35%) occupied the second and third place in the total cost. For the buyer, the major components of cost were labour (32.57%), levy (28.63%) and market fee (28.62%).

Through Channel V, largely Jamunapari goat was transacted and the marketing of Black Bengal goat was limited to the Mayapur market only. Table 2 shows that the average marketing cost incurred by a distant trader seller for selling one Black Bengal goat was Rs 85.62 and one Jamunapari goat Rs 132.29. The cost on transportation formed the major component of cost for distant trader seller; it was 47.26 per cent of the total cost for a Black Bengal goat and 54.56 per cent for a Jamunapari goat. The costs on preparation and personal expenditure were the other two major items. It could also be observed from Table 2 that a butcher spent Rs 29.38 and Rs 48.33 for purchasing one Black Bengal and Jamunapari goat, respectively. The principal cost items were levy (40.94%) for Black Bengal goat and transportation (34.30%) for a Jamunapari goat. The costs on labour (11.06% and 14.17%) were the other major items.

### **Price Spread Analysis**

Price spread analysis was carried out for each channel separately for both the breeds of goats and is presented in Table 3.

Through Channel I, having transaction of only Black Bengal goat, the producer farmer got a higher share of 93.28 per cent in the buyer's rupee.



**Table 2. Average cost incurred by distant trader seller and farmer/butcher buyer in marketing of male goats**

(Rs per goat)

S. No.	Item	Channel IV (Farmer-Distant Trader-Farmer)		Channel V (Farmer-Distant Trader-Butcher)			
		Jamunapari		Black Bengal		Jamunapari	
		Seller	Buyer	Seller	Buyer	Seller	Buyer
1.	Assembling and maintenance	22.00 (23.18)	-	22.00 (25.69)	-	22.00 (16.63)	-
2.	Extra feed	13.00 (13.70)	-	8.00 (9.34)	-	12.27 (9.28)	-
3.	Grooming & washing	8.22 (8.65)	-	2.22 (2.59)	-	4.59 (3.47)	-
4.	Cost of preparation (2+3)	21.22 (22.35)	-	10.22 (11.93)	-	16.86 (12.75)	-
5.	Transportation	40.46 (42.63)	-	40.46 (47.26)	7.10 (24.17)	72.18 (54.56)	16.58 (34.30)
6.	Feed at market	1.67 (1.67)	-	1.67 (1.95)	-	8.88 (6.71)	1.38 (2.86)
7.	Market fee	1.00 (1.05)	14.06 (28.62)	1.00 (1.17)	2.50 (8.51)	0.50 (0.38)	5.22 (10.80)
8.	Own expenditure	5.97 (6.29)	5.00 (10.18)	7.67 (8.96)	3.00 (10.21)	7.09 (5.36)	4.43 (9.17)
9.	Labour	2.60 (2.74)	16.00 (32.57)	2.60 (2.04)	3.25 (11.06)	4.59 (3.47)	6.85 (14.17)
10.	Levy	-	14.06 (28.63)	-	12.03 (40.94)	-	12.87 (26.63)
11.	Miscellaneous	-	-	-	1.50 (5.11)	0.19 (0.14)	1.00 (2.07)
12.	Total	94.92 (100.00)	49.12 (100.00)	85.62 (100.00)	29.38 (100.00)	132.29 (100.00)	48.33 (100.00)

Note: Figures within the parentheses indicate percentages of the total marketing cost.

**Table 3. Price spread analysis in male goat marketing in West Bengal**

Particulars	(in Rs per goat)							
	Channel I (Farmer-Farmer)	Channel II (Farmer-Butcher)		Channel III (Farmer-Local Trader-Butcher)		Channel IV (Farmer-Distant trader-Farmer)	Channel V (Farmer-Distant trader-Butcher)	
	Black Bengal	Black Bengal	Jamuna- pari	Black Bengal	Jamuna- pari	Jamuna- pari	Black Bengal	Jamuna- pari
1. Net price received by producer	848.12 (93.28)	885.83 (92.13)	1167.55 (92.57)	816.02 (80.68)	1320.80 (84.33)	1171.50 (80.49)	949.40 (77.04)	1162.02 (77.39)
2. Cost incurred by producer	27.06 (2.98)	31.84 (3.31)	40.58 (3.22)	-	-	-	-	-
3. Local trader/distant trader's purchase price	-	-	-	816.02	1320.80	1170.50	949.40	1162.02
4. Cost incurred by local trader/distant trader	-	-	-	53.21 (5.26)	49.99 (3.19)	94.92 (6.52)	85.62 (6.95)	132.29 (8.81)
5. Local trader/distant trader's net margin	-	-	-	97.21 (9.61)	113.71 (7.26)	139.83 (9.61)	167.98 (13.63)	158.78 (10.58)
6. Farmer/butcher buyer's purchase price	875.18	917.67	1208.13	966.44	1484.50	1406.25	1203.00	1453.09
7. Cost incurred by farmer/butcher buyer	34.04 (3.74)	43.86 (4.56)	53.09 (4.21)	44.99 (4.45)	81.71 (5.22)	49.12 (3.38)	29.38 (2.38)	48.33 (3.22)
8. Effective Price of farmer/butcher buyer (6+7)	909.22 (100.00)	961.53 (100.00)	1261.22 (100.00)	1011.43 (100.00)	1566.21 (100.00)	1455.37 (100.00)	1232.38 (100.00)	1501.42 (100.00)
9. Gross market margin (8 – 1)	61.10 (6.72)	75.70 (7.87)	93.67 (7.43)	195.41 (19.32)	245.41 (15.67)	283.87 (19.51)	282.98 (22.96)	339.40 (22.61)
10. Marketing efficiency (Ratio)	13.88	11.70	12.46	4.18	5.38	4.13	3.35	3.42

Note: Figures within the parentheses indicate percentages of the ultimate buyer's rupee.

The gross market margin was 6.72 per cent and the marketing efficiency was 13.88. It was noted that the prices of goat were fixed through mutual bargaining. Farmer sellers/buyers were often cheated by the clever traders who were able to fix the price in their favour. However, producer's share in ultimate buyer's rupee in the Farmer – Farmer channel appeared to be more than that reported by Kumar (1992). According to him, the producer's share in buyer's rupee in Producer – Consumer channel of goat markets in Bihar ranged from 86.12 to 90.44 per cent, whereas according to the present study, the producer got more than 90 per cent share in the buyer's rupee.

Through Channel II, both Black Bengal and Jamunapari goats were being transacted (Table 3). More than 92 per cent of buyer's rupee was shared by producer-farmer for both the breeds. This figure was more or less equal to that of Channel I, because in both the cases, no third party was involved. However, the gross market margin was higher in this channel (over 7%) that gave the gross marketing efficiency of 11.70 for Black Bengal and 12.46 for Jamunapari goats.

In Channel III, the most dominant channel in the marketing of Black Bengal goat, the butcher purchased the animals from local trader who got them from the producer-farmer. Table 3 shows that on the whole, the producer farmer received a lower share of 80.08 and 84.33 per cent in buyer's rupee for Black Bengal and Jamunapari goats, respectively. It was evident from Channels II and III that producer's share was more in transaction of Jamunapari goat. This was due to the higher market price of Jamunapari goat because of their higher body weight. Also, cost on its marketing was not high proportionately to the higher market price it received.

The gross market margin, which was the difference between effective price paid by butcher and net price received by producer-farmer, was 19.32 per cent for Black Bengal and 15.67 per cent for Jamunapari goats. Due to higher market margin, the marketing efficiency was low, 4.18 for Black Bengal and 5.38 for Jamunapari goats.

Observations through Channel IV could be made only in the Mayapur market and that too for the Jamunapari goats only. It was observed that around 80 per cent of buyer's rupee was received by the producer -farmer and the distant trader earned a net margin of 9.61 per cent. The gross market margin was found as Rs 283.87, which was 19.51 per cent of the ultimate buyers' rupee. Marketing efficiency was found to be lower (4.13) than that in the earlier channels.

The overall share of producer in ultimate buyer's rupee in Channel V was 77.04 and 77.39 per cent for Black Bengal and Jamunapari goats, respectively. The gross market margin in both the cases was observed to be

about 23 per cent. The marketing efficiency in Channel V was found to be the lowest of all the channels, it being 3.35 for Black Bengal and 3.42 for Jamunapari goats.

### **Conclusions and Suggestions**

It has been found in the marketing of male goats in West Bengal that the share of sellers' cost in the total cost of transaction is lower than that of the buyers, except in the case of distant trader seller. This is mainly due to higher market fee for the buyer. High transportation charges have rendered the cost for distant trader-sellers higher than that for buyers. No broker is involved in goat marketing. For farmer-seller, the labour has been found the major item of cost, while for trader-seller, these are the costs on transportation, assembling and maintenance. Cost on preparation also takes a significant share in the total cost of seller. Labour, levy, market fee and transportation cost are the significant cost items for buyer. In general, gross market margin as a percentage in ultimate buyer's rupee has been found increasing from Channel I to Channel V. As a result, the producer's share in ultimate buyer's rupee is decreasing. Marketing efficiency follows the same trend as that of producer's share in buyer's rupee. Hence, it could be concluded that Channel I is the most efficient in marketing of Black Bengal goats. No difference has been observed in Jamunapari goat as far as trend of price spread analysis is concerned. In this case, Channel II has been found most efficient in the absence of Channel I. It has also been observed that producer's share in the ultimate buyer's rupee is higher in the case of Jamunapari goats because of their higher market price and almost same marketing cost as that of Black Bengal goats. The suggestions offered by this study are:

- Construction of village link roads with market would increase the market accessibility of the farmers. Since transportation cost constituted a major component of traders marketing cost, there is a need for developing the quick and cheap mode of transport, particularly for the distant trader seller.
- Due to lack of market information, the farmers choose the less efficient channels to sell / buy their animals. This is also responsible for limited bargaining power of farmer seller/buyer. There is a need of evolving some provisions of announcement regarding market arrivals, market prices, etc.
- There exists a wide difference in market fee structure across different markets. Hence, there is a need to bring rationalization in market fees. Besides, market fee rate should be displayed prominently at the market places.

- Grading of the animals should be introduced based on the performance and other attributes of animals, and the price should be based on those grades. Also, open auction method of sale should be introduced in the markets.
- Since the Black Bengal goat is famous for its excellent meat and skin quality, due care should be given by the administrators and policymakers to preserve the pure genetic stock of this breed in the state. The government may set up some special farms for maintaining the pure breed of Black Bengal goats.
- The animal markets should be regulated similar to foodgrain markets for the smooth and effective marketing of animals.

### References

- Chandra, S., (2002) Anticipating a spurt in international trade, *Hindu Survey of Agriculture*, pp. 151-156.
- Dixit, A.K. and B.D. Shukla, (1995) Efficiency of different marketing channels for goats in Etawah district of Uttar Pradesh, *Indian Journal of Agricultural Economics*, **50**(3): 331.
- Kumar, S. and S. Singh, (1999) Marketing of goat and goat meat in tribal area of Chotanagpur Plateau, India, *The Bihar Journal of Agricultural Marketing*, **VII**(4): 433-439.
- Shepherd, G.S., (1965) *Marketing Farm products – Economic Analysis*, Ames, Iowa, USA: Iowa State University Press. 254p.
- Shukla, B.D., R.S. Dixit and A.K. Dixit, (1996) Factors influencing the sale price of goats: An economic analysis, *Indian Journal of Agricultural Marketing*, **10**(2): 106-107.
- Singh, R.S. and T. Hussain, (1996) Marketing of goat in Rajouri district of Jammu and Kashmir, *Indian Journal of Agricultural Marketing*, **10**(2):107.
- Govt. of West Bengal, (2001) *Statistical Abstract 2001-02*. Bureau of Applied Economics and Statistics, Govt. of West Bengal.

### Appendix I

#### Market fee per male goat in different markets

(in Rs/goat)

Market	Seller		Buyer	
	Occasional	Regular	Occasional	Regular
Birohi	2	2	2%	2%
Birnagar	2	1	2	2
Mayapur	2	1	1%	2.50
Pandua	-	-	5	2

*Note:* Market fee in percentage indicates percentage of sale price of the animal.