

Published with Open Access at Journal BiNET Vol. 05, Issue 01: 01-09

Journal of Bioscience and Agriculture Research

Home page: www.journalbinet.com/jbar-journal.html



Marketing system of maize in Gaibandha district of Bangladesh

A. K. M. G. Kausara, M. J. Alamb and M. A. Awalc

- ^aDept. of Agribusiness Management, EXIM Bank Agricultural University Bangladesh, Chapai Nawabganj
- ^bDept. of Agribusiness and Marketing, Bangladesh Agricultural University, Mymensingh
- ^cPlanning and Evaluation Division, Bangladesh Agricultural Research Council, Farmgate, Dhaka

ABSTRACT

The present study examined the marketing system of maize in Gaibandha district of Bangladesh. In the study area, farmer, Faria,¹ wholesaler, Aratdar² and feed mill were the market participants. Marketing of maize started from farmers and reached to the feed mills through different channels. Farmers did not take part in processing activities. Van³, Votvoti⁴, pick-up, truck and by-cycle were the common modes of transportation. Market information was collected through mobile phone, personal visit to the market, discussion with fellow farmers and traders. Price of maize was determined through the supply and demand situation of the market. The marketing cost per 100 kg maize for Farias, wholesalers and Aratdars were Tk. 61.48, Tk. 122.75, and Tk. 96.80, respectively. Cost of marketing for wholesalers was the highest among all intermediaries and the lowest for Farias. The marketing cost incurred by all intermediaries was Tk. 281.03 per 100 kg maize. Transportation cost was the highest (46.42%) and information search cost was the lowest (1.35%) of the total marketing cost. Knowledge about marketing system is needed for farmers and other market participants to do their business better.

Key words: Market participants, marketing channel, marketing functions, marketing cost and marketing margin

Please cite this article as: Kausar, A. K. M. G., Alam, M. J. & Awal, M. A. (2015). Marketing system of maize in Gaibandha district of Bangladesh. *Journal of Bioscience and Agriculture Research* 05(01): 01-09.

This article is distributed under terms of a Creative Common Attribution 4.0 International License.

I. Introduction

Bangladesh is a densely populated country whose livelihood depends directly or indirectly on agriculture. The predominance of agriculture in Bangladesh becomes obvious from its contribution to the Gross Domestic Product (GDP) and overall employment. In case of overall employment, the contribution of the sector was 47.56% (BBS, 2010). During 2012-13 the contribution of agriculture sector in GDP was 13.09% at current price. The sub-sectors are i) Crops and vegetables, ii) Livestock, iii) Forestry and iv) Fisheries. Contribution of these sub-sectors is 9.49%, 1.84%, 1.76% and 3.68%,

1

¹ *Faria is* one type of intermediary who purchase product from farmer or any other intermediary and sold it the next ² *Aratdar* is a one type of intermediary who works as commission agent. They buy products from the farmer, or *Faria* or wholesaler and supply it to the potential buyer on commission basis. They have permanent shop in the market with permanent staff.

³ *Van* is a local three wheel vehicle used in the rural areas in Bangladesh for transporting goods and people.

⁴ *Votvoti* is a local three wheel vehicle generated by two stroke engine used in the rural areas in Bangladesh for transporting human being and agricultural produce.

respectively. Disaggregation of the country's agricultural GDP reveals that the crop sub-sector alone accounted for about 72.50% which is bigger than other sub-sectors. In overall GDP, the contribution of crops and vegetables was 11.24% in 2010-11 but in recent year it has declined at 9.49% which is however alarming (BER, 2014). Crops and vegetables are grown in Bangladesh due to fertile soil and suitable climate. Among the cereals, maize is the third most important crop after rice and wheat. It is a versatile crop and is more nutritious than rice in terms of protein, phosphorus, fat and also in minerals like magnesium, potassium and sulphur. But, it had an insignificant coverage of only 0.21% of rice and 3% of wheat acreage (Paul, 2012). With the introduction of high yielding seeds, its area and production have been expanding fast and it reached the level of 1485 thousand tons from the cultivation of 554 thousand acres of land in 2012-13 (BBS, 2013). Among different districts of the country, Dinajpur, Rangpur, Bogra, Kushtia, Chuadanga and Dhaka were observed to be more progressive in maize cultivation (Quasem, 1999). Maize was introduced as relatively new crop in the cropping patterns of Bangladesh especially in the northern region (Hasan et al., 2008). Maize has always been considered as a minor crop in Bangladesh. During the last ten years, it had gained an increasingly important attention by the government which is mainly due to huge demand of maize, particularly for poultry feed industry (Kausar, 2012).

Agricultural marketing is defined as comprising of all activities involved in supply of farm inputs to the farmers and movement of agricultural products from the farmers to the consumers (Acharya and Agarwal, 2000). It is both a physical distribution and an economic bridge designed to facilitate the movement and exchange of commodities from farm to the fork. Marketing system composed of alternative product flows, marketing channels, a variety of firms (intermediaries) and numerous business activities (marketing function). An efficient marketing system is a primary concern for stable and remunerative prices to producers which can provide necessary incentive to increase production. To maintain the tempo and pace of increased production through technological development, assurance of remunerative prices to producers is a primary requisite. This can be ensured by efficient marketing system.

A common feature of developing country is the existence of a number of intermediaries in between producers and consumers such as *Bepari, Farias, Aratdars,* wholesalers, retailers etc. They charge high price to consumers but share only small part of it with the producers. This may be a kind of exploitation of the producers which necessitates choosing a proper channel where they can get reasonable profit without disturbing the reasonable margin of the intermediaries. The study was an attempt to identify existing market participants, marketing channels, marketing cost and marketing margin of maize in some selected areas of Gaibandha district of Bangladesh which will help producers and other market participants to understand the marketing system of maize properly to get their reasonable margin.

II. Materials and Methods

Two upazila's viz. Sughatta and Fulchhari of Gaibandha district were selected for this study. This selection was on the basis of higher concentration of production and marketing of maize in that area. In total, 13 farmers (7 from Sughatta and 6 from Fulchhari upazila), 10 *Farias* (5 from Sughatta and 5 from Fulchhari upazila), 15 wholesalers (8 from Sughatta and 7 from Fulchhari upazila) and 12 *Aratdars* (6 from Sughatta and 6 from Fulchhari upazila), hence, a total of 50 intermediaries were selected through purposive random sampling method. The sampled respondents were directly interviewed through a structured interview schedule for collecting data regarding production, marketing cost and margin etc. The survey was done in August, 2012. Collected data were cleaned, coded, analyzed for results and interpreted for discussion.

III. Results and Discussion

Marketing channels

Marketing channels are routes through which agricultural products move from producers to consumers (Acharya and Agarwal, 2000). Maize is mostly used for poultry and fish feed in Bangladesh. Sometimes, maize has been processed into popcorn for consumption and also

consumed in roasted form. The marketing channel may be short or long for a particular commodity depending on quality of the product, nature and number of consumers and producers, intermediaries, marketing services etc.

Marketing channels in the study area which follows:

Channel I	Farmer	→ Faria	→ Wholesaler	→ Aratdar	→ Feed mill
Channel II	Farmer	→ Wholesaler	→ Aratdar	→ Feed mill	
Channel III	Farmer	→ Aratdar	→ Feed mill		
Channel IV	Farmer	→ Wholesaler	→ Feed mill		
Channel V	Farmer	→ Faria	→ Aratdar	→ Feed mill	
Channel VI	Farmer	→ Faria	→ Wholesaler	→ Poultry farm	
Channel VII	Farmer	→ Wholesaler	→ Aratdar	→ Poultry farm	

Among these identified channels 5 were most prominent through which the maize moves from farmers to the end-users or feed mills which is mentioned in Table 01.

Table 01. Maize transport through marketing channels (percentage)

Channel	Marketing channel	Product	Rank (I ₁)
I	Farmer-Faria-Wholesaler-Aratdar- Feed mill	5	5
II	Farmer-Wholesaler-Aratdar-Feed mill	12	4
III	Farmer-Aratdar -Feed mill	45	1
IV	Farmer-Wholesaler-Feed mill	25.5	2
V	Farmer-Faria-Aratdar-Feed mill	12.5	3
Total		100	

Maximum amount of product (maize) was moved through the channel III (farmer–*Aratdar*–feed mill). It was about 45% of total marketed maize. It was followed by channel IV, V, II and I, respectively. It was observed that 25.5%, 12.5%, 12%, 5% of the total marketed maize was moved through channel IV, V, II, I, respectively (Table 01). Farmers were more intended to sell their maize directly to *Aratdars* in expecting higher price for their maize. They sold their maize to *Farias* in case of quick selling for meeting immediate cash requirement.

Market participant

Apart from farmers and consumers a number of intermediaries were involved in marketing of maize. The intermediaries involved in maize marketing were *Farias*, wholesalers, and *Aratdars*. A brief description of market participants is given below:

Farmer

Maize marketing channels started from the farmers. Farmers sold maize to intermediaries both at market and farmyard. They sold 100% of maize to *Farias* (30%), wholesalers (25%) and *Aratdars* (45%).

Faria

Farias found in the study area purchased maize from producer at the farm gate or in the local village market and sold to the wholesalers and *Aratdars*. They did their business independently and were self-financed in maize trading. Apart from maize trading, most of the *Farias* were engaged in trading of other agricultural commodities such as paddy, jute, wheat etc. They had no permanent staff.

Wholesaler

The wholesalers had fixed establishments in the market with adequate storage facilities. Apart from maize trading, most of the wholesalers were engaged in trading of other agricultural commodities like paddy, jute, pulses, groundnut, soybean and wheat etc. They purchased large amount of maize from

farmers and small amount of maize from *Farias* in the village market. They had permanent staff and did their business at large scale.

Aratdar

Aratdars were the last intermediary in the channel before feed mill or ultimate users of maize of the study. They had permanent business premises in the upazila market. They purchased maize from Farias and wholesalers. Sometimes, they bought wet maize from the farmers on the understanding that the farmers could ask them for immediate cash any time. They supplied dry maize to the feed mills within one to two days of taking an order. The Aratdars working with feed mills had little freedom to purchase and sale decisions. They followed the decisions of the feed mills. Always they stay connected with the feed mills to take decision whether they would purchase maize or not at the prevailing market prices. Aratdars had Chatal⁵ of their own and all processing activities such as drying, cleaning, and packaging were done at Chatal for sending to the feed mills. Who would bear the expenses of buying or selling, depended on the price charged for maize?

Feed mill

Feed mills were the ultimate user of maize. They bought dry maize from wholesalers and *Aratdars*. Then, they processed the dried and cleaned maize into different forms like poultry feed, fish feed, maize floor etc. Feed mills had a good number of permanent employees and also hired day labourer to do those buying and processing activities. They bought a large amount of maize in peak season and stored it for lean season to maintain pace in their daily business.

Marketing functions

Any single activity performed in carrying a product from the point of its production to the ultimate consumer may termed as a marketing function (Acharya and Agarwal, 2000). In this study, maize marketing functions were buying and selling, transportation, storage, packaging, market information and pricing.

Buying and selling

Buying and selling is the functions of exchange. Both have their primary objectives of negotiating terms of exchange. Percentages of maize transacted by farmers and intermediaries are shown in Table 02 and 03.

In the study area, farmers did not store any amount of maize for their own consumption. They sold 100% of their maize to *Farias*, wholesalers and *Aratdars*. The ultimate buyer of maize were feed mills, they bought dried maize from the wholesalers and *Aratdars*. Wholesalers bought their maize from farmers, *Farias* and *Aratdars*. The wholesalers and *Aratdars* sold a little percentage of their maize to poultry farms because there were a few poultry farms in the study area. It was also reported from the *Aratdars* and wholesalers that they did not want to sell their maize to poultry farm due to their little volume of maize.

IUDI	 Duying	IIIIIII	(percentage)

Buyer				Seller			
	Farmer	Faria	Wholesaler	Aratdar	Feed mill	Poultry farm	Total
Faria	100	-	-	-	-		100
Wholesaler	70.59	29.41	-	-	-		100
Aratdar	60.40	16.78	22.82	-	-		100
Poultry farm	-	-	70	30	-	-	100
Feed mill				100	-		100

⁵An open space constructed purposively for doing post-harvest activities i.e. sun drying, cleaning, packaging etc. of different crops like rice, wheat, maize etc.

Table 03. Selling of maize (percentage)

	Buyer									
Seller	Faria	Wholesaler	Aratdar	Feed mill	Poultry farm	Total				
Farmer	25	30	45	-	-	100				
Faria	-	50	50	-	-	100				
Wholesaler	-	-	37	60	3	100				
Aratdar	-	-	-	98	2	100				

Drying, cleaning and processing of maize

After harvesting, farmers sundried and cleaned maize in their own farmyard with family members for 2/3 days and stored it under the shed until they could sell it. Then maize was packed with plastic sack or jute sack to prepare for selling. *Farias* bought maize from the farmers. *Farias* did not take part in drying or cleaning activities. Then only bought maize from farmers and sold those to the wholesalers, *Aratdars* and feed mills. Wholesalers dried and cleaned maize in their own premises or others' *Chatal*, if necessary to finally process maize for selling to *Aratdars* or feed mills with their permanent or temporary labors. Few wholesalers found in the study area who were involved in whole process of buying, drying, cleaning of maize and processing for selling to *Aratdars* or feed mills. Finally, *Aratdars* dried, cleaned and packed those for selling to the feed mills. The *Aratdars* used jute sack for packing with jute ropes. In doing this, they used their own labors. They had permanent labors to do those activities.

Storage

Farmers and *Farias* generally did not store maize. Sometimes wholesalers stored maize in their shop for selling maize later. *Aratdars* stored maize at their *Godown* (store house) for two or three months for selling later to get higher price.

Transportation

Transportation is the lifeblood of modern marketing system. It creates place utility to the producer. Adequate and efficient transportation systems are the corner stone of modern marketing system. In the study area, farmers transported their maize by using *Van* and by-cycle (Table 04). The *Farias* used *Van*, by-cycle and boat for marketing their maize. Maize was produced scattered in different *Char*⁶ areas. For carrying maize from scattered areas to the local markets, the farmers used boat. Wholesalers used pick-up and truck for carrying maize to the terminal market and *Van*, power tiller for carrying maize to the village market. *Aratdars* used truck and pick-up for carrying maize to feed mills' premise. Feed mills carried their maize by truck and pick-up as the main roads to the feed mills were developed enough that the truck and pick-up can travel.

Table 04. Modes of transportation used by farmers and intermediaries (percentage)

Mode of transportation	Farmer	Faria	Wholesalers	Aratdar	Feed mill
Van	90	80	20	-	-
By-cycle	10	10	-	-	-
Pick-up	-	-	40	30	20
Power tiller	-	-	20	-	-
Boat	-	10	-	-	-
Truck	-	-	20	70	80

Packaging

Farias and wholesalers packed their maize with plastic and jute sack. Aratdars packed their maize with jute sack. Plastic sack was less costly than jute sack. Plastic sack could bear a weight of 60 kg to 70 kg of maize which cost Tk. 15 to Tk. 20 per bag. Jute sack could bear a weight of 75 kg to 80 kg of maize which cost Tk. 60 per bag. Jute sack was more preferable than plastic sack in terms of storing and

-

⁶ The land located in an active river basin that is subject to erosion and accretion

transportation.

Market information

Market information is an important facilitating function in a marketing system. It facilitates marketing decisions, regulates the competitive market processes and facilitates marketing mechanisms (Kohls, 1980). Table 05 shows how farmers and intermediaries collected market information. In the study area, visit to market, personal observation, fellow farmers, traders and mobile phone were the main sources of market information. Mobile phone was the common mode for collecting market information. It was roughly available to all types of intermediaries and farmers. Farmers and intermediaries collected all information through market visit, personal observation and discussion with fellow farmers and traders.

Table 05. Sources of market information for farmers and intermediaries (percentage)

Farmer and	Visit to market and	Fellow farmer and	Mobile phone
intermediaries	personal observation	trader	
Farmer	40	40	20
Faria	30	40	30
Wholesaler	40	20	40
Aratdar	40	40	20

It was observed that wholesalers used mobile phone more for getting market information than those of others. Farmers used mobile phone less due to its high price. They preferred personal visit to market and fellow farmers for getting market information which was also true for *Aratdars*. *Farias* got market information from fellow traders and personal visit to market. They also used mobile phone in that regard.

Price determination

Demand, supply and quality of maize influenced the market prices. All the traders involved in maize marketing followed the open bargaining method for fixing the price at the time of buying and selling of maize. The price was mainly determined by the number of buyers attending in the market and the volume of maize offered for sale. Due to lack of local buyers of maize, the sellers had low bargaining power compared to buyers.

Marketing cost

Marketing cost of any product represents the cost of performing various kinds of marketing functions. According to Kohls (1980), the cost of marketing represents the cost of performing the various marketing functions and operation by the various agencies involved in the marketing process.

Marketing cost of farmer

Marketing cost of farmers included all cost items i.e. transportation, market toll/tax, packaging (sack), weighing and sewing, load/unload, information search and personal expenditure involved in selling of maize. The average marketing cost incurred by the farmers for 100 kg maize was calculated at Tk. 79.12 (Table 06). The roads from farmers' house to the village market were not so good and only *Van* and boat were available vehicles which charged high cost. The cost of transportation accounted for 41.57% which was highest among all cost items. Shohag (2006) identified it at 47.13% in Gobindagonj upazila of Gaibandha district. Information search cost was the lowest because the farmers had to contact little with *Farias*, wholesalers or *Aratdars* over mobile phone for selling maize which charged Tk. 3 or Tk. 4 only. For loading/unloading and weighing of maize, the farmers did it by own, sometimes by the buyers. Processing cost was absent because they did not do any processing activities.

Marketing cost of Faria

Marketing cost incurred by the *Farias* for 100 kg maize was calculated at Tk. 61.48. Transportation cost was the highest (34.29%) while the lowest (2.31%) cost item was information search (Table 06).

Shohag (2006) showed transportation as the highest (39.95%) and storage as the lowest (2.01%) cost item for Farias. Market toll/tax had to be borne by Farias for placing maize in the market place. The charge was collected by the Bazaar (market) authority. It was collected in the forms of quantity (0.5/0.75 kg for 40 kg) or Taka (Tk. 10/5 for 40 kg maize). Packaging cost depended on type of sack, either jute sack or plastic sack used. The jute sack cost high where it low for plastic sack. The market participants were more intended to use jute sack than plastic sack. The reason was that jute sack last more than plastic sack. Farias did not have permanent shop or business premise and did not engage in processing activities.

Marketing cost of wholesaler

Marketing cost incurred by the wholesalers for 100 kg maize was calculated at Tk. 122.75 (Table 06). Like other traders, transportation cost was the highest (55.49%) and the information search cost was the lowest (1.33%). Shohag (2006) and Rony (2008) showed transportation as highest (20% and 23.83%) and market toll as the lowest (4.33% and 4.39%) cost item for wholesaler in Gaibandha and Dinajpur district, respectively. Sometimes wholesalers processed their wet maize in *Chatal* or business premise for selling to *Aratdars* and feed mills. They had to store their maize in their shop or *Chatal* in case of undelivered. At the time of storing they had to incur storage cost. They had permanent labor for weighing, loading and unloading and packing maize. Personal expenses were the highest for wholesalers than those of other intermediaries.

Marketing cost of Aratdar

Marketing cost incurred by the *Aratdars* for 100 kg maize was calculated at Tk. 96.80 (Table 06). Transportation cost was the highest (42.61%) and the lowest was information search cost (0.78%). The other important cost items were processing (22.19%), storage (3.04%), electricity bill (2.60%), rent (2.58%), market toll/tax (5.43%), weighing (1.94%), labor (6.02%), sack (7.09%), loading/unloading (3.37%) and personal expenditure (2.36%). The marketing cost of *Aratdars* was lower than those of wholesalers as they handled more amount of maize than wholesalers which reduced their total marketing cost as average. *Aratdars* had to incur more cost on processing of maize. Other intermediaries were not highly involved in that activity. Wet maize was dried or prepared for feed mills from their premises. For maintaining storage and *Chatal* they had to incur huge cost.

Total marketing cost of all maize intermediaries

Total cost of marketing of all intermediaries included all costs incurred by different types of intermediaries operating in maize marketing. Nature and extent of marketing cost varied from intermediary to intermediary. Average marketing cost per 100 kg maize for *Farias*, wholesalers and *Aratdars* were Tk. 61.48, Tk. 122.75 and Tk. 96.80, respectively. The cost per 100 kg maize were Tk. 23.56, Tk. 27.36, Tk. 32.06, Tk. 42.90, Tk. 34.75 and Tk. 25.50 for farmer, *Faria, Bepari*, wholesaler, retailer and feed mill, respectively at Gobindagonj upazila of Gaibandha district (Shohag, 2006). It was Tk. 23.56, Tk. 30.34, Tk. 36.92, Tk. 42.38 and Tk. 33.36 for farmer, *Faria, Bepari*, wholesaler and retailer, respectively in Khanshama upazila of Dinajpur district (Rony, 2008). Cost of marketing for wholesalers was the highest among all intermediaries and the lowest for *Farias*. Total marketing cost of all intermediaries was calculated at Tk. 281.03 per 100 kg maize. Transportation cost and information search cost were the highest (46.42%) and lowest (1.35%), respectively of the total marketing cost. Since maize was transported long distance from farmers to ultimate users or feed mills, high transportation cost was incurred by traders at different levels of marketing (Table 06).

Marketing margin

Total marketing margin usually consists of margins at different stages of marketing. Margin is the difference between the buying and selling prices of each intermediary. Table 07 shows that marketing margin of *Farias*, wholesalers and *Aratdars* were Tk. 81.50, Tk. 164.67 and Tk. 158, respectively. The marketing margin of wholesalers was the highest due to large amount of trading and the lowest for *Farias* due to small amount of buying and selling. The results were similar to Shohag (2006). The reason was that the wholesalers could buy maize from farmers at low price and sold to those *Aratdars* and feed mills to whom they could secure higher selling price. *Aratdars*' margin was higher than *Farias* and lower than wholesalers. They had to pay more prices for buying maize from farmers than those of

wholesalers. They purchased wet maize from farmers and *Farias* and semi processed maize from wholesalers. The wet maize lost weight after drying and ultimately the *Aratdars* sold dried maize to the feed mills. For that reason their marketing margin was lower than those of wholesalers. The marketing margin was the lowest for *Farias* because of their temporary business nature, higher marketing cost for small volume of maize and charging minimum margin over the purchase price and marketing cost.

Table 06. Average marketing cost of farmer and intermediaries (Tk. per 100 kg)

Cost items	Farmer	%	Faria	%	Wholesaler	%	Aratdar	%
Processing					5.20	4.24	21.48	22.19
Transportation	32.89	41.57	21.08	34.29	68.11	55.49	41.25	42.61
Storage			0		7.04	5.73	2.94	3.04
Electricity bill			0		2.64	2.15	2.51	2.60
Rent			0		2.55	2.07	2.50	2.58
Market toll/tax	14.61	18.47	10.85	17.65	7.25	5.09	5.25	5.43
Weighing	5.54	7.00	3.43	5.57	2.98	2.43	1.88	1.94
Labor	0		0		4.99	4.07	5.82	6.02
Sack	17.36	21.94	16.33	26.56	10.70	8.72	6.86	7.09
Load/unload	6.85	8.66	5.53	9.00	6.31	5.14	3.26	3.37
Information	0.90	1.14	1.42	2.31	1.63	1.33	0.76	0.78
search								
Personal	0.96	1.21	2.84	4.62	3.36	2.74	2.28	2.36
expense								
Total	79.11	100	61.48	100	122.75	100	96.80	100
%			21.88		43.68		34.44	

Table 07. Marketing margin of intermediaries (Tk. per 100 kg)

Intermediaries	Purchase	Sale	Marketing	Marketing	NMM	% of
	price	price	margin	cost		NMM
Faria	862.5	944	81.50	61.48	20.02	16.26
Wholesaler	944.67	1109.33	164.67	122.75	41.92	34.04
Aratdar	1109.5	1267.5	158	96.80	61.20	49.70
Total			404.17	281.03	123.14	100

Net marketing margin

Net marketing margin (NMM) or profit is the difference between marketing margin and marketing cost. Table 07 indicates that percentages of profit or net marketing margin of intermediaries were 16.26% for *Farias*, 34.04% for wholesalers, and 49.70% for *Aratdars*. Rony (2008) calculated net profit of *Faria, Bepari*, wholesaler and retailer and these were Tk. 45, Tk. 50, Tk. 62.50 and Tk. 37.50, respectively. *Aratdars* received the highest NMM (49.70%) whereas *Farias* received the lowest (16.26%) for 100 kg maize which can be compared to Shohag (2006) who found wholesaler as receiving highest profit at Tk. 16.60. Marketing cost of *Aratdars* was relatively lower than those of *Farias* and wholesalers due to high volume of maize trading. Though marketing margin of wholesalers was higher, net marketing margin was lower than those of *Aratdars* due to their relatively higher marketing cost. Net margin of *Farias* was the lowest among intermediaries due to their higher marketing cost.

IV. Conclusion and Recommendation

Maize area under cultivation and production has been expanding fast in northern region especially Gaibandha district of Bangladesh with the introduction of high yielding seeds and confronting huge demand in poultry feed industry. The study found that farmers sold their maize to *Farias*, wholesalers and *Aratdars*. They used *Van* and by-cycle in those selling activities whereas intermediaries used *Van*,

pick up, *Votvoti*, boat and truck. Farmers and intermediaries got market information through market visit, discussion with fellow farmers and traders and mobile phone. Marketing cost was highest for wholesalers and lowest for *Farias*. Similar results were found in case of marketing margin. The study identified marketing problems of farmers and intermediaries in the area and recommended some solutions. Farmers incurred high transportation cost due to poor road and transport facilities which necessitates development of improved road and transport. They did not get expected profit due to dominancy of intermediaries and unlawful market toll which demand elimination of market toll and proper monitoring of intermediaries. Lack of credit facilities were reported by both farmers and intermediaries which necessitates adequate credit facilities from formal and informal institutions in the area. Sufficient number of procurement centers or improved *Godowns* can be established to solve storage problem. Local DAM (Department of Agricultural Marketing) office, MoA (Ministry of Agriculture) office as well as other concerned government and non-government organizations may disseminate market information to keep farmers update about daily price and existing market situation. Recommended solutions will help to construct maize marketing system of Gaibandha district more effective and fruitful if these are in action.

Acknowledgement

Authors are thankful to the Ministry of Science and Technology of the Government of the People's Republic of Bangladesh for granting financial support in the form of National science and technology (NST) scholarship to conduct the research.

V. References

- 1. Acharya, S. S. & Agarwal, N. L. (2000). Agricultural Marketing in India (4th ed.). New Delhi, India: Oxford and IBH Publishing Co. Pvt. Ltd.
- 2. BBS (Bangladesh Bureau of Statistics). (2010). Report on Labour Force Survey 2010. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh.
- 3. BBS (Bangladesh Bureau of Statistics). (2013). Yearbook of Agricultural Statistics of Bangladesh 2013. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh.
- 4. BER (Bangladesh Economic Review). (2014). Bangladesh Economic Review 2014. Dhaka: Ministry of Finance, Government of the People's Republic of Bangladesh.
- 5. Hasan, M. N., Munayem, M. A., Islam, M. S., Alam, Q. M. and Hossain, M. I. (2008). Change and Instability in Area and Production of Wheat and Maize in Bangladesh. *Bangladesh Journal of Agricultural Research*, 33(3), 409-417.
- 6. Kausar, A. K. M. G. (2012). Marketing efficiency and transaction cost analysis of maize: a case study from Gaibandha district of Bangladesh (Unpublished master's thesis). Bangladesh Agricultural University, Mymensingh, Bangladesh.
- 7. Kohls, R. L. & Uhl, J. N. (1980). Marketing of Agricultural Product (5th ed.). New York, USA: McMillian Publishing Company.
- 8. Paul, J. (2012). An economic study on maize production in some selected areas of Lalmonirhat district (Unpublished master's thesis). Bangladesh Agricultural University, Mymensingh, Bangladesh.
- 9. Quasem, M. A. (1999). Maize production and marketing in Bangladesh: an indicative exercise (FMRSP Working Paper 14). Dhaka: Food Management & Research Support Project, Ministry of Food, Government of the People's Republic of Bangladesh.
- 10. Rony, S. M. A. A. M. (2008). Marketing of maize in selected areas of Dinajpur district (Unpublished master's thesis). Bangladesh Agricultural University, Mymensingh, Bangladesh.
- 11. Shohag, M. S. I. (2006). Production and marketing of maize in a selected area of Gaibandha district (Unpublished master's thesis). Bangladesh Agricultural University, Mymensingh, Bangladesh.