

## **OPPORTUNITIES OF GROUNDNUT CULTIVATION AND MARKETING SYSTEM IN CHAR LANDS OF BANGLADESH**

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### **Abstract**

Bangladesh has vast char area but most of the char lands are not suitable for crop production. So the present study was undertaken to examine the suitability of crop production by assessing adoption, relative profitability, marketing system, production and marketing problems of rabi season groundnut in char lands of Faridpur, Jamalpur, and Kishoreganj districts during 2013-2014. The sample size of the study was 225 including 90 groundnut farmers and 135 traders. The study revealed that the highest (56%) percent of groundnut farmers cultivated Dhaka-1 variety and only 23% of all farmers cultivated BARI chinabadam-8. The per hectare production cost of groundnut was Tk 61,547, net return was Tk.42,033 and BCR was 1.68. The partial budgeting analysis showed that if the farmers cultivated groundnut instead of its competitive crops, they would receive Tk. 24,445 additional to sesame and Tk.21,990 additional to wheat cultivation. The average estimated marketing costs was highest (Tk.1388/quintal) for Stockist and lowest (Tk.55/quintal) for Arathdar. Net marketing margin was also highest (Tk.1212/quintal) for Stockist and lowest (Tk.59/quintal) for Arathdar. Marketing chain-v was the most efficient than other five chains because it has single involvement of intermediary. The major problems identified by farmers were lack of irrigation facilities (34%), low rate of seed germination (31%), and lack of cultivable land (29%). Major marketing problems were lack of cash capital (82%), and lack of storage facilities (55%) etc. Arrangement of institutional credit with low interest rate (80%), collateral free credit (45%), and arrangement of storage facilities (72%) were the trader's opinion to minimize the marketing problems of groundnut. Therefore the study will be helpful to increase groundnut cultivation and improved the marketing system in char lands of Bangladesh.

**Keywords:** Adoption, relative profitability, marketing efficiency, groundnut and char lands

### **Introduction**

Bangladesh has vast Char land in different districts embraced by Padma, Meghna, Jamuna, Brahmaputra and other rivers which has highly potential for groundnut production. In 1993 the estimated total area covered by chars in

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Bangladesh was 1,722 square kilometres. During the period of 1989 to 1993, char areas increased in all rivers, except in the upper Meghna. The net increase in char area during this period amounted to 36,000 ha which is equivalent to about 25% of total char area during 1984 (Rahman and Davis, 2005). This trend is increasing day by day. The cropping intensity of char land is increasing day by day. Now a days several crops such as maize, wheat, sesame, potato, groundnut etc. were produced in different parts of char lands in Bangladesh. It's substantially changed the socioeconomic life of the char lands people. The total groundnut production was 0.75 lac MT from 0.30 lac hectares of cultivated land in Bangladesh (BBS, 2011). The overall groundnut production might be around 0.32 lac tones from 0.20 lac hectares of cultivated char land area during both Rabi and *Kharif* seasons (BSS, 2012). Because of lower farming cost and excellent market price with huge demand, char farmers have been expanding groundnut cultivation every year in the char lands.

Few years back the char people mostly affected by river erosion had to rush to towns for earnings either as day labor or rickshaws and vans puller. Now they found a hope of survival by growing groundnut without much investment and hassle. Another advantage of groundnut cultivation is that no natural calamities except flood can damage this crop. The farmer said it does not require any fertilizer, irrigation or pesticide for growing the crop (BSS, 2013). On the other hand groundnut cultivation has no adverse impact on environment rather its green plants help maintained ecological balance in the area. The increased production of groundnut greatly depends on its efficient marketing system. Different constraints from production to consumer's level were emerged including transportation, price fluctuation, buyer etc., which may caused hamper in decision-making of the farmers to cultivate groundnut. Therefore, the study would give us an efficient marketing system of groundnut. Recognizing the above importance and suitability of groundnut production and marketing in char lands the study was undertaken with the following objectives.

#### **Objectives of the study**

1. To determine the adoption level, relative profitability and opportunities of groundnut cultivation in char lands;
2. To examine the existing marketing system of groundnut in char lands;
3. To estimate the marketing cost, margin and marketing efficiency at different levels;
4. To identify the major production and marketing problems of groundnut;
5. To derive some policy recommendation from the study.

### Materials and Method

**Study area:** Three districts Faridpur, Jamalpur and Kisoreganj were selected for the *rabi* groundnut production and marketing survey. Two upazilas from each district were selected on the basis of where char lands are available for the *rabi* groundnut production. Markets were selected where the maximum product were marketed from the production area.

**Methods of data collection:** A multi-stage simple random sampling technique was followed for the selection of district, upazila, block and market for the collection of data. The populations of block and market were grouped into different strata like; Farmer, Faria, Bepari etc. and the simple random sampling technique was used for drawing the desired sample from each strata. The study was conducted during the period in 2013-14. Data were collected from both primary and secondary sources.

**Sampling procedure and size:** A total of 225 sample taking 75 from each area were interviewed for the present study. Among the 75 samples, 30 farmers and 45 traders were selected from each district. The sample distribution of each district was 30 farmers and 45 traders (10 Faria + 8 Bepari + 5 Arathdar + 8 Paiker + 10 Retailer + 4 Stockist). In selecting the types of traders a list of intermediaries were prepared with the help of different types of intermediaries or market authorities existing in the market. Then the required amounts of traders were proportionally selected from the list.

### Analytical techniques

#### Cost and return analysis

Following profit equation were used to assess the profitability of groundnut cultivation. Net return from crop cultivation was:

$$\pi_{ijk} = P_{ijk} \cdot Q_{ijk} - (TVC_{ijk} + TFC_{ijk})$$

Where,  $\pi$  = Per hectare net return from ith crops

$P_{ijk}$  = Per unit price of ith crops (Tk/kg)

$Q_{ijk}$  = Quantity of ith crops (Kg/ha)

$TVC_{ijk}$  = Total variable cost of ith crops (Tk/ha)

$TFC_{ijk}$  = Total fixed cost of ith crops (Tk/ha)

i(1..4) = number of crops,

j(1..3) = number of location,

k(1..90) = number of farmers.

**Partial budgeting techniques** were used for analysis of relative economic performance of Groundnut with its competitive crops.

### **Marketing margin analysis**

Marketing margin of the traders were calculated by using the following formula

$$GM_{ij} = PR_{ij} - PP_{ij}$$

Where,

$GM_{ij}$  = Gross margin (Tk/quintal) for *i*th intermediary of *j*th crops

$PR_{ij}$  = Price Received (Tk/quintal) for *i*th intermediary of *j*th crops

$PP_{ij}$  = Price paid (Tk/quintal) by *i*th intermediary of *j*th crops

$$NM_{ij} = GM_{ij} - MC_{ij}$$

Where,

$NM_{ij}$  = Net margin (Tk/ quintal) for *i*th intermediary of *j*th crops

$MC_{ij}$  = Marketing cost incurred (Tk/ quintal) by *i*th intermediary of *j*th crops

### **Marketing efficiency**

Acharya's method was used for estimating marketing efficiency (Acharya and Agarwal, 2004) in the present study.

$$ME = \frac{FP}{MC + MM}$$

Where,

ME = Marketing efficiency.

FP = Net price received by farmers

MC = Total marketing cost

MM = Total net marketing margin of intermediaries.

A higher value of ME denotes higher level of efficiency and vice versa. Descriptive statistics and tabular analysis were also used for the analysis of data.

### **Results and Discussion**

The study goes through the two parts, such as groundnut production and groundnut marketing system aiming to fulfill the objectives of the study. The results regarding production and marketing of groundnut are presented and discussed below specifically.

### Adoption of groundnut variety

Both HYV and local variety were being cultivated in the study areas except Faridpur. In Faridpur 93% farmers cultivated Dhaka-1 variety and remaining 7% farmer used local variety. In case of Kishoreganj 7% farmer cultivated BARI chinabadam-9, 67% farmers used Dhaka-1 and the rest 27% farmers used local variety. On the other hand, in Jamalpur 70% farmers cultivated BARI Chinabadam-8, 13% farmers used BARI Chinabadam-9, 10% famers used BINA Chinabadam-4 and 7% farmers cultivated Dhaka-1 variety. Adoption rate of HYV seed in Jamalpur was high because HYV seed of groundnut were supplied by the project of ICRISAT (Table 1).

**Table 1. Percent of farmer's adopted of groundnut variety**

Variety name	Faridpur (n=30)	Jamalpur (n=30)	Kishoreganj (n=30)	All area (n=90)
BARI chinabadam-8	-	70	-	23
BARI chinabadam-9	-	13	7	7
BINA chinabadam-4	-	10	-	3
Dhaka-1	93	7	67	56
Local	7	-	27	11
Total	100	100	100	100

**Table 2. Per hectare input use pattern of groundnut cultivation**

Particulars	Faridpur	Jamalpur	Kishoreganj	All Area
Human Labour (Man-days/ha)	101	119	106	108
Own Labour (Man-days/ha)	56	73	63	64
Hired Labour (Man-days/ha)	45	45	43	44
Seed (Kg/ha)	106	120	116	114
Fertilizer				
Urea (Kg/ha)	12	41	10	21
TSP (Kg/ha)	5	34	3	14
MoP (Kg/ha)	4	37	8	16
DAP (Kg/ha)	0	61	0	20
Gypsum (Kg/ha)	0	14	0	5

### Input use pattern

On an average, 108 man-days of human labour per hectare were used for groundnut cultivation but it was vary area to area. The highest number of human labour was used in Jamalpur (119 man-days/ha) and lowest in Faridpur (101 man-days/ha). Farmers used 114 kg groundnut as a seed per hectare in all area. Highest seed rate was used in Jamalpur (120 kg/ha) and lowest in Faridpur (106 Kg/ha) for groundnut cultivation. The respondent farmers applied urea, TSP,

MoP, DAP and gypsum at the rate of 21 kg/ha, 14 kg/ha and 16 kg/ha, 20 kg/ha and 5 kg/ha, respectively. The highest amount of fertilizers were used by the farmers of Jamalpur because ICRISAT project supplied fertilizers. On the other hand, the farmers of Kishoreganj and Faridpur were used very less amount of fertilizer and maximum farmers were not using any fertilizer in their field (Table 2).

### Cost of production

All variable costs like human labour, land preparation, seed, manure, fertilizers, insecticides, irrigation and interest on operating capital were considered for calculating per hectare cost of groundnut cultivation. Only land use cost was considered as a fixed cost for groundnut cultivation. The land use cost was calculated on the basis of lease value of land. Finally total cost was determined by adding fixed cost and variable cost. On an average, total cost of groundnut production was Tk.61,547/ha in which total variable cost was Tk.51,526/ha and fixed cost was Tk.10,021/ha. Highest cost was found in Jamalpur district (Tk.66,570/ha) and lowest cost was found in Faridpur district (Tk.56,895/ha). Because farmers of Jamalpur applied fertilizer, irrigation water and pesticide adequately. On the other hand the farmers of Faridpur and Kishoreganj applied less amount of fertilizer, irrigation water and pesticide (Table 3).

**Table 3. Cost of groundnut production in the study areas (Tk/ha)**

Particulars	Faridpur	Jamalpur	Kishoreganj	All area
A.Total variable Cost	47539	56153	50884	51526
Land preparation	7169	5798	6905	6624
Human labour	29005	33185	29695	30628
Family labour	16187	20646	17701	18178
Hired labour	12818	12538	11994	12450
Seed	9185	8519	11436	9713
Fertilizer	441	4011	426	1626
Urea	225	811	208	415
TSP	154	891	88	378
MP	62	603	130	265
DAP	0	1817	0	606
Gypsum	0	138	0	46
Irrigation	1014	3516	1643	2058
Insecticide/Pesticide	23	51	27	34
Interest on operating capital	702	826	752	760
B.Total fixed Cost	9356	10416	10292	10021
Land use cost	9356	10416	10292	10021
Total cost/ Full cost (A+B)	56895	66570	61176	61547

### Return

Average yield of groundnut was found at 2087 kg/ha. The highest yield was found in Jamalpur (2260 kg/ha) and the lowest in Faridpur (1920 kg/ha). The average gross return, gross margin and net return were Tk.103580, Tk.52054 and Tk.42033 per hectare respectively. The BCR of groundnut production was 1.68 in all area (Table 4).

**Table 4. Yield, gross return, net return of groundnut in the study areas**

Particulars	Faridpur	Jamalpur	Kishoreganj	All Aera
Average of yield(Kg/ha)	1920	2260	2080	2087
Average of sale price(Tk/kg)	50	49	50	50
Gross return(Tk/ha)	96000	110740	104000	103580
Total variable cost(Tk/ha)	47539	56153	50884	51526
Gross margin(Tk/ha)	48461	54587	53116	52054
Total cost(Tk/ha)	56895	66570	61176	61547
Net return(Tk/ha)	39105	44170	42824	42033
BCR on full cost basis	1.69	1.66	1.70	1.68

### Relative profitability of groundnut cultivation

The groundnut farmers cultivated different competitive crops (Table 5). Based on the highest number of cultivating farmers, sesame from Faridpur district, wheat from Jamalpur district and potato from Kishoreganj district were selected as competitive crops. A competitive economic performance of groundnut was evaluated through comparing with those selected crops.

**Table 5. Distribution of farmers cultivated competitive crops in the study areas**

Competitive Crops	Faridpur	Jamalpur	Kishoreganj	All area
Aman	3	-	-	3
Chili	-	2	4	6
Lentil	-	6	-	6
Mungbean	1	-	-	1
Mustard	-	3	-	3
Onion	-	4	-	4
Potato	-	1	19	20
Sweet potato	-	-	4	4
Sesame	10	-	-	10
Wheat	5	8	1	14
Wheat+Lentil	-	2	-	2
Wheat+Mustard	-	1	-	1
None	11	3	2	16
Total	30	30	30	90

### Relative profitability of groundnut with selected competitive crops

The total cost of groundnut production and its competitive crops like sesame, wheat and potato were Tk.61, 547 and Tk.31,990, Tk.49,269 and 1,27,396 per hectare respectively. The net returns of the above crops were Tk.42,033, Tk.14,650, Tk.22,491 and Tk.70,205 per hectare respectively. Net return of groundnut is higher than its competitive crop sesame and wheat and lower than potato. But Benefit-Cost ratio (BCR) of groundnut (1.68) is higher than sesame (1.46), wheat (1.46) and potato (1.55). So groundnut cultivation is more profitable than its competitive crops sesame, wheat and potato (Table 6).

**Table 6. Relative profitability of groundnut with its competitive crops**

Particulars	Groundnut	Sesame	Wheat	Potato
Average of yield(Kg)	2087	1166	3120	19760
Average of sale price(Tk/kg)	50	40	23	10
Gross return(Tk/ha)	103580	46640	71760	197600
Total variable cost(Tk/ha)	51526	24581	41860	119986
Gross margin(Tk/ha)	52054	21819	29900	77614
Total cost(Tk/ha)	61547	31990	49269	127396
Net return(Tk/ha)	42033	14650	22491	70205
BCR on full cost basis	1.68	1.46	1.46	1.55

### Relative economic performance by using partial budgeting technique

A partial budget could be prepared to ascertain the effect on the benefit of substituting one enterprise for another without any choice in the enterprise farmland area. In substituting one hectare of groundnut instead of sesame the net changes of benefit was Tk.24,455/ha which was more profitable than sesame. Partial budgeting of groundnut with its competitive crop wheat in Jamalpur indicated that if the farmers cultivated groundnut instead of wheat they received benefit Tk.21,990 per hectare. On the other hand partial budgeting of groundnut with potato indicated that the net changes of profit were negative which reflect that ground cultivation in Kishoreganj is not profitable (Table 7, 8, 9).

**Table 7. Partial budgeting of groundnut cultivation with sesame (Tk/ha)**

Additional costs	BDT	Additional revenue	BDT
Extra cost incurred for producing groundnut	56,895	Extra income earned for producing groundnut	96,000
A. Total Additional costs	56,895	C. Total Additional revenue	96,000
Reduced Revenue		Reduced Costs	
Income not received for not producing sesame	46,640	Cost saved for not producing sesame	31,990
B. Total Reduced Revenue	46,640	D. Total Reduced Costs	31,990
E. Total Additional costs and reduced revenue(A+B)	1,03,535	F. Total Additional revenue and reduced cost(C+D)	1,27,990
		<b>Net change in profit(F-E)</b>	<b>24,455</b>



**Table 8. Partial budgeting of groundnut cultivation with wheat (Tk/ha)**

Additional costs	BDT	Additional revenue	BDT
Extra cost incurred for producing groundnut	66,259	Extra income earned for producing groundnut	1,10,740
A. Total Additional cost	66,259	C. Total Additional revenue	1,10,740
Reduced Revenue		Reduced Cost	
Income not received for not producing wheat	71,760	Cost saved for not producing wheat	49,269
B.Total Reduced Revenue	71,760	D. Total Reduced Costs	49,269
E.Total Additional costs and reduced revenue(A+B)	1,38,019	F. Total Additional revenue and reduced cost(C+D)	1,60,009
<b>Net change in profit(F-E)</b>			<b>21,990</b>

**Table 9. Partial budgeting of groundnut cultivation with potato (Tk/ha)**

Additional costs	BDT	Additional revenue	BDT
Extra cost incurred for producing groundnut	61,176	Extra income earned for producing groundnut	1,04,000
A. Total Additional costs	61,176	C. Total Additional revenue	1,04,000
Reduced Revenue		Reduced Costs	
Income not received for not producing potato	1,97,600	Cost saved for not producing potato	1,27,396
B. Total Reduced Revenue	1,97,600	D. Total Reduced Costs	1,27,396
E. Total Additional costs and reduced revenue(A+B)	2,58,776	F. Total Additional revenue and reduced cost(C+D)	2,31,396
<b>Net change in profit(F-E)</b>			<b>-27380</b>

### Opportunities of groundnut cultivation in char lands

There are several opportunities for groundnut cultivation in char lands of Bangladesh. Sixty percent farmers mentioned that sandy soil is appropriate for groundnut production. Others opportunities were less irrigation and fertilizer requirement (54%), high profit due to low cost of cultivation (51%), cultivation without irrigation (47%), High yield compared to input uses (43%), Low labour requirement (44%) etc. reported by the farmers(Table 10). Groundnut is a crop that can survive in less or no irrigation in char lands where irrigation facilities is unavailable.

**Table 10. Farmer's (%) responses on opportunities of groundnut cultivation in char lands**

Opportunities of groundnut cultivation	Faridpur (n=30)	Jamalpur (n=30)	Kishoreganj (n=30)	All area (n=90)
Sandy Soil only appropriate for groundnut production	67	53	60	60
Less irrigation and fertilizer required compared to other crops	63	40	60	54
High profit due to low cost of cultivation	63	43	47	51
Cultivation without irrigation	53	27	60	47
High yield compared to input uses	50	43	37	43
Low labour requirement	43	50	40	44
Cash will get at a time	27	40	30	32

**Problems of groundnut cultivation in char lands**

There are several problems of groundnut cultivation in char lands pointed out by the farmers. Lack of irrigation facilities (34%), Low rate of seed germination (31%), Lack of cultivable land (29%), High value of seed (24%), Lack of cash money (21%) and Non-profit tenure system (22%) etc. were the major problems of groundnut production in char lands (Table 11).

**Table 11. Problems of groundnut cultivation responded by the farmers (%)**

Type of problems	Faridpur (n=30)	Jamalpur (n=30)	Kishoreganj (n=30)	All area (n=90)
Lack of irrigation facilities	40	37	27	34
Low rate of seed germination	30	37	27	31
Lack of cultivable land	33	30	23	29
High value of seed	27	20	27	24
Incident of flood	23	30	20	24
Lack of cash money	23	10	30	21
Non-profit tenure system	17	23	27	22
Birds destroy field groundnut	17	13	13	14
High price of fertilizer	13	20	17	17
Lack of training	7	17	10	11
Insect & pest attract	7	23	10	13

### Probable solutions to remove the problems

Farmers also mentioned some remedial measures to remove the above problems which were listed below. Farmers suggested that, availability of HYV seed (41%), interest free agricultural credit (18%), arrangement of irrigation facilities (23%), government assistance in flood protection (19%) and arrangement of training (14%) and government incentives to supply inputs in proper time (21%) will be helpful to remove the problems of groundnut cultivation (Table12).

**Table 12. Percent of farmer's responses on probable solutions**

Probable Solutions	Faridpur (n=30)	Jamalpur (n=30)	Kishoreganj (n=30)	All area (n=90)
Availability of HYV Seed	40	47	37	41
Interest free agricultural credit	17	17	20	18
Arrangement of irrigation facilities	23	20	27	23
Government assistance in flood protection	17	13	27	19
Arrangement of training	13	20	10	14
Government incentives to supply inputs	27	27	10	21

### Groundnut marketing system

#### Marketing chain

Marketing chain is the alternative root of products flow from producers to consumers (Khol and Uhl, 1980). Market chain analysis aims to provide information on profitability for the various agents along the market chain (Ferris *et al.*, 2001).

The following major marketing chain was found in the study areas:

Chain-i: Farmer > Faria > Arathdar > Paiker > Retailer > Consumer

Chain-ii: Farmer > Faria > Stockist > Bepari > Retailer > Consumer

Chain-iii: Farmer > Bepari > Arathdar > Paiker > Retailer > Consumer

Chain-iv: Farmer > Paiker > Retailer > Consumer

Chain-v: Farmer > Retailer > Consumer

#### Characteristics of actors involved in the groundnut marketing chain

**Faria:** Faria is a petty trader or small scale business that purchases groundnut from the producer in the village or in the local market and offer the same to the arathdar or bepari. Sometimes he sells his produce directly to the rural retailer or consumers.

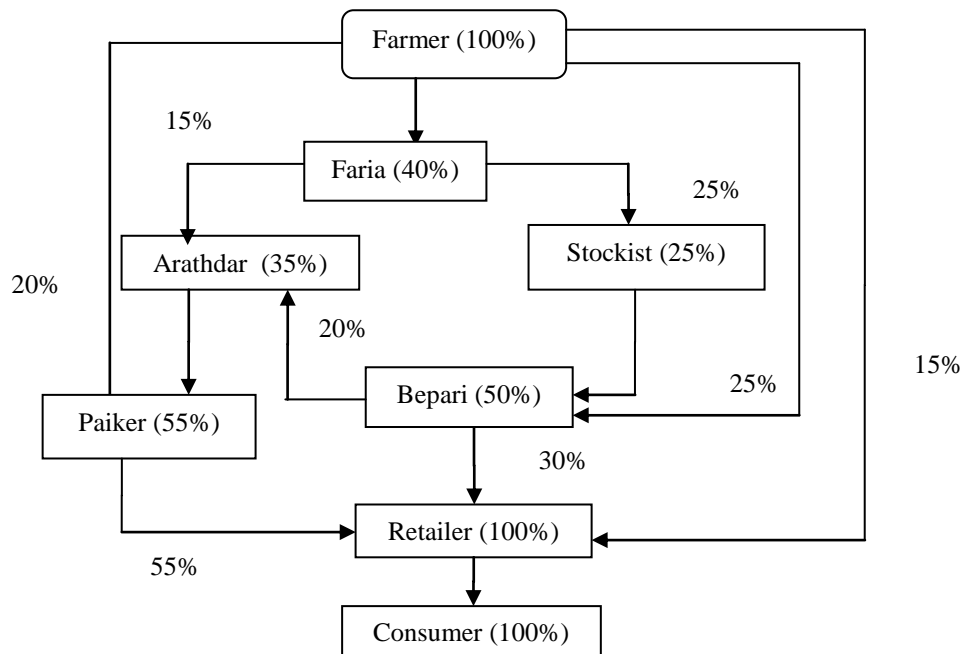
**Bepari:** Bepari is a professional wholesale traders who make his purchase from producer or faria at the local market, bring their consignment to the urban wholesale market and sell them to the paiker and retailer through arathdar (commission agent).

**Arathdar:** Arathdar is a commission agent who has a fixed establishment and operates between bepari and retailers, or between farmer and paiker, or between bepari and paiker, or between faria and bepari. They take commission from both of the parties but generally they do not follow any standard rule to take commission.

**Paiker:** Wholesaler in consuming area is known as paiker, who purchase from bepari through arathdar and sell those to the retailer or consumer.

**Retailer:** The retailer, the last link in the marketing channel, buys groundnut from arathdar or wholesaler/paiker and sells these to the consumer.

**Stockist:** Stockist are working in the producing area who purchase wet groundnut from the farmers or faria and dry it in their chatal and store for some period for higher prices.



**Fig. 1.** Marketing chain of groundnut in the study areas.

#### **Marketing cost of different actors involved in groundnut marketing**

The cost of marketing represents the cost of performing the various marketing functions and operations by various agencies involved in the marketing process

(Kohls and Uhl, 2005). In other words, the costs items, which are needed to move the product from producers to consumers, are ordinarily known as marketing cost. The per quintal marketing cost of groundnut of different actors like Faria for Tk.102, Bepari for Tk. 357, Arathdar for Tk. 55, Stockist for Tk.1388, Paiker for Tk.112 and Retailer for Tk.128 in all area. Transportation cost was the major cost item of all intermediaries which covers (25-38) % of the total cost. Marketing cost of stockist was the highest among the intermediaries. Weight loss and damage was the highest cost item for stockist which covers 80% of the total marketing cost. Because they purchase wet groundnut from farmers and dry it in their chatal. The other cost items of the actors were loading, unloading, packaging, Arathdar commission, khajna etc. The cost varied from area to area depending on coverage of distance (Table13).

**Table13. Marketing cost of different actors involved in the chain (Tk/qt)**

Cost component	Faria	Bepari	Arathdar	Stockist	Paiker	Retailer
Transportation	26	152	-	29	32	19
Loading	7	20	-	10	14	12
Unloading	6	11	-	7	6	7
Wages and salaries	-	-	21	-	-	-
Packaging	13	20	-	-	14	-
Commission	18	52	-	-	18	62
Accountant cost	-	-	9	-	-	-
Drying & Grading	-	-	-	52	-	-
Khajna	17	17	-	-	16	-
Wastage and damage/Weight loss	-	68	-	1111	-	-
Shop rent	-	-	6	-	-	-
Chatal cost	-	-	-	113	-	-
Storage cost	-	-	-	45	-	-
Market toll	-	-	-	-	-	12
sweeper	-	-	1	-	-	-
Electricity cost	-	-	5	4	-	-
Telephone/Mobile	6	9	5	6	6	7
Entertainment	9	8	8	11	7	9
Total	102	357	55	1388	112	128

#### **Marketing margin of different actors involved in the groundnut marketing**

Marketing margin is the difference between the price paid by the consumer and price received by the producers. Marketing margin has two components

marketing cost and net margin or profit. In broad sense, marketing margin is the difference between what is paid by the consumer and what is received by the producer. It is the price of all utility adding activities and functions that are performed by the intermediaries (Kohls and Uhl, 2005). It was revealed from the study that the net margin of the actors like Faria for Tk.232, Bepari for Tk.309, Arathdar for Tk.59, Stockist for Tk.1212, Paiker for Tk.254 and Retailer for Tk.305 per quintal. Among the intermediaries the stockiest added highest margin followed by Retailer, Bepari, Paiker, Faria and Arathdar (Table14). Because the stockist had done some marketing function such as drying the groundnut in their chatal and hold the quantity for higher price. On the other hand retailer has to sell small amount of groundnut for long period due to higher profit.

**Table14. Marketing margin of different stages of marketing chain (Tk/qt)**

Particulars	Faria	Bepari	Aratdhar	stokiest	Paiker	Retailer
A. Average sales price	5267	5933	-	4633	5733	6167
B. Average purchase price	4933	5267	-	2033	5367	5733
C. Gross margin (A-B)	334	666	114	2600	366	433
D. Marketing cost	102	357	55	1388	112	128
E. Net Margin (C-D)	232	309	59	1212	254	305

**Marketing cost (MC) and Marketing margin (MM) distribution among the actors in the chain**

Table15 shows the marketing chain wise marketing cost (MC) and marketing margin (MM) of different actors of groundnut. The highest marketing cost and margin was observed in the marketing chain–ii followed by chain-iii, chain-i, chain-iv and chain-v. Because the stockist incurred highest marketing cost and margin in the chain-ii (Table15).

**Table15. Marketing cost (MC) and marketing margin (MM) distribution among the actors**

Marketing chain	Faria		Bepari		Arathdar		Stockist		Paiker		Retailer		Chain Total	
	MC	MM	MC	MM	MC	MM	MC	MM	MC	MM	MC	MM	MC	MM
Chain-i	102	232	-	-	55	59	-	-	112	254	128	305	397	850
Chain-ii	102	231	357	309	-	-	1388	1212	-	-	128	305	1975	2057
Chain-iii	-	-	357	309	55	59	-	-	112	254	128	305	652	927
Chain-iv	-	-	-	-	-	-	-	-	112	254	128	305	240	559
Chain-v	-	-	-	-	-	-	-	-	-	-	128	305	128	305

### Marketing efficiency

Considering the above five chain on the basis of involvement of intermediaries it was found that marketing chain-v is the most efficient than other marketing chain followed by marketing chain-iv, chain-i, chain-iii and chain-ii. Marketing chain-v has single involvement of intermediary for this farmer get higher share of the consumer price (Table16).

**Table 16. Marketing efficiency of groundnut marketing (Tk/quintal)**

Particulars	Chain-i	Chain-ii	Chain-iii	chain -iv	Chain-v
1. Price received by the Farmers (FP)	4933	4933	5267	5367	5733
2.Total marketing cost (MC)	397	1975	652	240	128
3.Total net marketing margin (MM)	850	2057	927	559	305
4. Marketing efficiency {FP/(MC+MM)}	3.95	1.22	3.34	6.72	13.24

### Marketing problems identified by the traders

The intermediaries were faces different marketing problems during their business. Eighty two percent farmers were suffered lack of cash capital during their business. Seventy five percent farmers had to paid high charge for transportation followed by high interest rate (65%), unstable price (58%) and lack of storage facilities (55%) (Table17.).

**Table 17. Marketing problems identified by the traders**

Particulars	Percent of traders			
	Faridpur	Jamalpur	Kishoreganj	All area
Lack of cash capital	82	80	84	82
High transportation cost	72	78	75	75
High rate of interest	65	62	68	65
Unstable price	61	55	58	58
Lack of storage facilities	61	54	50	55

### Probable solutions identified by the traders

The traders were mentioned some options to remove the above constraint of groundnut marketing in the study areas. These were arrangement of institutional credit with low interest rate (80%), government incentives to reduce transportation cost (67%), collateral free credit (45%) and arrangement of storage facilities (73%) etc. (Table-18).

**Table 18. Probable solutions suggested by the traders**

Probable solutions	Percent of traders			
	Faridpur	Jamalpur	Kishoreganj	All area
Credit with low interest rate	86	80	74	80
Government incentives to reduce transportation cost	65	69	68	67
Collateral free credit	52	43	40	45
Arrangement storage facilities	72	76	71	73

### Conclusion and Recommendations

The study discussed the details of groundnut production and marketing in char lands of the study areas. Char lands are not suitable for maximum crop production and most of the char lands were remain fallow half of the year or used for single crop. Groundnut was profitable crop in char lands because it requires fewer amounts of fertilizer, pesticides and irrigation compared to other crops. The study revealed that per hectare groundnut production was profitable than its competitive crops wheat and sesame. It has also some opportunities for groundnut production in char lands such as sandy soil, less water and fertilizer requirement, high yield compared to input uses, low labour requirement etc are favorable to farmers for groundnut cultivation. Most of the farmers used local or traditional variety for groundnut cultivation in char lands. Maximum production of groundnut was consumed and marketed locally and rest of the production was kept by farmers as a seed. The study also identified five major marketing chain of groundnut marketing. The actors of the groundnut marketing chain were Faria, Bepari, Arathdar, Stockiest, Paiker and Retailer. A good amount of marketing margin was received by the actors at different stages of marketing chain. The study also showed the marketing margin distribution among the actors of the marketing chain as well as efficiency of the marketing chain. The longer the marketing chain the lower the producer share as well as marketing efficiency. The study also identified some production and marketing problems of groundnut cultivation and also suggested some policy options which are recommendation of the study.

So the recommendations of the study were farmers used less inputs to groundnut production in char lands so there is a opportunities to increase groundnut production by using adequate inputs like irrigation, fertilizer, pesticides etc. Farmers also need HYV seed for groundnut production because survey report revealed that 67% farmer used Dhaka-1 and local variety for groundnut production. Interest free agricultural credit, irrigation facilities and government incentives to seed, fertilizer and pesticides in proper time will be helpful to remove the problems of groundnut cultivation. Modern storage facilities should



be developed for short time storage of groundnut at important assemble center. Efficient marketing system should be developed by eliminating unnecessary middlemen in the marketing chain. Transportation facilities should be improved in the char areas so that the rickshaw, van, truck and other vehicles could move easily. Boat, cargo should be initiated in the river way as possible; it would helpful to reduce transportation cost largely.

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