

Milk Marketing Channels in Bangladesh: A Case Study of Three Villages from Three Districts

Ashoke Kumar Ghosh

Graduate Student, Graduate School for International Development and Cooperation
Hiroshima University, 1-5-1 Kagamiyama, Higashi-Hiroshima 739-8529, Japan

E-mail: ashoke1971@yahoo.com

Keshav Lall Maharjan

Associate Professor, Graduate School for International Development and Cooperation
Hiroshima University, 1-5-1 Kagamiyama, Higashi-Hiroshima 739-8529, Japan

E-mail: mkeshav@hiroshima-u.ac.jp

Abstract

This study has been undertaken to understand a general features of milk marketing in Bangladesh and explore some of the issues on milk production among dairy households and their conditions under various milk marketing channels. This study highlights share of milk marketed in urban and rural region, quality of milk and price variations under different stages of marketing and selling spots. This study also identifies problem faced by farmers in milk marketing and their probable solutions.

1. Introduction

Dairy farmers in Bangladesh are raising their indigenous cows; small in size and low in milk yielding, in a very traditional way giving almost no attention regarding their fodder, medication and genetic improvement. Although there is a general trend to raise cows in Bangladesh, the rural people have not yet undertaken dairy on a commercial scale. Small farmers who rear only a small number of cows in rural area produce most of the milk. They are interested in getting the highest possible return for their milk. On the other hand, consumers want the best milk for their price. Middlemen are performing various intermediary marketing functions such as transportation and retailing of the milk and link the dairy farmers (producers) and the consumers. The main interest of the marketing intermediaries is to gain the highest profit possible from their particular business operation (FAO, 2002).

However, the milk marketing and processing systems in Bangladesh are not yet developed. Milk being perishable item, needing timely and special attention to market, makes the marketing more difficult (FAO, 1990). Generally, rural milk producers sell their surplus milk to various marketing intermediaries prevailing locally who in turn sell the milk to the individual consumers, restaurants & tea stalls in the urban area. In this process marketing intermediaries buy the milk from the farmers at a cheap price and are said to appropriate large profit. Lack of effective marketing organization in the grass-root level is a drawback for the farmers' position in selling milk. Earning money and improving production will be

vulnerable if they are unorganized. Under these circumstances the farmers are unable to improve their socio-economic conditions. Cooperative marketing system could play a vital role in providing a channel that can link the farmers to the urban markets/consumers smoothly and ensure higher price for their products. The concept of dairy development through smooth marketing arrangement under cooperative umbrella is well established in India and elsewhere as well¹. This is also confirmed for Bangladesh by studies made earlier.

Ashrafuzzamn (1995), studying economic efficiency of milk production under cooperative system in Sirajganj district, Bangladesh, found farmers are enjoying a ensured milk market for selling their milk under cooperative marketing channel. Rahaman and Mian (1996), by studying cooperative also in Sirajganj district and traditional milk marketing channels in three different markets (Dhaka, Mymensingh and Rangpur) in Bangladesh, found that the cooperative milk marketing channel can provide best profit for primary producers. Khan and Suraiya (1996), studied a traditional village in Jessore district, where bulk of the milk was sold by traditional middlemen and found middlemen are depriving the primary milk producers from their milk profit and suggest for milk producers organization, such as milk cooperative for small dairy farmers, to reduce the transportation costs and better their earnings. Roy (2000), conducting a research on milk marketing under cooperative management again in Sirajganj, has shown that cooperative dairy farmers are receiving better price compared to non-cooperative farmers.

However, these studies, highlighting the higher price or profit earnings obtained by the cooperative farmers, do not give a concrete picture on prices at different stages of marketing channel and the changing of prices through the marketing process. None of them discuss the quality of milk and its changes at various stages during the process of marketing. Nor do these studies directly discuss the share of milk marketed in rural and urban regions. Further, no studies have been done so far on Pala (local semi organized) system of marketing specific to Char (coastal low land) area. Thus, the existing studies have not been able to apprehend the whole picture of milk marketing channels in Bangladesh.

Hence, present study is an endeavor to grasp all types of marketing channels existing in Bangladesh and compare them to find the best one for dairy farmers. It is important to study the issue at the micro level and grasp the share of milk marketed in rural and urban regions, changing quality and prices of milk and the services performed at various stages in the process of milk marketing. It is also necessary to discuss the role of various intermediaries involved in traditional milk marketing channels and see how they are transformed in cooperative marketing system, in turn smoothing the marketing arrangement that benefits both producers and consumers. Thus the specific objectives of the study are, 1) to know the dairy farm size, milk production, milk disposing method of dairy farmers and the role of intermediaries in milk marketing, 2) to analyze the milk quality and the milk prices among dairy farmers, marketing intermediaries and consumers under different marketing channels, 3) to know the problems faced by the farmers under different marketing channels, and 4) to consider the marketing channel that overall benefits the dairy farmers the most and discuss its feasibility.

Field study was conducted in order to fulfill these objectives for positive analysis. Rest of the paper is organized to discuss the general milk marketing channels, methodology of field study and the marketing channels existing in different research areas. This is followed by the discussion on these findings of the study and conclusion.

2. Milk Marketing Channel

The milk marketing channels in Bangladesh are not organized. Sometimes, dairy farmers sell their milk directly to the local market, neighbors, tea stalls and local restaurants. Most of the times they sell their milk through different types of middlemen like Gowala, Aratdar and retailer. These intermediaries operating at different level of milk marketing earn margins that affect primary milk producers directly or indirectly. The proportions of milk selling by the farmers through different channels differ from place to place. The typical milk marketing channels are described below.

2.1 Traditional Milk Marketing Channel

Petty milk marketing practice is very common in Bangladesh and milk marketing channels are not regular and organized. Producers may sell their milk directly to local market, neighbors and tea stalls. But most of the times, they sell their surplus milk to the Gowala. In the traditional milk marketing channel, Gowalas collect milk from the producers, sometimes mix water or milk powder for more profit, and sell this in the urban market. In the rural area Gowala perform the door-to-door milk collection from milk producers and deliver the milk to consumers (Rahma et al. 2002). Some of the Gowalas are milk producers themselves, selling rurally collected milk in addition to their own produce. They sell this milk to different types of consumers in urban area, such as, individual consumers at market, contact households, tea stalls and hotels or restaurants. Price is always uncertain both for primary producers as well as for Gowala in this type of marketing channel. At times, there are few other middlemen such as Aratdar and retailers in this marketing channel. Aratdar is a commission agent and mediates between producers and Gowalas/ retailers, consumers as well as hotels and restaurants. Aratdars charge a fixed amount of commission form of monetary value or milk from producers. Retailer includes the milk trader who buys milk from the Aratdar, Gowala or group or individual producers in the market and supplies this milk to the city consumers, hotels and restaurants.

The middlemen are performing a role of marketing the rural milk to urban places, but the price of milk is not fixed and the middlemen do not pay farmers regularly. Price varies from place-to-place and from season-to-season. Gowala also cannot ensure the fresh milk for the consumers as they start collecting milk from the rural area early in the morning and sell this to the urban area until the evening without any preservative measures. Mixing water and milk powder in the fresh milk is very common practices among the Gowalas in this marketing channel.

2.2 Pala Milk Marketing Channel

Pala is an informal group made by the villagers having milk cows in the Char area, difficult to be reached by normal transportation means. The small dairy farmers in the area producing 1-5 liters of milk which cannot be profitable for individual farmer to sell in city with high transportation cost, make informal marketing group (Pala) with 20-50 members to sell the milk jointly. All the Pala members participate rotationally, each for one day, marketing their milk. The Pala representative brings the group's milk to the market and sells to retailer through Aratdar. Aratdar is paid certain amount of milk/cash by Pala representative as commission for mediating the job. Retailer finally sells this milk to the urban consumers, restaurants and tea stalls at a higher price and earn his own margins. The Pala system seems to be efficient in collective marketing of the milk by dairy farmers in the Char area. However, the Pala farmers again depend on middlemen for marketing their milk. The mechanism of milk marketing beyond this stage is same as traditional milk marketing system prone with unstable price and quality.

2.3 Cooperative Milk Marketing Channel

To reverse the situation of primary milk producers in milk market and the quality of milk, the cooperatives were made as to, 1) raise the subsidiary agricultural income for poor landless and marginal dairy farmers by introducing them in organized milk marketing channels. 2) development of infrastructure for milk collection at fixed and fair prices through organized village milk producers cooperative and relieve them from exploitation by the middlemen, and 3) to ensure the supply of pure and hygienic milk and milk products to the consumers.

Keeping all these objectives, Bangladesh Government took initiatives to organize poor dairy farmers under a cooperative umbrella known as Bangladesh Milk Producers' Cooperative Union Ltd. (BMPCUL), in which the Government gave credit to establish the dairy infrastructures such as, milk processing centers, and veterinary services, transportation and a stable market price. BMPCUL started its function with the aims of establishing a dairy base in Bangladesh as well as rural development by providing inputs to the farmers at low cost and ensuring fair price of the milk to the small rural milk producers. Presently the BMPCUL has been running seven dairy plants for processing and/or pasteurizing at Dhaka, Baghabarighat, Tangail, Manikganj, Tekerhat, Sreenagar and Rangpur regions. In 1973, soon after the liberation, the government of Bangladesh undertook a development scheme titled Cooperative Dairy Complex based on the recommendations from United Nations Development Program, Danish Agency for Development Assistance (DANIDA) and Food and Agriculture Organization of the United Nations. Around this plant area, there were about 335 primary milk producers' cooperatives with membership of over 28 thousand farmers. They supplied milk at a daily average of 6 million liters, by which the BMPCUL produces butter, cheese, ice cream, milk powder, pasteurized milk, etc., and marketed these products under the brand name of Milk Vita (Hanif, 1996).

Before the cooperative was formed, farmers had to depend on middlemen to market their milk and as a result they were exploited in various ways. Not only were they paid low price but also cheated in weighing. To improve the situations, the BMPCUL has been helping the rural milk producers in organizing their own village Primary Milk Producers Cooperative so that they can help themselves and become responsible for marketing their own milk. They no longer have to depend upon middlemen and a relatively unstable market. A village milk producer cooperative consists of one to three villages covering an area of approximately 1-2 sq. km., having a marketing surplus of 180-200 liters of milk per day. To establish a cooperative first the group of dairy farmers needs to inform the BMPCUL regional authority of their intentions. Generally, the authority considers the first year as the observation period. At that time the authority verifies the milk production capacity of this group. If the group can fulfill the required amount of milk production then it will be formally registered as a cooperative under BMPCUL system. (Haque, 1998, Ghosh & Maharjan, 2001).

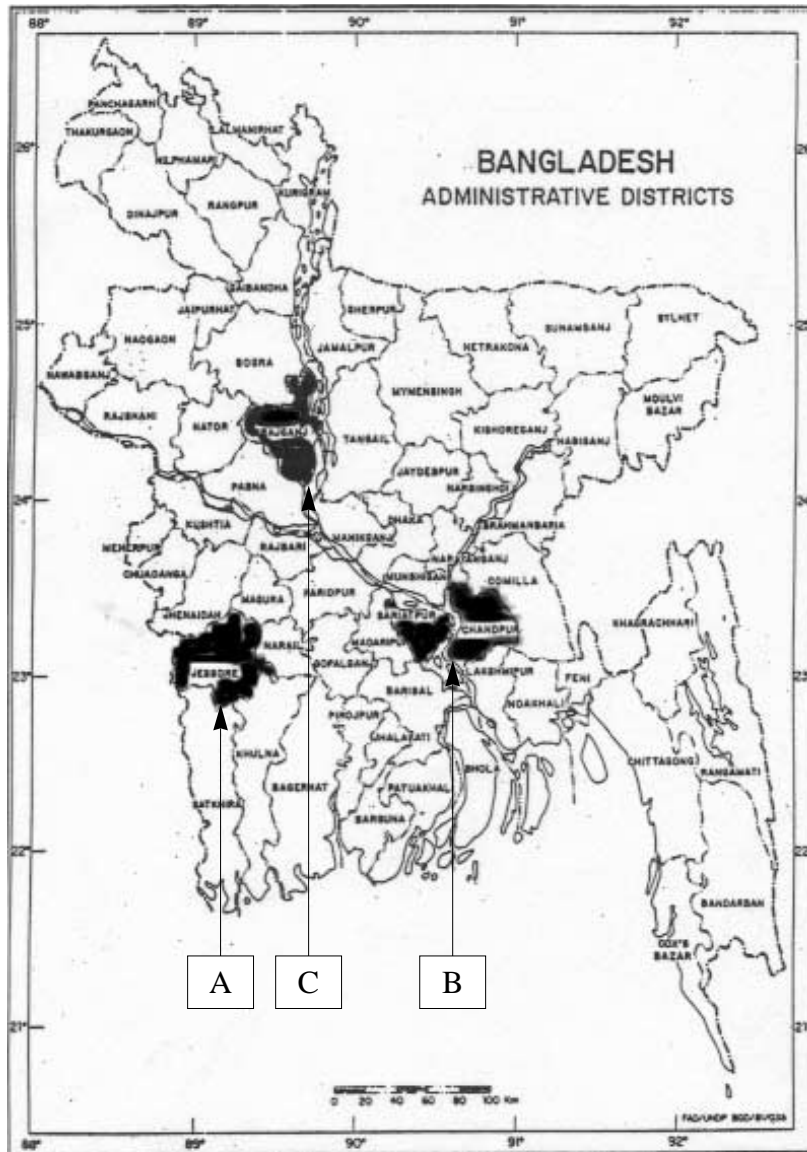
3. Field Study

Considering different types of marketing system in different places, field study was conducted in three different districts to understand the different milk marketing channels in detail study areas are, A= Jessore, B= Shariatpur and Chandpur and C= Sirajganj. (in **Fig-1**)

In the first phase of the fieldwork, a number of districts were visited to collect preliminary information about milk production and milk marketing system. Among these districts, three districts e.g., Jessor, Shariatpur, and Sirajganj were taken purposively considering the various prevailing marketing

functionaries and the nature of the milk marketing. Another district named, Chandpur was selected only to study the milk marketing channel, as the farmers from Shariatpur were marketing their milk under the Pala system in the urban of this neighboring district.

Jessore district, Southwest from Dhaka, was chosen as to study the traditional milk marketing channels that are widely practiced in Bangladesh. Depending on the primary information collected directly from



Source: "Land Resource" United Nation Development Programme. FAO, 1988

Fig-1. Location of Study Areas

producers as well as from related functionaries in milk marketing, Jessore milk market was selected for this study. A fairly large number of Gowala (about 45), from neighboring area (the distance of which varies from 5 to 10 km. from town), collect milk from different households in the villages and sell their milk to the consumers in Jessore milk market. This is the most widely practiced marketing channel in Bangladesh. Out of them 15 Gowala were taken for sample study. Information regarding the dairy farmers and the villages from where they collect milk was collected from them. On the basis of this information a village named Labutalla was taken purposively for detail study. This village was taken for the study considering the number of dairy households, number of Gowala and their milk production. Labutalla village, 12 km far from the main city of Jessore produces reasonable quantity of fresh milk. There were 140 dairy households in the village engaged in selling their surplus milk. Out of them, 50% (70) households were sampled randomly for intensive interview.

Shariatpur district a typical Char land about 100 km South from Dhaka was chosen to study Pala marketing system. Tarabunia village, under the Shakipur Thana where Pala milk marketing is widely practiced, was taken for the study because the villagers practicing Pala milk marketing system, sell fair amount of milk. This choice was made after interviewing some villagers and collecting the primary information to find a representative village where Pala system is in practice. From this representative village, one Pala was taken for detail study on their informal milk marketing organization and their performance. In doing so, 15 members (40%) were sampled randomly from the Pala. It is noted that the people from Shariatpur, especially Shakipur Thana were selling their milk to neighboring district Chandpur instead of Shariatpur. For that reason Chandpur milk market was studied. There were two Aratdars in Chandpur city market. They were mediating in milk selling between producers/Pala and buyers. Both the Aratdars were interviewed. There were 7 retailers buying milk through these Aratdars and 5 of them were also interviewed in this study.

Sirajganj district, Northwest from Dhaka, where the first dairy cooperative was established was chosen for this study. Baghabarighat milk-shed area in Sirajganj district is under the BMPCUL cooperative system and consists of 163 primary village cooperatives. The milk-shed area is divided into nine Thanas (administrative units). The Thana, named Sahajadpur was selected for the study. All the village level dairy cooperatives follow the same rules and regulations and share same marketing facilities. Considering this a cooperative in Potajia village having all the characteristics of the region within the village was taken for this study. There were 216 dairy farmers in this cooperative. Out of them 30 per cent were sampled randomly for interview survey. There were very few (3) Gowlalas in the village. Dairy farmers sometimes sell their milk to open market or neighboring people. For this study purpose, all shopkeepers/ retailers were interviewed to grasp their milk marketing and selling price to the consumers. The market information specially the prices pattern of the milk was collected from BMPCUL office.

All primary information used in this analysis is collected in a participatory way, making door-to-door visits, interviews, and observation. Precaution has been taken to maintain objectivity and to keep the study free from various biases and utmost care was given to maintain the private secrecy. But the limitations, of relying on verbal interviews of the farmers who are not only illiterate but also have never had such experience of giving interviews, talking logically for fairly long time was unavoidable. However these limitations were checked cautiously with review work, participatory observation and re-inter-

views. Secondary information was collected from the official records; printed reports, brochures, and pamphlets, as per need for the analysis.

4. Results of Field Study

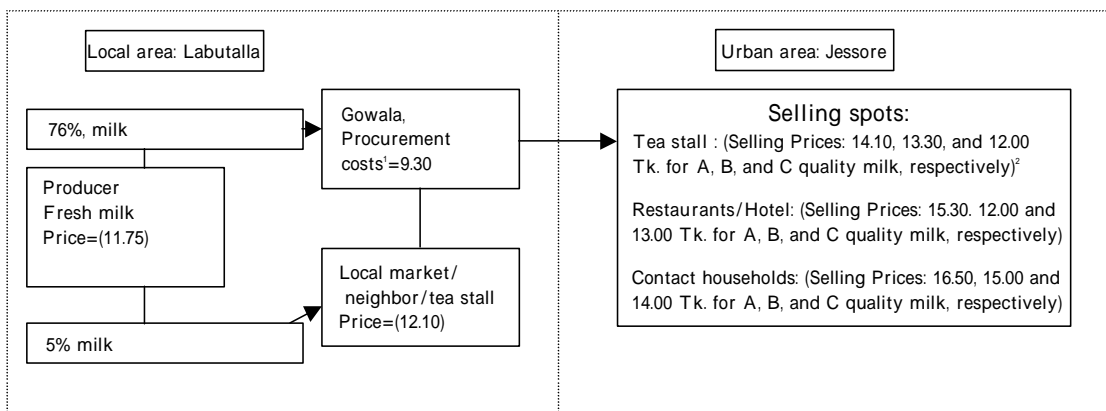
The milk producers generally sell surplus milk after retaining the quantity required for self-consumption. Milk collection and marketing varies from area-to-area and season-to-season. An analytical descriptions of milk-marketing channels identified in three different areas are given below.

4.1 Traditional Milk Marketing Channel in Jessore

This type of marketing practice is very common in Bangladesh. In case of traditional system, milk marketing channels are not regular, and organized, as shown in **Fig-2**. Producers sell some of (5%) their milk directly to the local market, neighbors and tea stalls. In most of the cases (76%), producers sell their surplus milk to the Gowala. Gowalas collect milk from primary producers and brings this to urban market. They sell this milk to different types of consumers such as, individual consumers at market, contact households, tea stalls and hotels or restaurants. They sell different categories of milk in different proportion in different prices. It is observed that Gowalas and retailers are earning handsome amount of profit by their mediation. The different types of middlemen earn a major share of profit from unorganized milk marketing system, which could have been earned by poor rural farmers if they could do collective marketing. The milk qualities of Gowala was also not good. They mixed water and milk powder with fresh milk and sold this to market for more profit.

4.2. Pala Milk Marketing Channel in Shariatpur-Chandpur

The Char area of Shariatpur district is the lands claimed in the lower delta of river Jomuna and Meghna. The villagers started settling there since 1960. The people in these areas have access to near-



Source: Field survey, 2000

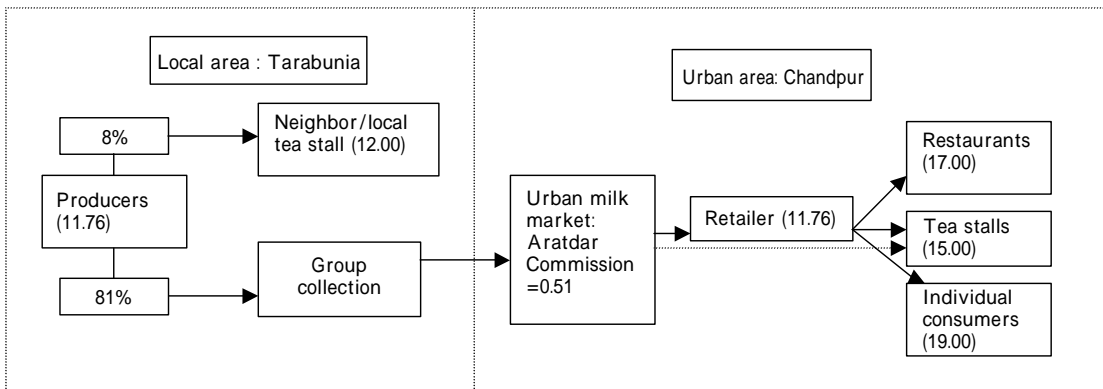
Note: 1. Gowala generally buy fresh milk from different households, after that they mix it with water and milk powder to earn more profit. By mixing water, the quantity of milk is increased and the procurement cost is reduced to Taka 9.30 per liter. All the price is in Taka per liter.

2. Fresh milk is A, Milk with water is B, and Milk with water and Milk powder is C. Figures in (), is milk price at each stage of marketing channel.

Fig-2. Traditional Milk Marketing Channel In Jessore

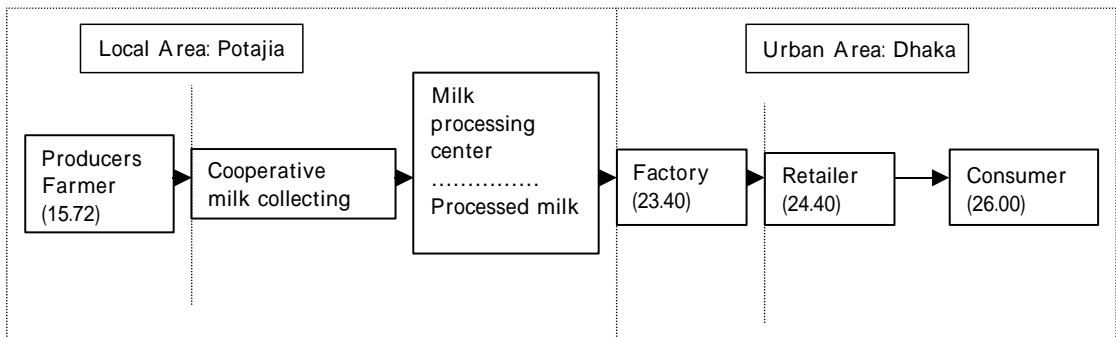
by town only through boat. This may be the very reason the dairy farmers Pala for marketing their milk produced in small quantities. **Fig-3** shows that the producers are collecting jointly their milk at the local level. However, sometimes primary milk producers also sell very small quantity of milk to neighbors, consumers at local market or tea stalls. Most of the milk that is collected jointly is sent to the urban markets in Chandpur. In that case, group selects one representative among themselves to bring their milk to the market. The representative is selected rotationally everyday. There are few Aratdars in city market whose function is to mediate the retailer and representative from Pala in selling their milk. Retailer sells this milk after processing to hotel/restaurants, tea stalls, and city dwellers. Often the hotel/restaurants, tea stalls and city dwellers buy milk directly from the Pala representatives in a hope to get better quality at relatively cheaper price.

The main difference from traditional marketing system is that in Pala, the producers collect the milk and sell by themselves, with the intervention of Aratdar by giving certain amount of commission for this service and reduce the transportation cost. Pala representative plays the role of Gowala in this marketing channel.



Source: Field survey, 2000
 Note: Figures in () is milk price at each stage of marketing channel. The Pala pays commission to the Aratdar and the net price for produce, became $(11.76 - 0.51) = 11.25$ per liter of milk.

Fig-3. Pala Milk Marketing Channel in Shariatpur-Chandpur



Source: Field visit, 2000
 Note: Price of milk is given in brackets at each stage in Taka. Factory sells milk to distributor at price 23.40 per liter

Fig-4. Cooperative Milk Marketing Channel

4.3. Cooperative Milk Marketing in Bangladesh

Fig-4 shows that individual producer farmers are collecting their milk jointly in the cooperative milk collection center at the village. Thus, collected milk is sent to the nearby local processing center. Processing center chills & pasteurizes this milk. Later the milk goes to the milk factory Dhaka where the milk is processed into cheese, ice cream, butter and homogenized fresh milk into small plastic bags. These milk and milk products are sold to the consumers in the market through the distributors, shop-keeper/retailer from on the milk sales depot at a fixed price. There are no other intermediaries involved in the marketing channel and the milk price is also fixed for the primary producers according to their fat content.

Among all these marketing channels, cooperative marketing channel is smooth one. The cooperative members bring their milk to the village milk collection center every morning and the evening. The cooperative employee collects all the milk from their members and sends it collectively to the processing center and then to Dhaka milk factory. Factory authority processes this milk and produces various milk products and sells them to the retailers or consumers with better quality and fixed price. Prices at all the levels are fixed under this cooperative system. The milk money is paid to the farmers regularly through village cooperative every week.

The traditional milk marketing channel in Jessore is dominated by Gowala. But both the dairy farmers and Gowalas suffer from irregular payment made by urban consumers, tea stalls, hotels and contact households. Low price of milk and price fluctuations hit hard the farmers the most and reduce the profitability of dairy farming. The quality of milk is also not good standard because Gowalas start collecting milk in the morning from the village and sell this to town, until the evening without any chilling /measures. However, few Gowala farmers are satisfied with this system because it is their tradition and way of life and require no extra investment. Pala in Shariatpur collect milk collectively in village level and send this to market everyday by one representative rotationally and save the transportation costs of the farmers. However, again they depend on the middlemen for selling their milk. Consequently the farmers are deprived from the higher market price for their milk.

5. Discussion

In the rural areas of Bangladesh, land and cows are the symbol of power, social dignity and economic status in the society. **Table-1** shows distribution of land and cow holding and their milk production in the study areas. It reveals that in Labutalla, Potajia and Tarabunia villages, 20%, 22% and about 70% of the households respectively are functionally landless with landholding up to 0.49 acres. Majority of the households in Labutalla and Potajia (56% and 44 %) are small farmers with landholding of 0.50-2.49 acres and for Tarabunia only 19 % household that falls in the same category. The middle farmers with landholding of 2.50-7.49 acres constitute 23% for both Labutalla, and Potajia, and for Tarabunia it is 10% only. A very small percentage (1%) is large farmers in Labutalla and Tarabunia, with landholding 7.50 acres and above. However, the large farmers are 11% in Potajia. In case of cow holdings, it reveals that most of the dairy farmers possess small numbers of dairy cows. The average milk cow holding in Potajia (under cooperative) is higher (3.9) compared with Labutalla (1.9) and Tarabunia (2.8). The same table also shows the average milk production per cow is less for Labutalla (2.3, liter) and Tarabunia (2.5 liter) compared to Potajia (3.8 liter). A general trend is also observed that, the average number of cows per farm increase with the increase of land holding size.

Table-1: Land and cow holdings per household and average milk production in the different farm categories of study areas

Farm category in Study villages	Total No. of Households	Percentage of Households	Cow heads per Households	Milk production Per Cow/liter
Labutalla (Traditional)	70	100	1.9	2.3
Landless	14	20.0	1.6	1.9
Small	39	55.7	1.7	2.5
Medium	16	22.9	2.3	2.8
Large	1	1.4	2.1	2.0
Tarabuna (Pala)	15	100	2.8	2.5
Landless	11	69.8	1.7	2.5
Small	2	19.1	2.5	2.3
Medium	1	10.0	3.1	2.0
Large	1	1.1	4.2	3.3
Potajia (Cooperative)	60	100	3.9	3.8
Landless	14	22.0	1.8	3.8
Small	26	44.5	3.1	3.4
Medium	13	22.7	3.9	3.8
Large	7	11.2	7.1	4.1

Source: Field survey, 2000

Note: (1) Landless is with 0.0 - 0.49 acres of land, small is with 0.50 - 2.49, medium is with 2.50 - 7.49 and large is with 7.50 and above acres of land

Table-2: Ways of milk selling and the price received by farmers

Villages	Total milk Production (liter)	Consumption (liter)	Gowala		Local market		Cooperative		Pala		Average Price/liter
			Liter	Price	Liter	Price	Liter	Price	Liter	Price	
Labutalla	291 (100)	56 (19.24)	221 (75.94)	11.75	14 (4.8)	12.10	*	*	*	*	11.93
Tarabunia	106 (100)	12 (11.32)	*	*	8 (7.55)	12.00	*	*	86 (81.13)	11.25	11.63
Potajia	886 (100)	94 (10.60)	45 (5.07)	17.00	15 (1.7)	16.00	732 (82.61)	15.72	*	*	16.24

Source: Field survey, 2000

Note: 1. "*" indicates not applicable. Figure in () are percentage.

2. All prices are in local currency Taka; 1 US Dollars =58 Taka.

Table-2 shows the nature of milk disposal and the prices in different markets. Data reveal that all dairy farmers are consuming certain amount of milk ranging from 11 to 20 per cent of their own produced milk. In cooperative village Potajia, dairy farmers sell 83 % of milk through cooperative marketing channel. On the other hand, the farmers from Tarabunia sell their major portion (81%) of milk through Pala. The farmers from Labutalla, depend upon Gowala for selling their milk. The farmers from Potajia also sell small quantity of milk to the Gowala and receive Tk.17.00 per liter, nearly 10 % more than the cooperative price. Very small quantity of milk is also sold at local market in all three villages generally at a relatively higher price.

Data also reveal that farmers in Labutalla and Tarabunia, selling milk in local markets receive almost the same price 12.00 Taka per liter. However, the local market and Gowala's price is Taka 16.00 and Taka 17.00, per litre in Potajia. The same table also shows that farmers from Labutalla receive Taka 11.75 per liter from Gowala and the farmers from Tarabunia and Potajia receive Taka 11.25 and Taka 15.72 per liter from Pala and cooperative, respectively. The average milk price was higher for Potajia (Taka, 16.24) compared to non-cooperative Labutalla (Taka, 11.93) and Tarabunia (Taka 11.63).

Table-3: Seasonal price fluctuation of milk in study area

Milk marketing channel	Local level price fluctuations (Taka)		Urban level price fluctuations (Taka)	
	Nov. Dec. Jan	April, May, June	Nov. Dec. Jan.	April, May, June
Labutalla-Jessore	15	10	17	10
Tarabunia-Chandpur	14	10	22	13

Source: Field survey, 2000

Note: 1. The price fluctuations in Labutalla and Tarabunia is due to the seasonal nature of the markets.

Table-4: Prices list for the cooperative farmers

Fat content (%)	Price of milk in taka		Fat content (%)	Price of milk in taka	
	Good milk	Sour milk		Good milk	Sour milk
0	0	0	4.5	15.10	7.55
3	9.96	4.98	4.6	15.41	7.71
3.1	10.26	5.13	4.7	15.72	7.86
3.2	10.55	5.28	4.8	16.03	8.02
3.3	10.85	5.43	4.9	16.34	8.17
3.4	11.15	5.58	5.0	16.65	8.33
3.5	11.99	6.00	5.1	16.96	8.48
3.6	12.30	6.15	5.2	17.27	8.63
3.7	12.61	6.31	5.3	17.59	8.80
3.8	12.92	6.46	5.4	17.90	8.95
3.9	13.23	6.62	5.5	18.21	9.11
4	13.54	6.77	5.6	18.52	9.26
4.1	13.85	6.93	5.7	18.83	9.42
4.2	14.16	7.08	5.8	19.14	9.57
4.3	14.47	7.24	5.9	19.45	9.73
4.4	14.79	7.40	6.0	19.76	9.88

Source: Field survey, 2000

Note: The price of sour milk is not significant here because milk become sour only about two or three times in a year

Table-3 shows the seasonal price fluctuation in local and urban markets. Data reveal low price in local level with reasonable fluctuation for both Labutalla (Taka, 15-10) and Tarabunia (Taka 14-10). In urban level the milk price fluctuates more for Chandpur (Taka 22 to 13) and (Taka 17 to 10) Jessore markets. The price is higher in November, December and January and lowest in April, May and June.

Table-4 shows the cooperative milk prices for the farmers. The farmers' price is always fixed according to milk quality. The lowest price per liter for good milk is Taka 9.96 when the fat content is 3 per cent. However, the highest price of good milk is Taka 19.76 when the fat content is 6 percent. On the other hand, the lowest price of sour milk is TK 4.98 with 3% of fat content and highest price is TK 9.88, when fat content is 6.0%.

Table-5 shows the quality of milk sold varied according to different selling spots. Data reveal Gowala sold the procured milk in different ways at different places and were paid different prices. They were paid highest price (Tk.16.50, 15.00, and 14.00) by contact households for their fresh milk, milk mixed with water, and milk mixed with powder milk and water, respectively. They received Tk. 15.30, 12.00 and 13.30 from the restaurants for respective qualities of the milk. Gowlas were paid lowest prices by tea stalls (Tk. 14.10, 13.30 and 12.00), for respective types of milk. Among all types of buy-

Table-5: Quality and price of Gowalas milk at different selling spots

Types of Milk	Total milk (Liter)	Cost of milk Taka/Liter	Selling spots					
			Restaurant		Tea stall		Contact houses	
			Liter	Price	Liter	Price	Liter	Price
Fresh milk	23	11.75	14	15.30	2	14.10	7	16.50
Milk with water	25	7.05	5	12.00	14	13.30	6	15.00
Milk powder, water and milk mixed	10	9.10	2	13.00	6	12.00	2	14.00
Total milk	58		21		22		15	

Source: Field survey, 2000

Notes: Milk with water is generally 45% water mix with the fresh milk.

Water, milk and milk powder: Gowala mixed fresh milk with water and milk powder.

Table-6: Cost and profit for Gowala from different types of milk

Types of Milk	Total milk Liter	Cost of milk Taka/liter	Other costs Taka/liter	Total cost Taka/litter	Selling price/litre	Net profit /liter	Net profit per day
Fresh milk	23	11.75	1.40	13.15	15.56	2.41	55.43
Milk with water	25	7.05	1.40	8.45	13.44	4.99	124.75
Milk powder, water and milk mixed	10	9.10	1.40	10.50	12.60	2.10	21.00
Total	58						201.18

Source: Field survey, 2000

Notes: Other costs includes transportation cost, labor cost and materials cost.

Table-7: Physical facilities in different milk markets

Market infrastructures	Jessore	Sirajganj	Chandpur
Milk quality checking instrument	0	*	0
Shade for milk selling	0	*	*
Freezing facilities	0	*	0
Water supply & drainage	0	*	*

Source: Field survey, 2000

Note: 0 = Absence, * = Presence

ers, restaurants and tea stalls buy almost similar amount 21 and 22 liters of milk, respectively and contact households, 15 litters per day. Further, restaurants and contact households were buying more fresh milk (14 and 7 liters, respectively), compared to tea stall (2 liters). However, for mixed milk, tea stalls were buying more 20 liters compared to contact households (8 liters) and restaurant (7 litters) per day.

Table-6 shows the profit earned by Gowala from different types of milk. Data reveal that cost of milk procurement was higher for fresh milk, Taka 11.75 per liter. The nearely same cost for milk mixed with water and milk powder was Taka 9.10 and that for water mixed milk was 7.05 Taka. The total average cost for transportation, labor and others was same Taka 1.40 per liter for all types of milk.

The average selling price was, for fresh milk Taka, 15.56 and Taka 13.44 and 12.60 for milk mixed with water and the milk mixed with milk powder, milk and water, respectively. The profit per liter was higher for milk with water (Taka 4.99), compared to fresh milk (Taka 2.41) and milk with water and milk powder (Taka 2.10), respectively. The highest earning per day was Taka 124.75 from milk with water, followed by fresh milk, Taka 55.43 and milk with water and powder milk Taka 21.00. The average daily net earnings for Gowala, is Taka 201.18.

Table-8: Problem faced by dairy farmers and their opinion about present marketing system.

Milk Producers	Nature of the problems			Market satisfaction
	Low price of milk	Price fluctuation	Irregular payment	
Labutalla (Traditional)	67.14	15.71	12.86	4.29
Tarabunia (Pala)	53.33	26.67	13.33	6.67
Potajia (Cooperative)	21.67	*	*	78.33

Source: Field survey, 2000

Note. Cooperative price is always fixed. “*”, means not applicable.

Table-7 shows the availability of physical facilities in market area at different places. It is revealed that the physical facilities, such as quality testing equipment, milk selling shade, freezing facilities and water supply were all not available in Jessore market. In Chadpur market only milk selling shade and water supply facilities were available. Sirajganj market is under cooperative system and had having all the facilities of, quality testing equipments, and milk selling shade, freezing facilities as well as water supply and drainage system.

Table-8 shows main problems faced by dairy farmers in different marketing systems. Majority of the farmers (67%) from Labutalla followed by farmers from Tarabunia (53%) thought low price of milk was the main obstacle in milk marketing. However, only 22% of Potajia farmers were thinking low price of milk as a problem. Regarding the price fluctuation of milk, 16% farmers from Labutalla and 26% of farmer from Tarabunia mentioned this as a problem. Almost same percentage of dairy farmers (13%), both from Labutalla and Tarabunia mentioned irregular payment of milk price was the problem. A large percentage (78%) of cooperative farmers were satisfied with cooperative milk marketing system. However, very few farmers, 4% and 7% from Labutalla and Tarabunia, respectively were satisfied with existing marketing system.

6. Conclusion

It is observed that most of the dairy farmers were small in size, their milk production low and they market the surplus milk after consumption. However, the cooperative farmers had more cows and were producing more milk per cow compared to non-cooperative farmers. Farmers were following dominant marketing channels for selling major portion of their milk according to the locations. Price fluctuation in marketing is one of the important constraints for the small dairy farmer. The seasonal price fluctuation was higher for both the villages of Labutalla and Tarabunia at local as well as at urban markets. However, the cooperative price was fixed and it varied according to the fat content of the milk. The average price of milk received by the dairy farmers was higher for the Potajia, with cooperative marketing system compared to other places. It means marketing channels of cooperative are more efficient than the other channels. The higher and fixed price of milk would help farmers to better dairy farm planning.

The milk price is not fixed under the traditional marketing system and milk producers frequently suffer from low price, seasonal price fluctuation and irregular payments. Middlemen on the other hand, appropriate larger margins from milk market often mixing fresh milk with water and powder milk. The milk quality supplied to urban markets through middlemen was not of good standard and price of milk varied according to different types of consumers even at the same market. Generally, the infrastructures

for milk marketing are not available in the markets. Lack of infrastructure also damages the quality of milk. But the cooperative provides all modern marketing facilities to their members for marketing their milk. The milk supplied under cooperative system is hygienic and guaranteed with price and quality.

Therefore further development of dairy farming depends upon the organized marketing channel in which farmer can get fair price. Collective marketing like cooperative system can also reduce the transportation cost. Majority of the dairy farmers are satisfied with cooperative marketing system. So, keeping in mind for mass of the small producer, cooperative milk marketing system can be developed for betterment of the rural dairy farmers.

End Notes

¹ FAO (1990), discussed about the cooperative dairy farming in India and few other countries. The study focuses upon the Kaira district cooperative union and the Gujrat cooperative milk marketing federation in India and their chronological progress regarding the organization of cooperative society, cooperative members and the collection of milk. The Operating Flood, a well-known dairy development through cooperative was also discussed. It was found that a strong milk-marketing network linking the rural farmers with urban consumers directly through farmer-owned cooperative organizations enabled the milk producers to get around 60–65 percent of consumer's price. These cooperatives have functioned as instrument of change, accelerating the pace of economic development of the country. In discussing Portuguese smallholder dairy farming, it was found that the dairy farmers could economize their cost if they collectively market their products (Finan et al, 1990). Hanyani et al (1998) also found that the smallholder dairy farmers in Zimbabwe could earn better income from dairy farming by being organized.

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