

EXISTING VALUE CHAIN ASSESSMENT OF DRY CHILLI MARKETING IN SELECTED AREAS OF BANGLADESH

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Abstract

The study was conducted in two chilli growing districts Jamalpur and Bogra to examine the value chain and value addition at different level. From two districts (Jamalpur and Bogra) 114 respondents consisting of 60 chilli growers and 54 chilli traders were selected as a sample size. It was observed from the study that the main actors of dry chilli marketing was chilli producer, faria, bepari, arathdar, paiker, company agent, local processor/miller, agro-based industry, retailer, and consumer. The net return of dry chilli producer was Tk. 102854 per hectare. Value addition of faria, bepari, paiker, retail (dry) was Tk 544, Tk 1333, Tk734, Tk 1397 per quintal, respectively. The overhead processing and marketing cost and value addition of agro-processing industry was Tk.3522 and Tk.6728 per quintal of dry chilli which was the highest.

Keywords: Dry chilli, Value chain and Value addition.

Introduction

A value chain consists of all stages of a production process as well as of the interaction among these stages. The production process starts at the stage of input supply that covers production, processing, marketing and ends with the consumption of a certain product. It can be seen as the hard skill of a value chain. According to Gereffi (1994) besides the technical structure, also the actors of a value chain as well as the input-output, and the territorial structure define a value chain (Christen Schipmann, 2006).

Since Chilli is a cash crop grown by the farmers for both sale and consumption, its production greatly depends on its marketing facilities. If the farmers fail to get proper prices, they are likely to discontinue its production, which will adversely affect the economy. Chilli also has a potential export market. At present, its export remains insignificant because of restriction imposed on export in view of its high domestic demand. However, the export potentiality of chilli should be fully exploited in the interest of the economy. If the profitability of this crop can be guaranteed to the farmers through effective government policies, it is likely that they will be encouraged to gear up its production both for domestic and export markets.

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Chilli, an important spice crop of Bangladesh is widely grown both in Kharif and Robi seasons. It is one of the most important commercial crops of Bangladesh. It is an indispensable item in the kitchen, as it is consumed daily as a condiment in one form or the other. Currently chilli is used throughout the world as a spice and also to make beverages and medicine. Chillies are rich in vitamins especially in vitamin A and C. They are also packed with potassium, magnesium and iron. Chillies have long been used for pain relief as they are known to inhibit pain messengers, extracts of chilli peppers are used for alleviating the pain of arthritis, headaches, burns and neuralgia. (MOA, 2012). Generally growers sell chilli directly but real return can come only from processed products. Hence, farmers must be educated in the processing of chilli for value addition. Value-chain analysis looks at every step a business goes through, from raw materials to the eventual end-user. The goal is to deliver maximum value for the least possible total cost (Investopedia, 2011). Objective of the study was made to examine the value chain and value addition of dry chilli in Bangladesh.

Methodology

The study was conducted in two upazilas of each district on the basis of intensive chilli cultivation area. Multi-stage stratified simple random sampling techniques were followed for the selection of upazila, block and market for the collection of data. Then the populations of block and market were grouped into different strata like farmer, fariya, bepari etc and the simple random sampling technique was used for drawing the desired sample from each strata. From two districts (Jamalpur and Bogra) 115 respondents consisting of 60 chilli growers and 54 chilli traders were selected as a sample size. At each district, production and market information were collected from 30 farmers, 4 input dealers, 5 fariyas, 5 beparias, 4 paikers, 5 retailers, 2 arathdars, 2 company agents. For the present study the data were collected during the months of August and September 2013. Finally to complete the study one agro processing industry (BD foods Ltd.) was selected from Gazipur district.

Cost and return analysis

Following profit equation was employed to assess the profitability of chilli production.

Net return/ Value addition of producer

$$\Pi = P_c \cdot Q_c - (TVC + TFC)$$

Where, Π = Profit of producer per hectare

P_c = Per unit price of Dry Chilli (Tk/kg)

Q_c = Quantity of Dry Chilli (kg/ha)

TVC = Total variable cost of Chilli producer

TFC = Total fixed cost of Chilli producer

Value Addition by traders

Value Addition = Gross margin – Marketing cost

Gross Margin = Sale price – Purchase price

Results and Discussion

Value chain of dry chilli:

Marketing chain of green chilli was the alternative root of products flow from producers to consumers (Kholis and Uhl, 1980). The value chain described the full range of activities which are required to bring a product or service from conception, through the different phases of production and delivery to final consumers (Porter, 1980; Kapilinsky and Morris, 2000).

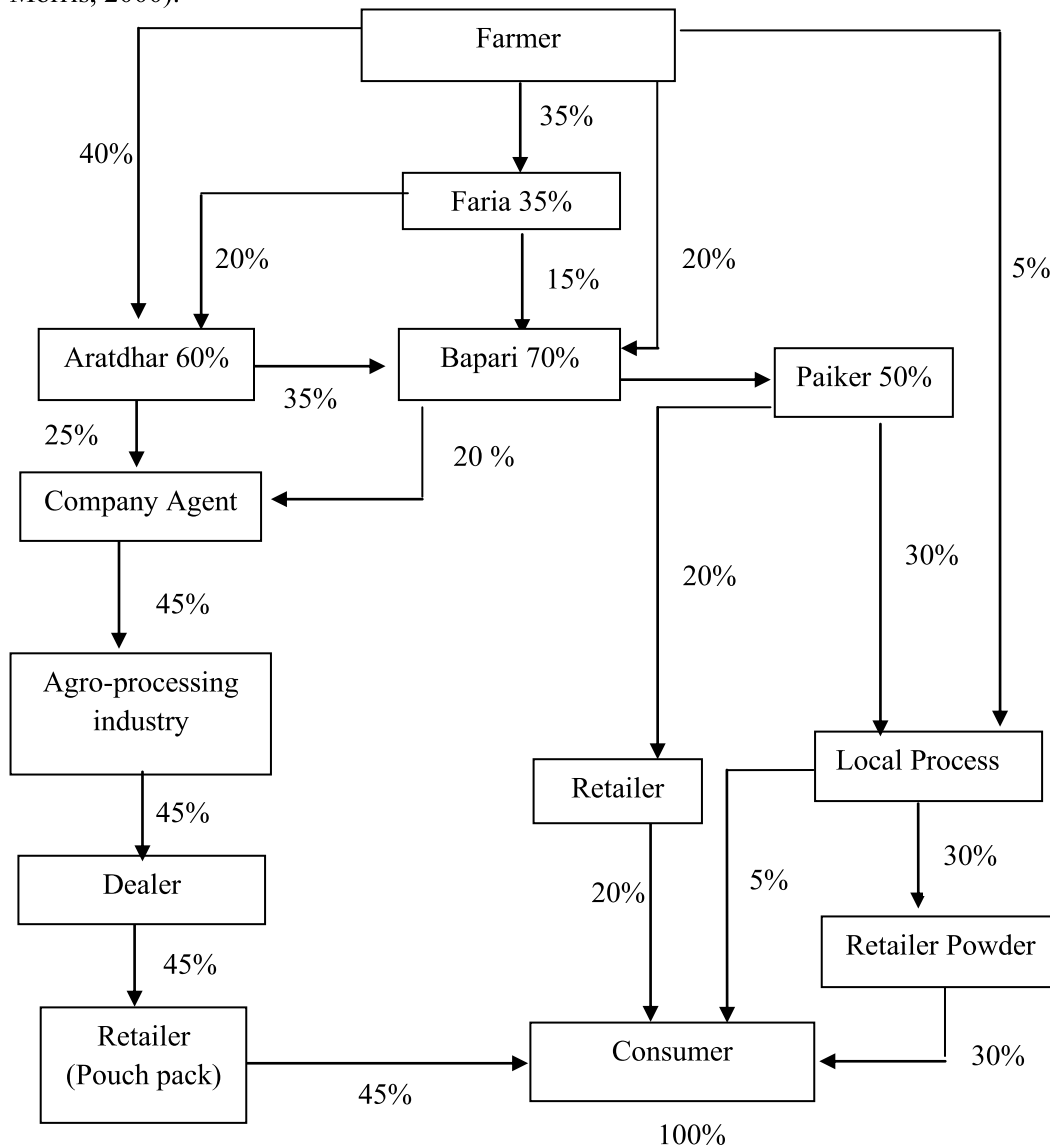


Figure 1. Value Chain flow diagram of dry chilli marketing

The following Value chains were identified in case of green chilli marketing (Figure 1)

Value chain-i: Farmer > Arathdar > Bepari > Paiker > Local processor/Miller > Retailer (powder)> Consumer

Value chain-ii: Farmer> Faria > Arathdar > Bepari > Company agent > Agro-processing Industry > Dealer > Retailer (Pouch pack) > Consumer

Value chain-iii: Farmer > Arathdar > Bepari > Company agent > Agro-processing industry > Dealer > Retailer (Pouch pack) > Consumer

Value chain-iv: Farmer > Faria > Bepari > Paiker > Retailer (dry) > Consumer

Value chain-v: Farmer > Faria > Bepari > Paiker > Local processor/Miller > Retailer (Powder) > Consumer

Value chain-vi: Farmer > Faria > Arathdar > Company agent > Agro-processing Industry > Dealer > Retailer (Pouch pack) > Consumer

Value chain-vii: Farmer > Local processor/miller > Consumer

Actors involved in dry chilli value chain

The dry chilli value chain consists of the chilli producer, faria, Bepari, Arathdar, Paiker, Company agent, Local processor/Miller, Agro-based industry, retailer, Consumer.

Faria: Faria is a petty trader or small scale business who purchases dry chilli 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 trader who make his purchase from producer at the local market, bring their consignment to the urban wholesale market and sell them to the paiker and retailer through arathdar(commission agent).Sometimes he buys chilli from the faria in local market.

Arathdar: Arathdars 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 dry chilli from bepari through arathdar and sell those to the retailer or consumer.

Company agent: Company agents are the selected agents of the agro-processing industry in the chilli producing area. They perform most of the marketing activities. A company agent bought chilli directly from the arathdar or bepari on the spot on the basis of the purchase order he has received from the company.

Local processor/Miller: Miller is the owner of the dry chilli mill. Sometimes they act as wholesaler of the powder and also milling the dry chilli of farmer, retailer and other intermediaries. They take a milling charge from the respective people.

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

Value addition of dry chilli

Cost of dry chilli cultivation

The value chain analysis of dry chilli indicated that the cost of production of dry chilli was Tk 1,51,410./ hectare and with an average yield of 2.16 MT/ hectare; which indicated to a production cost of Tk. 70.22/kg. The conversion ratio of ripe chilli to dry chilli was 3.33:1. The average per quintal marketing cost of dry chilli was Tk.131.25 at farm level (Table 1, 2, 3, 4, and 5).

Table 1: Per hectare input use pattern of green chilli production in the study areas

Items	Unit	Jamalpur (n=30)	Bogra (n=30)	All Area (n=60)
Green Chilli				
Human Labour				
Family	Man-Day	56	60	58
Hired	Man-Day	242	268	255
Seed/Seedling	Kg/nos/ha	4	3.5	3.75
Manure	Kg/ha	5270	12428	8849
Fertilizer				
Urea	Kg/ha	271	305	288
TSP	Kg/ha	201 (n=21)	239 (n=19)	220(n=40)
MP	Kg/ha	183 (n=21)	112 (n=19)	147.5(n=40)
Gypsum	Kg/ha	0	125	62.5
Zinc	Kg/ha	0	12	6
Boron	Kg/ha	0	10	5
DAP	Kg/ha	192 (n=9)	187 (n=11)	189.5(n=20)
Irrigation	Tk/ha	9014	7056	8035
Insecticides	Ta/ha	3703	4116	3909.5
Net and Bamboo stick	Ta/ha	9056	9291	9173.5
Dry chilli				
Human Labour(Drying)	Man-Day	35	37	36

Source: Field Survey (n indicates no. of observation)

Table 2: Cost of production of green chilli in the study areas (Tk/ha)

Cost component	Jamalpur (n=30)	Bogra (n=30)	All Area(n=60)
A. Variable cost			
Hired labour	48400	53600	51000
Land preparation	8376	10428	9402
Seed/Seedling	2800	2600	2700
Mannure	3690	9321	6505.5
Fertilizer			
Urea	5691	6100	5895.5
TSP	5628 (n=21)	6692 (n=19)	6160 (n=40)
MP	2928 (n=21)	1680 (n=19)	2304 (n=40)
Gypsum	0	875	437.5

Zinc	0	2280	1140
Boron	0	1100	550
DAP	5180 (n=9)	5049 (n=11)	5114.5 (n=20)
Irrigation	9014	7056	8035
Insecticides	3703	4116	3909.5
Fencing cost	1646	2360	2003
Bambo stick	7410	6586	6998
Interest on operating capital	2786	3196	2991
Total variable cost	107252	123039	115145.5
B. Fixed cost			
Family labour	11200	12000	11600
Land use cost	14970	19960	17465
C. Total cost(A+B)	133422	154999	144210.5

Source: Field Survey (n indicates no. of observation)

Table 3: Cost of dry chilli production (Tk/ha)

Cost item	Jamalpur	Bogra	All Area
Green chilli Production cost(TC)	133422	154999	144210.5
Ripe Chilli Drying cost	7000	7400	7200
Total cost of dry chilli production	140422	162399	151410.5

Source: Field Survey

Table 4: Per hectare yield, gross and net return of dry chilli in the study areas

Particulars	Jamalpur	Bogra	All Area
Yield (kg)	2084	2228	2156
Price (Tk/ kg)	120	116	118
Gross return (Tk/ha)	250080	258448	254408
Total cost (Tk/ha)	140422	162399	151410.50
Net return(Tk/ha)	109658	96049	102853.50
BCR	1.78	1.59	1.67
Cost of dry chilli (Tk/kg)	67.38	72.89	70.22

Source: Field Survey

Table 5: Farm level marketing cost of dry chilli (Tk/qt)

Cost component	Jamalpur	Bogra	All Area
Transportation	40	42	41
Market toll	24	22	23
Weighing cost	56	60	58
Sweeper	2.5	3	2.75
Personal expenses	8	5	6.5
Total	130.5	132	131.25

Source: Field Survey

Cost of value addition for dry chilli incurred by different intermediaries

Transportation cost was highest among the cost item which covers 7% of the total cost except milling charge of the retailer (powder). The transportation cost varied from area to area depending on distance coverage. The per quintal average marketing cost of dry chilli in different actors like faria for Tk.256, bepari for Tk.567, arathdar for Tk.109, paiker for Tk.266, retailer (dry) and retailer (pouch pack) for Tk.103 and retailer (powder) for Tk.2376. The marketing cost of company agent, agro-industry (Bd Foods Ltd) and local processors/miller was Tk.1192, Tk.3522 and Tk.507 per quintal respectively. Highest marketing cost was obtained by Agro-processing industry (BD Foods Ltd). The next highest marketing cost was obtained by retailer (powder) due to its high milling charge (Table 6).

Value addition of different actors involved in the chain

It was revealed from the study that the value addition of the faria, bepari, paiker, retailer(dry), retailer (powder), company agent, agro-processing industry (BD foods Ltd.) and retailer (pouch pack) were Tk.544, Tk.1333, Tk.734, Tk.1397, Tk.3124, Tk.2108, Tk.6728 and Tk.3397 per quintal respectively. The per quintal value addition of local processor/miller and arathdar were Tk.1743 and Tk.156.25 respectively. Among the intermediaries agro-processing industry (BD Foods Ltd) added highest value by processing of dry chilli and followed by retailer (pouch pack), retailer (Powder), company agent, local processor/miller, retailer (dry), bepari, piker, faria and arathdar respectively (Table 6).

Table 6: Value Addition of different intermediaries involved in the chain (Tk/qt)

Particulars	Sale price	Purchase price	Gross Margin	Marketing Cost	Value addition
Farmer	11800	0	0	0	0
Faria	12600	11800	800	256	544
Bepari	14500	12600	1900	567	1333
Paiker	15500	14500	1000	266	734
Retailer(Dry)	17000	15500	1500	103	1397
Company Agent	17500	14200	3300	1192	2108
Agro-processing industry	27750	17500	10250	3522	6728
Retailer(pouch pack)	33000	29500	3500	103	3397
Local processor/Miller	0	0	2250	507	1743
Retailer(powder)	22000	16500	5500	2376	3124
Arathdar	0	0	265.5	109.25	156.25

Source: Field Survey

Conclusion

The study revealed that dry chilli marketing was profitable and per hectare net return was Tk.102854 and BCR was 1.67. Chilli production and marketing faces various problems such as production risk by natural hazards, price fluctuation, market control by the fixed traders, lack of storage facilities, traditional method of storage for dry chilli etc. In the study areas chilli has a potential export market. So government should take proper initiative to solve those problems.

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