

**Vegetables in Bangladesh: A Study on Some Selected Vegetables Markets in
Dhaka.**

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**Vegetables in Bangladesh: A Study on Some Selected Vegetables Markets in
Dhaka.**

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Letter of Transmittal

November 30, 2016

To

Dr. Ashoke Kumar Ghosh

Associate Professor

Department of Development and Poverty Studies

Sher-e-Bangla Agricultural University

Subject: **Submission of internship report.**

Dear Sir,

I am a student of MBA (Agribusiness) Faculty of Agribusiness Management. It is my pleasure to submit my internship report on **“Vegetables in Bangladesh: A Study on Some Selected Vegetables Markets in Dhaka.”**

I have tried my best to present necessary information and findings as clearly as I could within the time and resource available. I hope that the information presented in this report will provide a clear picture about the production and marketing of Bangladesh. If you have any inquiry regarding this study, I will be glad to respond.

Sincerely Yours,

Md. Salim Reza

Reg. No. 08-02764

Session: Jan-June /2013

Faculty of Agribusiness Management

Sher-e-Bangla Agricultural University



CERTIFICATE

This is to certify that the internship report entitled, *Vegetables in Bangladesh: A Study on Some Selected Vegetables Market in Dhaka*, submitted to the Faculty of Agribusiness Management, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **MASTER OF BUSINESS ADMINISTRATION in AGRIBUSINESS**, embodies the result of a piece of bona fide internship work carried out by *MD. SALIM REZA* Registration No. 08-02764 under my supervision and guidance. No part of the internship report has been submitted for any other degree or diploma.

I further certify that such help or source of information, as has been availed of during the course of this investigation has duly been acknowledged.

Dated: November, 2016

(Associate Prof. Dr. Ashoke Kumar Ghosh)

Place: Dhaka, Bangladesh

Supervisor

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November, 2016

The author

Abstract

Vegetables have a important for its commercial and nutritional value in the world as well as Bangladesh. The study was conducted aiming at examining the marketing system of Cauliflower, Cabbage, Radish, Brinjal and Bottle gourd in selected area of Dhaka. Samples were purposively selected in order to meet the objectives. The total sample size was 40 respondents including 5 *Bepari*, 5 *Aratdar* and 30 retailers that was collected from Shewrapara, Krishi Market and Town Hall Market. Primary data were collected through face to face interview with the intermediaries by the researcher himself during the period from the month of September to November, 2016. Secondary data were collected from various books, journals and government publications. In the study, we find the purchase and selling price difference in those selected market. We also find that, retailer gets the highest margin from Mohammadpur Krishi market and that is tk. 2599.6 per day. Total cost is higher in Town hall market and that is tk.1900 per day, but maximum net profit gets the retailer from shewrapara bazaar. The *Bapari* of Chuadanga district get maximum net profit per day. From these selected vegetables, Brinjal has the maximum price in compare with other vegetables and it provides maximum margin to the middleman. The farmers usually sold their produce to local market and *Bepari*. Pricing of the product was mostly done through open bargaining by all the intermediaries. *Aratdar* was the commission agents in vegetables market at the study area. Both farmers and intermediaries face many problems in marketing of the vegetables. The major problems faced by them included lack of transportation and storage facilities, low marketing price at harvest period, lack of credit facilities, lack of infrastructure facilities, lack of adequate market information, high rate of market tolls and commission, price fluctuation and low price, problem of credit sale, problems of strike and *hartal*. Measures suggested for solving the above mentioned problems were: easy supply of institutional credit, supplying quality inputs, and improvement of transportation, storage and communication system, reducing the uncertainty of price, and bringing political stability in the country.

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1.1 Introduction:

Vegetables are very important for human diet, especially for vitamins and minerals. Now-a-days, we can't think of Bangladeshi dish without vegetables. Per capita consumption vegetables in Bangladesh is only 180 gm/day against a minimum requirement of 400gm/day (FAO/WHO 2003; BBS 2015), which manifests a poor dietary status of the people in the country. Presently, Bangladesh produces around 11,223 metric tons of vegetables (including potato) per year, respectively (BBS 2015).

In Bangladesh, the most valuable and important vegetables grow in winter season. Due to huge production of vegetables in winter season, the price of vegetables becomes comparatively low. Since Bangladesh does not have any established vegetable marketing and price regulatory systems, primary producers are frequently suffered from lack of releasable price for their product. Moreover, the price of vegetables varies from region to region and market to market. Appropriate marketing channels and the market actors are important in timely delivery of vegetables from the producers to the consumers. But there is no proper systematic channel in the markets as a results price of vegetables are not ensured in favor of farmers and consumers.

Different markets have significant prices variations for the same vegetables are found even within five kilometers of distace. Price also differs significantly at different times on in the same day in the same market. For example in the evening price is differed from the morning price in the same market. There are no fixed price determination factors in vegetable markets. Variation in supply and demand is prime cause of price variation. Although ultimate price is determined through the bargaining between buyers and sellers. If demand is high and supply is low obviously the price will go up and vice-versa. It is also true for seasonal variation. But our main concern is how effective Supply Chain Management can reduce the fluctuation of price of vegetables and ensure the reasonable price for the producers of vegetables.

1.2 Vegetables production in Bangladesh:

More than 100 types of vegetables of indigenous and exotic origin are grown in Bangladesh. Based on the growing season, vegetables are categorized as summer/rainy season vegetables, winter season vegetables, and all-season vegetables. Of the summer vegetables, various

cucurbits, vegetable cowpea, hyacinth bean, stem amaranth, several aroids and Indian spinach are predominant.

Winter vegetables include potato, tomato, cabbage, Chinese cabbage, cauliflower, eggplant, carrot, spinach, bottle gourd, bush bean and radish. Crops like okra, heat-tolerant tomato, eggplant, carrot, spinach, many leafy vegetables and small onion are grown all year round. Summer vegetables are cultivated during the monsoon season from May to October. On the other hand, winter vegetables are grown from November to April. The production of vegetables is higher during winter (60 to 70%) and most districts produce marketable surplus during that season.

1.3 Trends in Vegetable Production:

Vegetable production in Bangladesh has increased between 1984 and 2014, with an average annual growth rate of 4.8%. Most of this growth can be attributed to area expansion (4.6%) and only a small share to yield increases (0.9%). Current yields are 6.8 ton/hectare, as compared to 5.7 t/ha in 1984. However, it is misleading to discuss yields for aggregates of vegetables, as the mix of crop within the aggregate group may have changed significantly over time. Total production in 2003 was 1.74 million ton. The share of area under vegetable cultivation in total arable land has nearly doubled from 1984 to 2014, from 1.9% up to 4.6%. A relatively stark expansion in area can be observed between 1998 and 1999. This increase has also translated into greater per capita availability, which increased from approximately 11 to 12 kg. Altogether, however, domestic vegetable availability is still far from fulfilling domestic demand, which explains the large trade deficit for horticultural products. (Source: FAOSTAT data, 2004)

1.4 Vegetables marketing in Bangladesh:

Vegetable and fruit consumption have been growing rapidly in recent years in Bangladesh, as the economy grows and consumers diversify their diets.

This trend is likely to continue in the future. Furthermore, domestic agricultural markets have undergone modernization due to rapid urbanization, agro-industrialization, rise of super markets and trade liberalization, and the procurement system is gradually shifting from traditional

wholesale markets toward vertically coordinated supply chains. At present, Bangladesh's agricultural marketing system is often accused in the popular press of being inefficient. In the case of vegetables, *Aratdars and Beparis* have been found to be critical players in the market. Their margin was between 17-18% of the retail value and their return on working capital was found to be exceptionally high. Different marketing channels have been identified by several authors. One of the most common channel is *Growers-Bepari-Aratdar-Retailers-Consumers*. The price of vegetables is apparently higher at the retailers' level. Most of the surveys shows that the price of vegetables are increased at the retailers level. The intermediaries are very often blamed to take the lion's share of profit.

At present, Bangladesh's agricultural marketing system is often accused in the popular press of being inefficient. In the case of vegetables, *Aratdar, Bepari* and wholesaler have been found to be critical players in the market. Their margin was between 17-18% of the retail value and their return on working capital was found to be exceptionally high (NFPCSP 2011).

Inefficient Supply Chain Management systems reduce demand from consumers and participation by farmers, who face significant challenges in seizing opportunities to participate in growing markets for vegetables. Marketing constraints include both high costs and risk. High marketing costs often stem from poor transportation networks

(Hossain *et al.* 2006), lack of market information and sometimes from lack of competitiveness in the market. Production of vegetables can be very susceptible to pest outbreaks, and spoilage after harvest is an important problem due to highly perishable nature of most vegetables. These factors in turn can lead to highly unstable prices. If these constraints can be removed, farmers will earn more by specializing in crops for which they have a comparative advantage. Presently, the crying need is the generation of reliable up-to-date data on the actual costs and returns of the market intermediaries. The outputs of the report will fill up the information gap and indeed, contribute greatly to find out the most efficient marketing options in order to formulate a meaningful national policy to improve the fragile supply chain management systems of vegetables in Bangladesh.

1.5 Importance of winter vegetables in Bangladesh :

Vegetables crops assume great importance in Bangladesh in view of the serious problem of malnutrition that persists in this country. Majority of the population in Bangladesh suffer from severe malnutrition which has a negative effect on the development of the physical and mental growth. Severity of malnutrition and iron deficiency (anemic) is the highest among the children and female member of all age groups. Over 30,000 children become blind each year due to severe vitamin A deficiency. The average diet in the Bangladesh is deficient in almost all of the major nutrients, especially vitamins (vitamin A riboflavin, vitamin C and minerals).Vegetables are rich in protein and calcium sources. Vegetable are not merely items of food, they are also commodities for domestic and international trade and raw materials for the processing industry. Vegetables occupy 16% of the total cultivated land area of Bangladesh (BBS, 2006).

Vegetables, like fruits, are low in calories and fats but contain good amounts of vitamins and minerals. All the Green-Yellow-Orange vegetables are rich sources of calcium, magnesium, potassium, iron, beta carotene, vitamin B-complex, vitamin-C, vitamin-A, and vitamin K.

As in fruits, vegetables too are home for many antioxidants. These health benefiting phyto-chemical compounds firstly; help protect the human body from oxidant stress, diseases, and cancers, and secondly; help the body develop the capacity to fight against these by boosting immunity.

Additionally, vegetables are packed with soluble as well as insoluble dietary fiber known as non-starch polysaccharides (NSP) such as cellulose, mucilage, hemi-cellulose, gums, pectin...etc. These substances absorb excess water in the colon, retain a good amount of moisture in the fecal matter, and help its smooth passage out of the body. Thus, sufficient fiber offers protection from conditions like chronic constipation, hemorrhoids, colon cancer, irritable bowel syndrome, and rectal fissures.

Recently, vegetable nutrition has widely drawn the attention of fitness conscious as well as food scientists alike for their proven health benefits. Majority of day-to-day used vegetables are very low in calories, and saturated fats. Just for example Celery holds just 16 calories per 100 g. There is a long list of vegetables whose calorie is less than 20 per 100 g such as bottle gourd, bitter

melon, cabbage, chinese cabbage, bok-choy, eggplant, endive, spinach, summer squash, swiss chard, etc. Scientific studies have shown that these low-calorie but nutrient-rich foods help human body stay fit, and free from diseases.

Furthermore, human body spends a considerable amount of energy for the metabolism of foods, which is known as BMR or Basal metabolism rate.

1.6 Price Fixation of vegetables in Bangladesh:

Method of price setting is also an important aspect in marketing of vegetables. Myint (2003) reported different methods of price setting in vegetables market. Farmers generally rely on the nearest town, bus or boat drivers, extension workers, and neighboring farmers of the same village come from the nearest town market. Another information source is the agent who comes to village to buy a crop. Farmers compare prices offered by the agents and the primary collectors. Farmers choose the best trading partners based on honesty and reasonable prices offered to them. The wholesalers find out daily market information in the produce exchange centre. They also exchange market information of export demand, prices in major producing areas and supply situation. For price setting, traders gather information from their regular trading partner by telephone including cell phones. In Bangladesh, the common sources of market information are the personal visit to market, other farmers, traders, contractors, extension workers, and market information services (Rahman 2003). In the present days, cell phone is mainly used as an important source of market information.

1.7 Justification of Present Study:

Every year Bangladesh produces a huge amount of vegetables. A relatively high yield and low cost of production of the vegetables with the introduction of modern technologies have perhaps provided an incentive to the farmers to increase the area as well as production of vegetables and thereby raise the marketable surplus of vegetables in Bangladesh. But due to lack of proper marketing facilities farmers do not get fair price even sometime they cannot afford to recover production cost. The growers have to sell major part of their produces immediately after harvesting at a very low price due to lack of storage facilities and cash need of the farmers.

Farmers are compelled to spoil vegetables in the most vegetables growing areas of Bangladesh. But it has been observed that in some areas vegetables price is very high during off season and even in the peak season. If farmers fail to sell their produce at an incentive price they are likely to discontinue its production, which may adversely affect the economy. Due to excessive supply chain involved in vegetables marketing, the consumer buy it comparatively at higher price & most of the market margin gain by the middlemen . So it is very important to make the market efficient for the sake of both farmers and consumers. The findings of this study can be used for identifying the various issues related to marketing problems of vegetables and may help to identify probable solution. The present study has been designed to examine the price variation of vegetables from local market to regional market, the marketing actors in kawran bazaar, Mohammadpur, Shawrapara, Mohammadpur krishi market with a view to assessing the overall performance of the growers by analyzing production cost of farmers, profitability, marketing cost and the existing problems in potato marketing. Finding may also help the producers, intermediaries (traders) and policy makers in the formulation of viable policies regarding production and marketing of potato in Bangladesh.

1.8 Limitations of the Study:

1 Time Limitation:

There are so many vegetables grow in the country and each vegetable as a number of varieties. For the time constraint of the study, it is not possible to get the information about all of the vegetables. That is why only five vegetables are taken for the study which will represent the whole vegetables.

2 Lack of Experience:

The researcher had no previous experience about the survey which makes the study a little bit complex.

3 Authenticity of Data:

A large number of secondary data are used in the study. But the validity of all data is not checked due to time constraint or for other constraints. So there may have some error in the data.

4 Sample size Problem:

Since the number of the total population is unknown, random sampling could not be used for the study. Convenience sampling is used for the study which may have biasness.

5 Lack of willingness of Intermediaries to Provide Information:

Most of the intermediaries are not interested to provide information willingly. Besides all of us know that there are so many chadas are involved in the business if somebody wants to do the business without any harassment. But in many cases the business men are not interested to acknowledge this for an unknown fear.

6 Too Many Chains in the Marketing:

There are too many chains in the marketing system some of which are too long with many middlemen.

2.1 Review of Literature:

The main theme and salient features of this chapter is to provide a selected review of the recent and past research works which are related to this study. Many studies have been conducted on marketing of different agricultural commodities; a few studies are available on marketing aspects of brinjal, Radish, cucurbit, cauliflower, cabbage in Bangladesh, despite the importance of these vegetables in the economy. A number of research studies had examined only production part or pest control part, but analysis of marketing system of these vegetables is not undertaken covering all the activities related with input supply to the distribution of product to the final consumer and price analysis. However, some important studies on different aspects directly or indirectly related to the present study such as socioeconomic characteristics, methodological similarities, marketing system, problems of intermediaries etc. are reviewed. Some of the related findings of research carried out in this country or elsewhere are also reviewed in this section.

Sangeetha and Banumathy (2011) conducted an economic analysis of major vegetables in Cuddalore district of Tamilnadu, India. The result of the regression analysis showed that there was a significant and negative relation between current price and current market arrivals of tomato and brinjal. Market arrivals played an important role in fixing current wholesale price rather than lagged price.

Another research was conducted by Barman (2008) to examine the efficiency of supermarket and conventional marketing channels of winter vegetable in Dhaka city. The average marketing cost of vegetable per tone was Tk. 481 and Tk. 453 respectively in supermarket and conventional market. The corresponding net margins were Tk. 11,988 per tone and Tk. 7,544 per ton respectively. The result indicated that the margin of super market was higher than conventional market. Marketing channel was more efficient is supermarket. The market efficiency of super market in conventional, Shepherd's and Acharya's method was 13.45, 78.95 and 4.87 respectively. It was 9.33, 78.93 and 7.46 respectively in conventional market.

Ferdous (2007) conducted a study on production and marketing of brinjal in selected area of Mymensingh. The researcher highlighted the basic information on socio-economic characteristics, profitability, marketing cost and margin, price variation and problems of farmer and different intermediaries. Per hectare gross return and net return were calculated Tk. 1,08,200

and Tk. 16,190 respectively. Benefit Cost Ratio of brinjal was 1.18. The study revealed that the marketing cost per quintal of brinjal for *Paikar*, *Arardar* and retailer were Tk. 65, Tk. 10 and Tk. 71 respectively. Profit per quintal of brinjal was Tk. 35, Tk. 71 and Tk. 54 respectively for *Paikar*, *Aratdar* and retailer. The average marketing margin was Tk.92 per quintal. The seasonal price variation was highest in the month of November and lowest in the month of January.

Myint (2003) reported different categories of market actors in fruits and vegetables supply chain in Myanmar. The market actors are farmers; primary collectors (village brokers); collectors; town wholesalers and large scale wholesalers; market wholesalers; market retailers; transport brokers; and exporters. In the case of potato, two different marketing channels (traditional and cold stored) were reported by Hossain and Miah (2009). In the case of traditionally-stored potatoes, Bepari and Faria purchased potatoes from the growers.

Although many other researcher conducted research on the causes of seasonal price variation of vegetables, Supply chain of vegetables, Price fluctuation of vegetables, but none of them highlighted about the **“Vegetables in Bangladesh: A study on some selected vegetables Markets in Dhaka”**.

Considering this situation following objectives are undertaken for present study;

2.2 Objectives of the study:

1. To identify the regional price variation of different vegetables.
2. To identify the actors involved in vegetables and value addition in different levels of marketing.
3. To provide some suggestions to improve the present market situation.

3.0 Nature of the Study

This research is of exploratory type. Different studies have also been conducted on the causes and remedies of price variation for different types of vegetables. But no rigorous study has been conducted on supply chain management system & price variation from market to market used in marketing of vegetables. Thus, this study will help to get insights into the problem.

3.1 Methodology of the Study:

The details of the methodology are described in the following sections:

3.2 Selection of Study Area:

As the selection of the study area is an important step and it largely depends upon the objectives of the study. Therefore, careful thought was placed on the selection of the study area. In order to make an assessment of price variation of cauliflower, radish, cabbage, brinjal and bottle gourd of different market, the study was conducted in selected areas of Kawran bazaar, Mohammadpur krishi market, shawrapara. Kawran bazaar is the leading zone in respect of these vegetables marketing in Dhaka. The availability of these vegetables and traders in the region were the main criteria for selecting as the study area for the present study.

3.3 Period of Study:

The present study covered 4 months from September to November 2016. Data were collected during the period from face to face interview with vegetables growers & traders with five times using structured survey schedule.

3.4 Selection of Samples and Sample Technique:

Five vegetables growers, twenty potato traders, *Bepari*, *Aratdar* and retailer were selected from the study area in the following manner.

A list of vegetables growers of the selected areas was prepared through a preliminary survey. Considering the limitation of time and fund, the sample size for vegetables grower was fixed at

5. Out of 5 selected growers, 5 *Bepari*, 5 *Aratdar*, all of them were from *Kawran bazaar* and out of 30 retailers, 10 were from *Shewrapara bazaar*, 10 were *Mohammadpur krishi* market and 10 were from *Mohammadpur* town hall market selected through simple random sampling technique by using random number table for the present study.

3.5 Preparation of the Survey Schedule:

Four separate types of interview schedules were prepared for collecting necessary data from different types of samples. An interview schedule contains questions related to cost of production quantity sale, selling price, etc. and another interview schedule was prepared for collecting data from vegetables traders and including question related to buying and selling of these vegetables. All the schedules were pretested and finally prepared after careful modifications.

3.6 Data Collection:

The researcher himself collected the relevant data from the selected samples through face to face interview. Before taking actual interviews the whole academic purpose of the study was clearly explained to the sample farmers and traders. Initially, they were hesitated to answer the questions; but when they were assured that the study was purely an academic one and it would not affect any way, they were convinced to cooperate with the researcher. At the time of interview, the researcher asked questions systematically and explained the question whenever it was felt necessary. Farmers were requested to provide correct information as far as possible

For this study, **secondary data** have been collected from different books, journals, reports of BBS, BARI, BIDS, BARC etc. and also from online sources. The collected data are relevant for the study of marketing channel, market actors, production cost, marketing costs and margins, seasonality and price formation on the selected vegetables. To calculate seasonality of the selected commodities (cauliflower, brinjal, cabbage, radish & bottle gourd) secondary data have also been collected for at least five years.

3.7 Focus group discussion:

The author collects all data with focus group discussion with the relevant respondents and find out the probable solution from them.

3.8 Tabulation and Analysis of Data:

The first step was taken to scrutinize the data of each and every schedule to find out any inconsistency or omission in the data collection and to avoid irrelevant information. The data were edited carefully to eliminate possible errors contained in the schedules while recording information. Processed data were transferred to excel spread sheet and compiled with a view to facilitating tabulation. Information was collected in local units. After checking them these were converted into quantitative form by using suitable scoring. Necessary tables were prepared by summarizing the data. The collected data were analyzed according to the objectives of the study. Inconsistencies in the data were removed.

3.9 Parameters Studied:

To answer the research questions and to achieve the objectives of the study, various parameters have been studied. These parameters are annual price fluctuation, seasonality, co-efficient of seasonal indices, costs and margins of growers and intermediaries and supply chain / marketing performance. The methods of studying these parameters are given in the following.

3.9.1 Price Variation:

Time Series Analysis has been performed to examine the pattern of yearly price fluctuation of the selected vegetables. Both nominal and real (deflated) prices are used for examining the pattern of price variation for the selected vegetables. Real price of variation in several years has been calculated by the formula,

Real price = (Nominal price of a given year/CPI of the same year) × CPI of the last year of the series.

3.9.2 Marketing Profits of Intermediaries:

The net marketing profits of the intermediaries (after physical losses) are calculated by the following formula:

Net marketing profit = Sales price - (Purchase price + Marketing cost)

The marketing costs mainly include costs for various market operations like transportation, loading and unloading, market tolls & chadas, rents, staff salary, electricity, generator, commission, wastage, depreciation, and other miscellaneous costs. The items of the marketing costs vary with the type of intermediaries.

3.9.3 Price Spread:

Price spread = Price paid by consumers - Price received by the growers.

4.1. Purchasing and selling price difference of retailer's market:

From table-4.1, we find the purchasing price and retail price difference of retailer market. The purchase price of retailer of Cauliflower is same in Shewrapara, Krishi Market and Town Hall Market but the selling price is different from one another market. We find that highest selling price of Cauliflower is tk. 38 in Shewrapara bazaar. We also see that the purchase price of Cabbage is same in this market, but average selling price of Cabbage is Town Hall market and Shewrapara bazaar. We observe that the purchase price of Radish, Brinjal & Bottle gourd are same respectively, but selling price is different. The highest price of Radish is found in Town hall market, the highest price of Brinjal is found is also in Town Hall market and highest price of Bottle gourd is found in Krishi market.

Table-4.1: Purchasing and selling price difference of retailer's market:

Retail Market	Cauliflower (piece)		Cabbage (piece)		Radish (kg)		Brinjal (kg)		Bottle gourd (piece)	
	PP	SP	PP	SP	PP	SP	PP	SP	PP	SP
Shewrapara	25	38	19	29.4	22.8	29	35.4	58.4	33.8	43
Krishi Market	25	36.4	19	27.6	22.8	28.2	35.4	60.2	33.8	46.2
Town Hall Market	25	36.8	19	29.4	22.8	33.2	35.4	63.4	33.8	43

(Source: Field Survey-2016).

Note: PP= Purchase price, SP= Selling price

4.2. Gross profit of different retail market:

From the table-4.2, we get the gross profit of retail market in Shewrapara, Krishi Market and Town Hall Market. We find that the highest gross profit of retailer of Cauliflower is in the market of Town Hall market and that is tk.1180, highest gross profit of Cabbage is found in Shewrapara and Town Hall Market and that is tk.416, highest gross profit of Radish is in Town Hall market, highest gross profit of Brinjal is also in town hall market, the highest price of Bottle gourd is in Krishi market and that is tk.1240. The total gross profit of is higher in amount in Krishi market and that is tk.2599.

Table 4.2: Gross profit of different retail market

Retail market	Gross Profit in Tk (Selling Price-Purchase Price)*Amount					Total
	Cauliflower(piece)	Cabbage(piece)	Radish(kg)	Brinjal(kg)	Bottle Gourd(piece)	
Shewrapara	1040	416	93	345	322	2216
Krishi Market	513	258	64.8	496	1240	2599.6
Town Hall Market	1180	416	94	560	276	2526

(Source: Field Survey-2016).

4.3. Total cost of Shewrapara bazar:

From table- 4.3, we find the total cost of Shewrapara bazaar considering all variable cost including, Transportation cost, Labor cost, Storage cost, Market toll and Other cost and the fixed cost only including Rental value of Place that is tk.320. Total variable cost is 660 taka considering highest amount of labor cost that is tk.350

Table 4.3 : Total cost of Shewrapara bazaar:

Cost items	Cost
Variable cost	
Transportation cost	210
Labor cost	350
Storage cost	0
Market toll	0
Other cost	100
Total Variable cost	660
Fixed cost	
Rental value of Place	320
Interest on operating capital	0
Total fixed Cost	300
Total Cost	1280

(Source: Field Survey-2016).

4.4. Total cost of Krishi Market:

From table 4.4, we find the total cost of Krishi Market considering all variable cost including, Transportation cost, Labor cost, Storage cost, Market toll and Other cost and the fixed cost only including Rental value of Place that is tk.400/day. Total variable cost is 870 taka considering highest amount of Transportation cost that is tk.500.

Table 4.4: Total cost of Krishi Market:

Cost items	Cost
Variable cost	
Transportation cost	500
Labor cost	450
Storage cost	0
Market toll	0
Other cost	120
Total Variable cost	870
Fixed cost	
Rental value of Place	400
Interest on operating capital	0
Total fixed Cost	400
Total Cost	1870

(Source: Field Survey-2016).

4.5. Total cost of Town Hall Market:

From table-4.5, we find the total cost of Town Hall Market considering all variable cost including, Transportation cost, Labor cost, Storage cost, Market toll and Other cost and the fixed cost only including Rental value of Place that is tk.550/day. Total variable cost is 1000 taka considering highest amount of Transportation cost that is tk.450.

Table 4.5; Total cost of Town Hall Market

Cost items	Cost
Variable cost	
Transportation cost	450
Labor cost	400
Storage cost	0
Market toll	0
Other cost	150
Total Variable cost	1000
Fixed cost	
Rental value of Place	550
Interest on operating capital	0
Total fixed Cost	550
Total Cost	1900

(Source: Field Survey-2016).

4.6. Profit of retail markets:

From the table-4.6, we find the profit of retail market of Shewrapara, Krishi Market, and Town Hall Market. From previous table we get that the highest amount of gross profit is exist in Krishi market. And total cost is higher in the Town Hall Market and that is tk.1900. but the total profit is highest in amount in Shewrapara market and that is tk.936 per day.

Table 4.6: Profit of retail markets:

Retail market	Gross Profit	Total Cost	Net profit
Shewrapara	2216	1280	936
Krishi Market	2599.6	1870	729.6
Town Hall Market	2526	1900	626

(Source: Field Survey-2016).

4.7. Net profit of different regional Bapari:

From the table -4.7, we get the price difference of different regional *Bapari* and their net profit. We find that highest price different is exist in Manikgonj's bapari that is tk.10, highest amount of Gross profit is in Chuadanga district's *Bapari*, but total cost is highest in Chuadanga district's *bapari* and that is tk.45000 per medium size truck. Total amount of net profit is higher in Chuadanga district's *Bapari* and that is tk.24150.

Table- 4.7: Net profit of different regional Bapari:

Region	PP	SP	Difference	Quantity	GP	TC	NP
Jessore <i>Bapari</i> [Cabbage (piece)]	12	18	6	5000	30000	17200	12800
Lalmonirhat <i>Bapari</i> [Radish (Kg)]	10	18	8	500	4000	2500	1500
Bogra bapari [Cauliflower (piece)]	15	24	9	3500	31500	12520	23480
Chuadanga[Brinjal (Kg)]	26	35	9	4500	45000	16350	24150
Manikganj [Bottle Gouard (piece)]	25	35	10	2500	25000	10500	14500

(Source: Field Survey-2016).

Note: PP=Purchase price, SP=Selling price, GP= Gross profit, TC= Total cost, NP= Net profit.

4.8. Purchasing and selling price different regional Bapari:

From the table -4.8, we observe the Purchasing and selling price different regional *Bapari*. We see that purchase price of Cabbage of Jessore's *Bapari* is tk.12 & selling price is tk.18. The purchase price of Radish is in tk.10 in Lalmonirhat's *Bapari* & selling price is tk.18. The purchase price of Cauliflower of Bogra's district is tk.15 and selling price is tk.24. the purchase price of Bottle gourd is tk.25 and selling price is tk.35 of Manikgonj district.

Table 4.8: Purchasing and selling price different regional Bapari.

Region	Purchase Price	Selling Price
Jessore Bapari [Cabbage (piece)]	12	18
Lalmonirhat Bapari[Radish (Kg)]	10	18
Bogra bapari [Cauliflower (piece)]	15	24
Chuadanga[Brinjal (Kg)]	26	35
Manikganj [Bottle Gourd (piece)]	25	35

(Source: Field Survey-2016).

4.9. Price comparison of different market of selected vegetables:

From the table -4.9, we find the average price difference of different marketing channel. we find that the Cauliflower's retail price is tk.37 *Aratdar's* price is tk.25 and *Bapari's* price is tk.12.4. Here we find the margin of different marketing channel. Averagely the retailer gets tk.12, *bapari* get tk.12.6 margin from per piece of Cauliflower. Cabbage's retail price is averagely tk.28.8 and get margin fro it is tk.9.8 and the *Aratdar* and *Bapari* get also the considerable amount of margin. The average radish price at retail level is 30taka per kg and from *Aratdar* it is tk.22.8 and to the *Bapari* it is tk.20. The average brinjal price at retail level is 60.67taka per kg and from *aratdar* it is tk.35.5and to the *Bapari* it is tk.20.8. The average Bottle gourd price at retail level is 44taka per kg and from *Aratdar* it is tk.33.8 and to the *Bapari* it is tk.22.4.

From the bar diagram-4.1, we also see the average Cauliflower price at Retail level is highest and that is tk.37, the Cabbage is tk.28.8 Radish is tk.30, brinjal is tk.6067, bottle gourd is tk.44 and the retailer get the largest percentage of total market margin share. Then we see that the *Aratder* are the second important actor who holds the market margin's share. It is true not only for the Cauliflower, but also for the Cabbage, Radish, Brinjal, Bottle gourd.

Table-4.9: Price comparison of different market of selected vegetables.

Market channel	Cauliflower	Cabbage	Radish	Brinjal	Bottle gourd
Average retail Market Price	37	28.8	30	60.67	44
Kawran Bazar (Arotdar)	25	19	22.8	35.4	33.8
Bapari	12.4	14	13.4	20.8	22.4

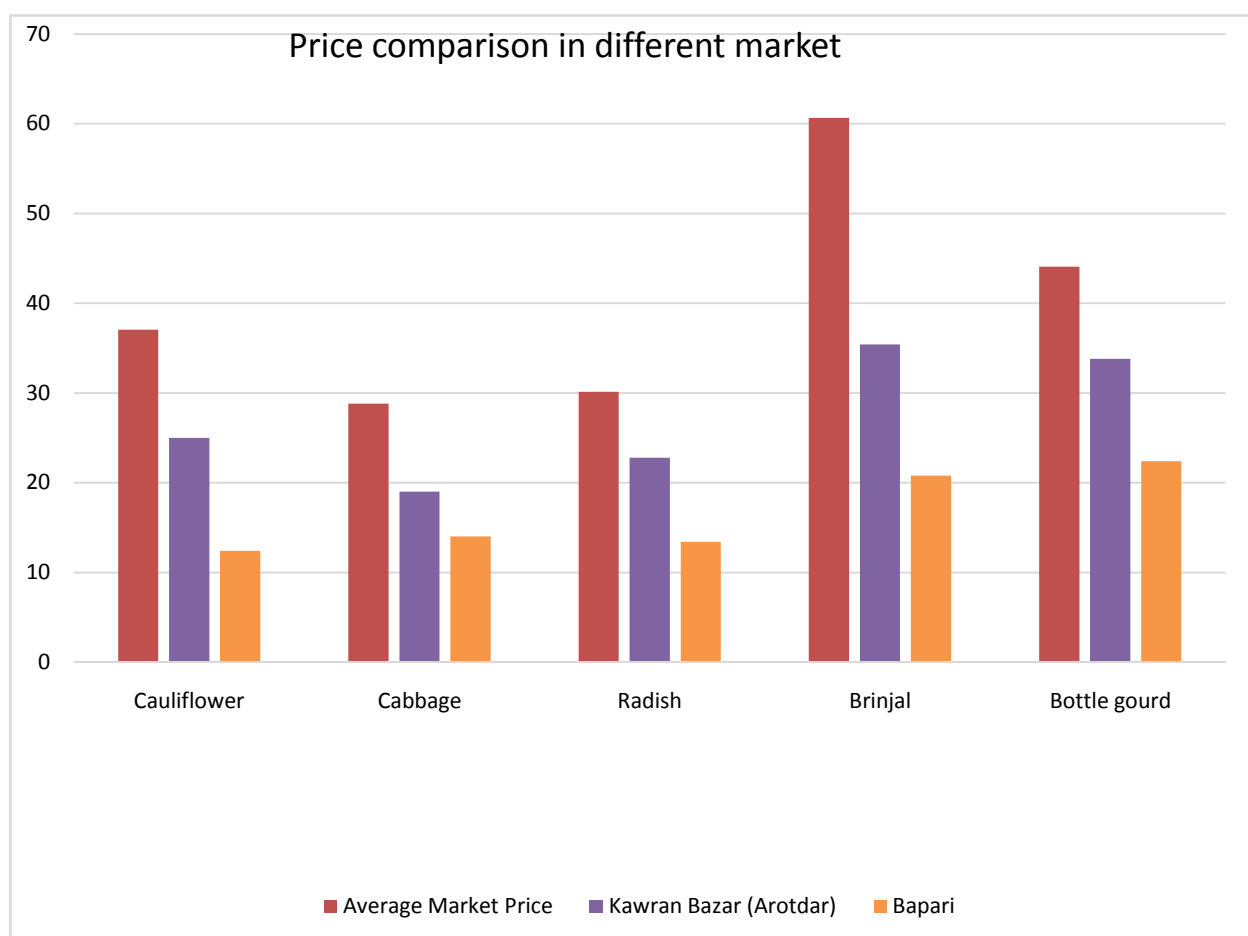


Figure: 4.1 Price comparison of different market of selected vegetables:

(Source: Field Survey-2016).

4.10. Market Margin By Middleman:

There is a larger price different between producer and the final consumer, we see every day. The maximum amount of margin go to the middleman. They be become benefited ignoring the farmer consideration. We see from the table-4.10 that the average retail price of Cauliflower is tk.37 and the price spread is tk.24.67, that means tk.24.67 go to the pocket of middleman. Where the producer gets only negligible amount. Again, in case of Cabbage, the average retail price of Cabbage is tk.28.8 and the price spread is tk.14.8, the average retail price of Radish is tk.30 and the price spread is tk.16.74, the average retail price of Brinjal is tk.60.67 and the price spread is tk.39.87, the average retail price of Bottle Gourd is tk.44 and the price spread is tk.21.67, that means tk.21.67 go to the pocket of middleman. We also find that the highest amount of price spread gain from the Brinjal and the lowest amount of price is gained from the Cabbage

Table 4.10 Market Margin By Middleman

Market	Cauliflower	Cabbage	Radish	Brinjal	Bottle gourd
Average retail Market Price	37	28.8	30	60.67	44.
Total price spread	24.67	14.8	16.74	39.87	21.67

(Source: Field survey-2016)

From the figure-4.2, we also see the highest amount of price is gain from Brinjal and the highest amount of price spread also. The lowest amount of price spread is gained from the cabbage selling and find the margin comparison of selected vegetables.

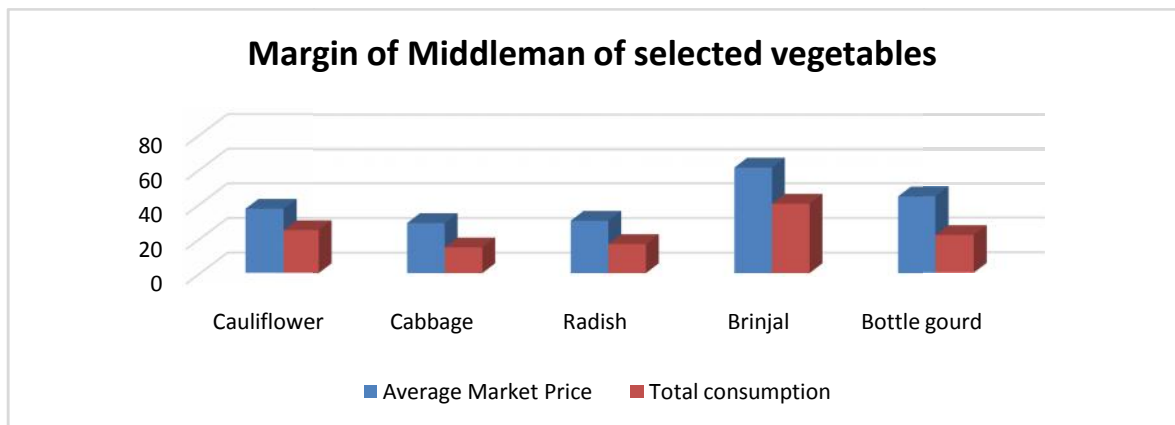


Figure 4.2: Market Margin By Middleman

(Source: Field survey-2016)

4.11. Percentage consume by middle man:

Different vegetables have different amount of price margin to the middleman. From the table-4.11, we get the highest and lowest percent of price margin of selected vegetables. From this table, Highest percentage of margin gained is 65.72 percent from the Brinjal marketing and lowest percentage of margin gain from Bottle gourd that is 49.17 percent. The Cauliflower placed in second position in a rank of these five selected vegetables. The Cabbage, Radish and Bottle gourd have the remarkable amount of percentage margin to the middle man.

Table 4.11: percentage gain by middle man

Market	Cauliflower (Piece)	Cabbage (Piece)	Radish (kg)	Brinjal (Kg)	Bottle gourd (Piece)
Average retail Market Price	37	28.8	30.13	60.67	44
Total Middleman Consume	24.67	14.8	16.74	39.87	21.67
% Consume by Middleman	65.55	51.39	55.54	65.72	49.17

(Source: Field Survey-2016)

From the figure-4.3, we can observe easily that Brinjal provides 65.72% of margin, that is the highest percentage of margin to the middleman, the Cauliflower have the second position and that is 65.55%. the Cabbage provides 51.39%, the Radish provides 55.54%, the Bottle gourd gives 49.17% of margin to the middleman.

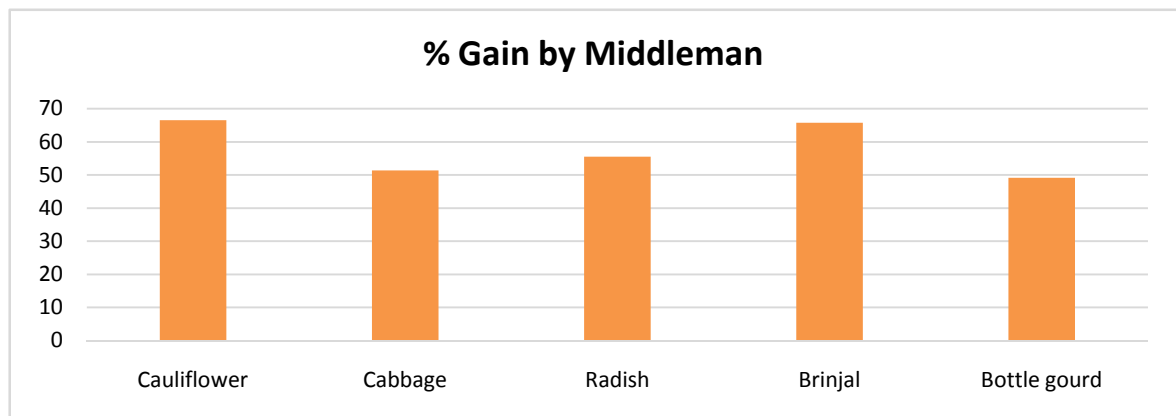


Figure4.3: Percentage consume by middle man. (Source: Field Survey-2016)

4.12. Marketing channel of Cauliflower in different market:

Value Chain of Cauliflower :

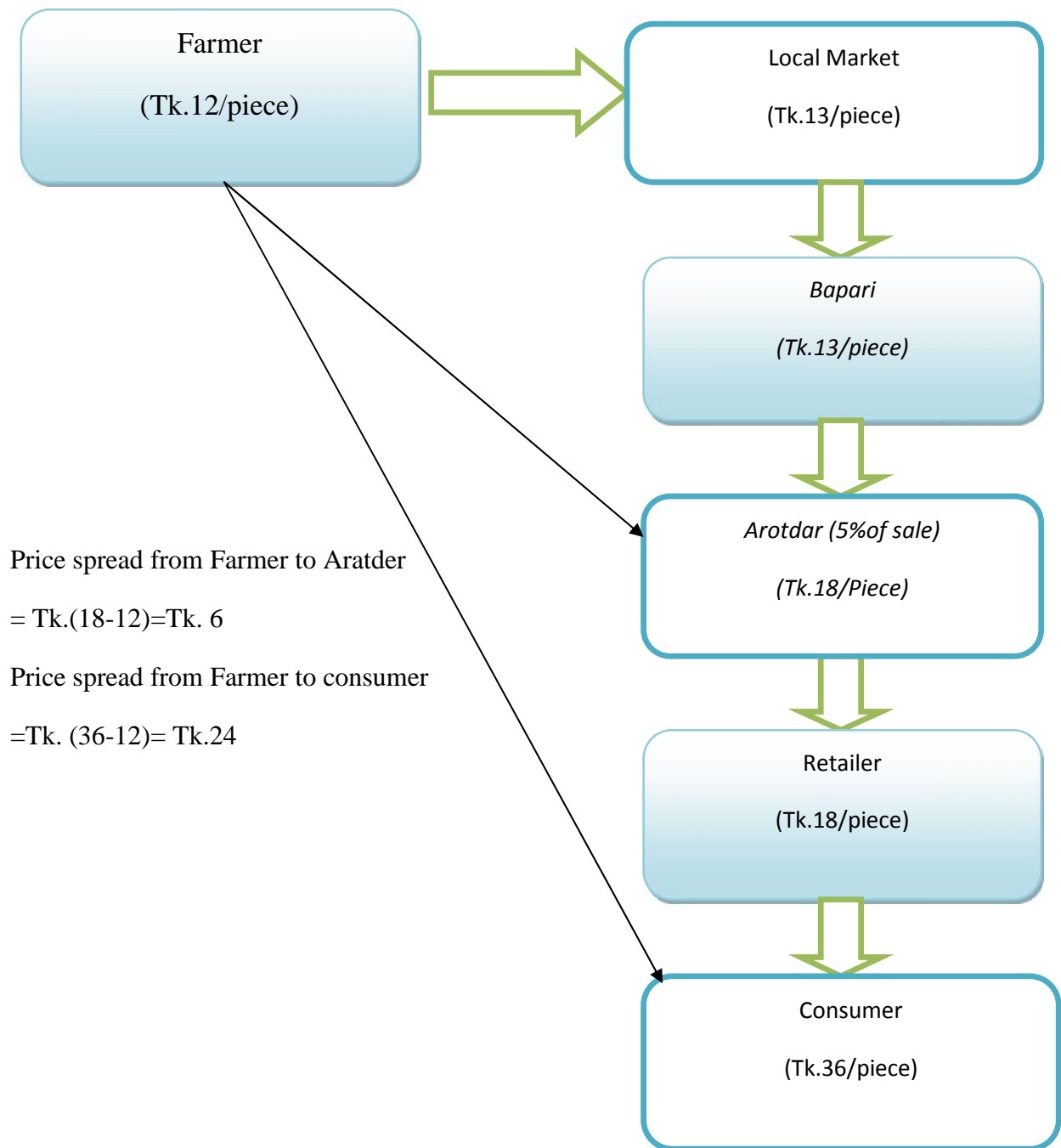


Figure4.4: value chain of Cauliflower:

From the figure -4.4, we find that the value chain of Cauliflower is as same as other vegetable in Dhaka city. We see that the farmer get tk. 12 at farm get level. But if they sell to the local market they get tk.13 and if they bring it to the capital then they get averagely tk. 18 that is tk.6 higher than farm get level and tk. 5 higher than local market level. From local market the *Bapari* buys it at tk.13 and sell to the retailer at tk.18. The *Aratdar* get 5 percent commission from *Bapari* for providing the place advantage. The consumer buys Cauliflower from the retailers at tk.36 averagely that is tk. 24 higher than the farm get price. The retailer gets margin tk.18 per piece of Cauliflower that is double in amount compare to his purchase price. The *Bapari* get margin of tk.6 per piece Cauliflower. The farmer becomes loser. Because, the final price is tk.36 that is tk.24 higher than farmer level. We also find that higher the value chain actors, lower the margin of farmer and final price become higher.

4.13. Marketing channel of Cabbage in different market:

We see from the figure-4.5 that, Farmer gets only tk.10 per piece where the final consumer buys it at tk.30 per piece of Cabbage. If the farmer sells it at local market, they get tk.14/piece of Cabbage. The local market may be the *Bapari*. They buy it from local market from the farmer at market place and sell it at distant market. They sell their product at the place of *Aratdar*, the commission agent who get commission from *Bapari*'s on the 5 percent of total sale. The Retailer buy the Cabbage from the *Bapari* at tk. 19 and sell it at tk. 30. Here the farmer become loser because they get only tk.10/piece of the Cabbage, but if the farmer sell directly to retailer through *Aratdar*, they get tk.19 that is tk.9 higher than the gain from farm get price. Here we also see that higher the involvement the middleman in marketing channel lower the profit the farmer get and price of the product also rise.

Value Chain of Cabbage:

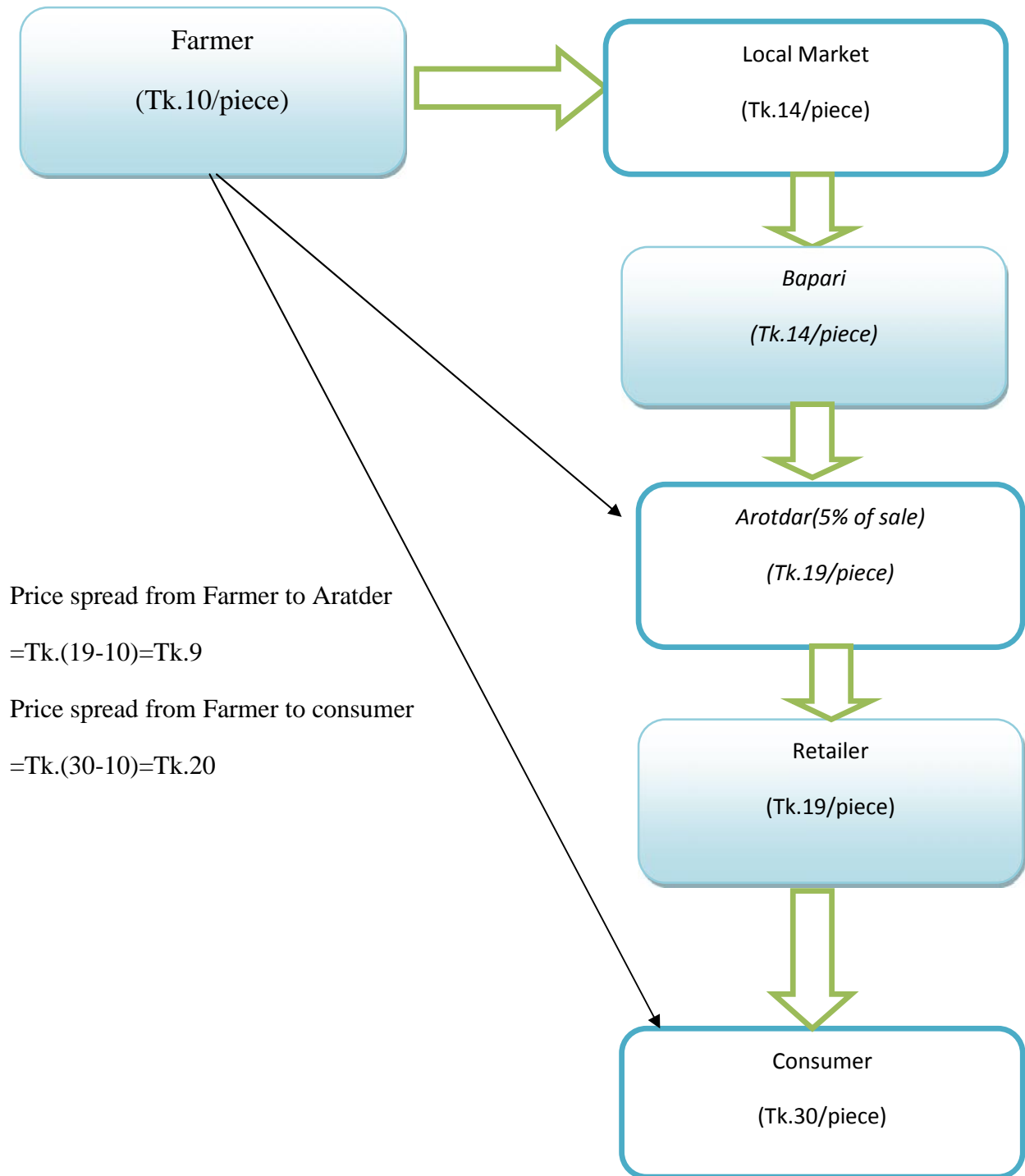


Figure-4.5: Value chain of Cabbage:

4.14. Marketing channel of Radish in different market:

Value Chain of Radish:

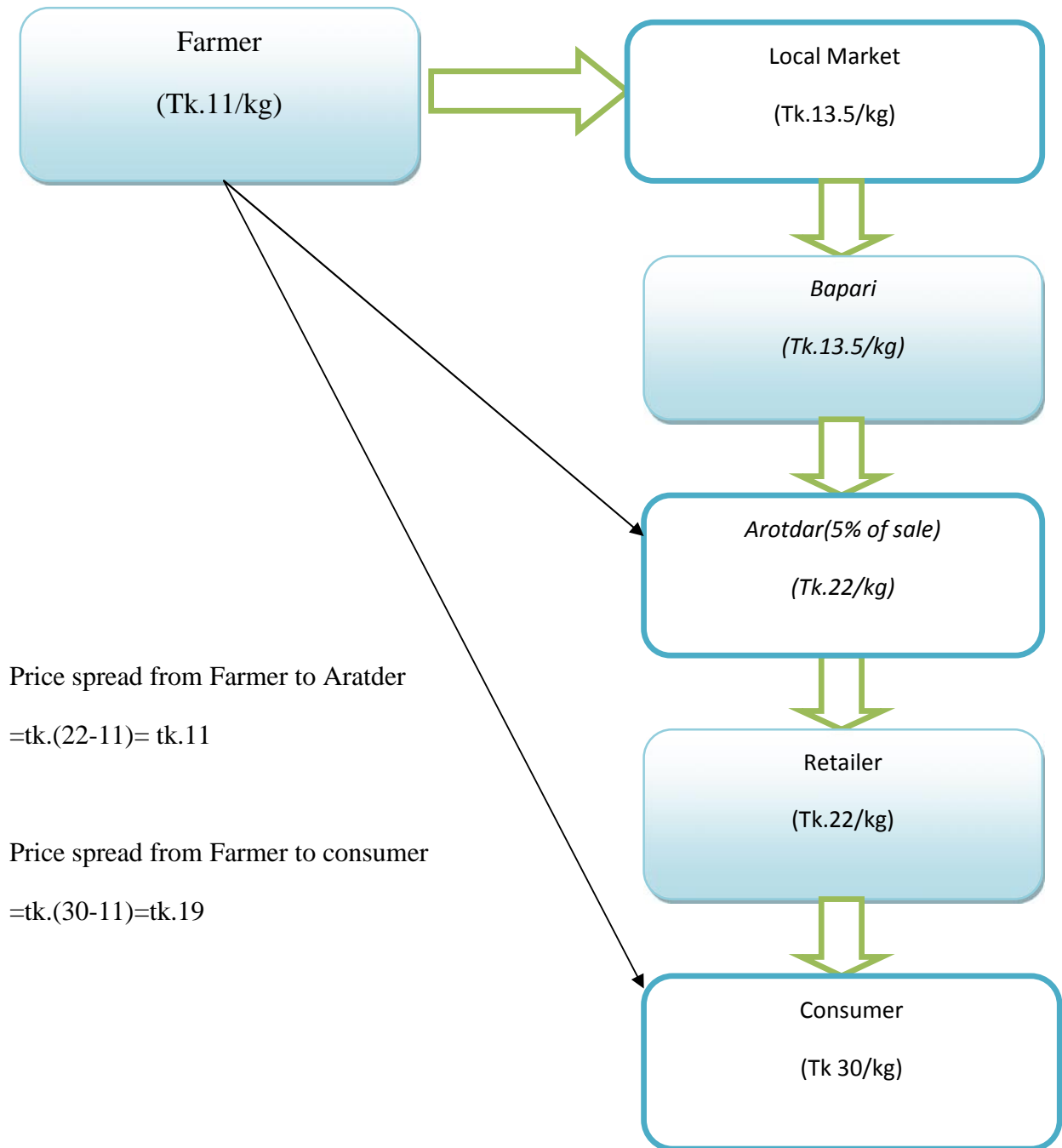


Figure-4.6: Value Chain of Radish:

From the figure -4.6, We see that, Farmer gets only tk.11 per kg at farm get level but if they sell it to the local market, they averagely tk.13.5 per kg. If the farmer sells it directly to the retailer through the commission agent (*Aratdar*), they get tk.22/kg of Radish that is double in amount than farm get price. If *Bapari* involved in the value chain then, they buy from local market from farmer at tk. 13.5 per kg. They sell their product at the place of *Aratdar* and they get commission from *Bapari*, on the 5 percent of their total sale. The Retailer buy the Radish from the *Bapari* at tk. 22 and sell it at tk. 30. Here we also see that higher the involvement the middleman in marketing channel lower the profit the farmer get and price of the product also rise.

4.15. Marketing channel of Brinjal in different market:

From the figure- 4.7, we find that the value chain of Brinjal is as same as other vegetable in Dhaka city. We see that the farmer get tk. 18 at farm get level. But if they sell to the local market they get tk.21 and if they bring it to the capital then they get averagely tk 35.5 that is tk.17.5 higher than farm get level and tk.14.5 higher than local market level. From local market the *Bapari* buys it at tk.21 and sell to the retailer at tk.35.5. The *Aratdar* get 5 percent commission from *Bapari* for providing the place advantage to the *bapari*. The consumer buys Brinjal from the retailers at tk.60 averagely that is tk. 24.5. that means the retailer get margin tk.24.5 per kg of brinjal. The *Bapari* get margin of tk.14.5. the farmer become loser. Because, the final price is tk.60 that is tk.42 higher than farmer.

Value Chain of Brinjal:

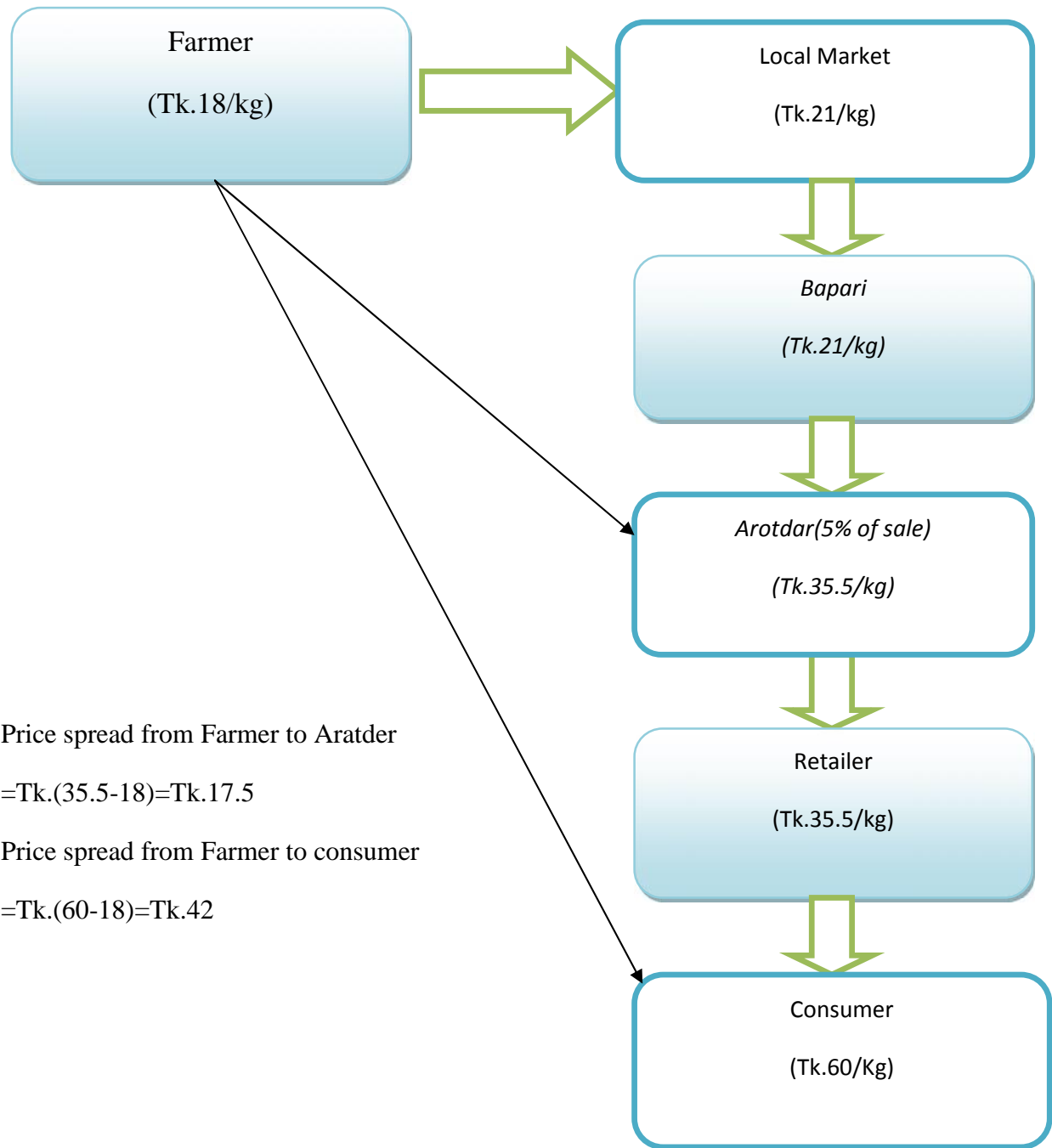


Figure-4.7: Value chain of Brinjal:

4.16. Marketing channel of Bottle Gourd in different market:

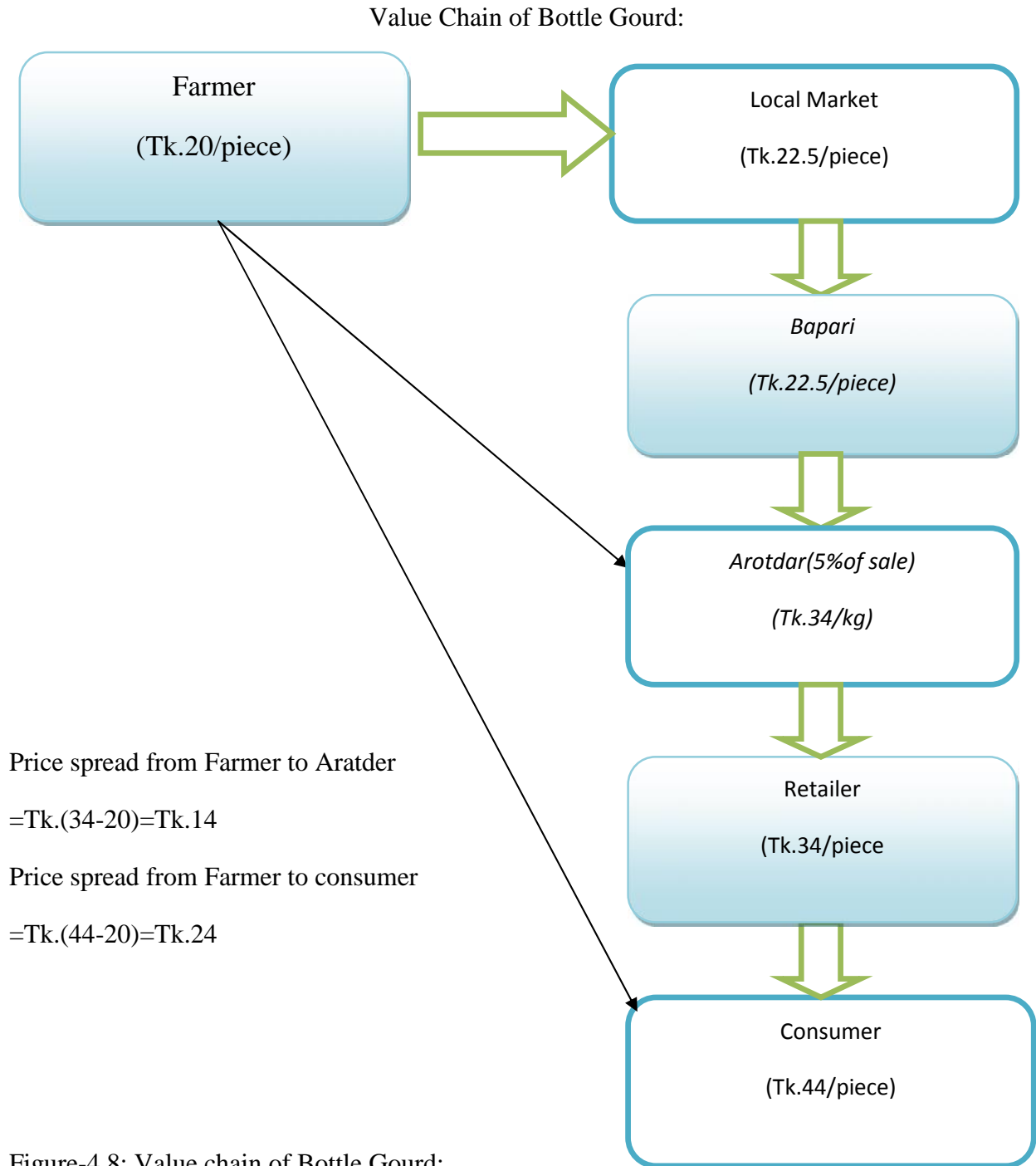


Figure-4.8: Value chain of Bottle Gourd:

From figure -4.8 we get that value chain of Bottle Gourd. We find that farmer get 20 taka per piece of Bottle Gourd at farm get level. They get tk.22.5 when they sell it to the local market and get tk.34 when they sell it to the retailer through the *Aratder*. The consumer buys it from the retailer at tk. 44 and gets margin tk.10 per piece of Bottle Gourd. The *Bapari* get lesser amount than other vegetables and that is tk.2.5 per piece of Bottle Gourd. From consumer to farmer level the price difference is tk.24.

4.17. Problems faced by the producers and intermediaries:

This chapter attempts to identify extent of problems encountered by the vegetables producers as well as other intermediaries and their suggested measures. The problems were raised when the objectives were constrained to be achieved.

Producers and traders were asked to identify some problems related to value addition of these vegetables. They identified some vital problems which constrained vegetables marketing in the study area. Problems of the intermediaries were related to physical and financial difficulties such as lack of capital, high input price etc. The major problems are discussed below:

4.17.1. Lack of capital:

All the marketing intermediaries related with vegetables marketing faced financial difficulties due to lack of capital. Government or other private organizations are not till highly concern about this field. Most of the vegetables producers stated that lack of capital was a problem to enlarge their farm.

4.17.2. Lack of technical know-how:

Though some farmers receive a little training on vegetables cultivation, it is not so fruitful. Because it is short term training and producers only learn about the major points of vegetables cultivation. But for successful commercialization of vegetables cultivation every producers should have to know about some technical points of high yield.

4.17.3. High price of labor:

Labor for vegetables cultivation was very costly. Due to urbanization and increase of garments factories most the poor people in rural area shifted in urban area. So the availability of labors for vegetables cultivation and marketing was too hard. Again for the unavailability labor the cost of labor was very high in vegetables production for the producers marketing of vegetables.

4.17.4. Attack by pest and diseases:

Vegetables cultivators mentioned that sometimes considerable amount of loss in yield of their vegetables were caused by attack of pest and disease. Consequently production cost is increased.

4.17.5. Lack of marketing facilities:

Producers are hardly fastening in the circle of *Faria* in vegetables marketing. They normally have little direct connection with *Bepari*. In this condition farmers get low price, *Bepari* give high price and get a large share in vegetables marketing. Because of lack of adequate price information farmers do not get the real price that exists in market.

4.17.6. Lack of transporting facilities:

Another constraint in vegetables marketing is the high transportation cost in every stage of the channel. Majority of market intermediaries marked it as a major problem. High transportation cost in vegetables marketing adds high value to marketing cost.

4.17.7. Lack of quality facility for storage of vegetables:

Lack of quality facility for storage of vegetables is also severe problem being experienced by large vegetables producers and vegetables traders. During the pick production period, producers

are unable to keep them for some days for suitable price and they are forced to sale vegetables to traders if the price is not favorable to the farmers. For this problem producers often did not get desirable price and less value is added in vegetables marketing.

4.17.8. Problems of credit sale:

Credit sale was a major marketing problem for *Aratdar*. It was reported by *Aratdar* that due to credit sale they could not make best use of the capital as it was often tied up with other intermediaries.

4.17.9. Low marketing price at harvest period:

Price fluctuation and low marketing price at harvest period is the typical nature of vegetables price. This problem is identified responsible for less profit margin by most of the producers and traders.

4.17.10. Problem of pricing mechanism:

Open bargaining as a method for price fixing makes the profit margin of trader vulnerable to many physical factors. It was reported problematic for both traders and customers by many of the respondents.

4.17.11. High rate of market toll and commission:

Market toll, commission and subscription fees paid by intermediaries take a position in costing

5.1 Conclusion:

The findings of the study reveal that the price variation of this selected vegetable's. The profit of the middleman such as Retailer, *Aratdar*, *Bapari* were found reasonable. The Cauliflower, Cabbage, Brinjal, Radish and Bottle gourd are not only the source of nutrients but also sources of cash income for farmers and the middleman. Moreover a large number of people are involved in the production and marketing of those selected vegetables. So, the farmers and intermediaries could entirely benefit financially if production and marketing system of these vegetables are well developed.

The existing supply chain is not quite effective. All the stakeholders have to join hands to improve the supply chain which should be started from farmers to consumers. This would not only improve the economic and social status of consumers but also facilitates the consumers to get quality produce at economical rates. The intermediaries and all the stakeholders in the supply chain benefit from the improved supply chain infrastructure. In a country like Bangladesh, where majority of population lives in rural areas, the benefits of improved supply chain would have implications on a good number of people. Government has to join hands with private players in building infrastructure which require huge investments and long term and multiple uses like roads, storage system and communication technologies. Bangladesh has the potential not only to cater the domestic demand but also to the major global requirement.

The study will find out that larger number of middleman create the value addition to the supply chain of vegetables. The retailer get higher margin in comparing to other middleman involving in vegetables marketing in Bangladesh and higher number of middleman, greater the addition of price in vegetables. There is a large number of problems in vegetables marketing in Bangladesh facing the middleman. Credit shortage, labor shortage, transportation shortage, perish ability, high market toll, high labor price, etc, are the main problems faced by the middleman and farmer. We also find out some probable solution against these problems by focus group discussion with the middleman and farmer.

5.2. RECOMMENDATIONS:

Marketing intermediaries were asked to suggest solution to the above mentioned problems. They pointed out some suggestions to solve the constraints, which are given below:

5.2.1. Institutional credit facilities:

Institutional credit facilities should be made locally available to the vegetables farmers to supplement their cash needs for the production and marketing of vegetables and also the same facilities should be made available to the vegetables intermediaries to meet their marketing requirements.

5.2.2. Supplying quality inputs:

Government should ensure timely supply of sufficient quality HYV seeds, fertilizer and pesticides to the farmers at subsidized price. Measures should be taken to confirm timely supply of quality fertilizer and insecticides. To get good quality fertilizers farmers should contact with nearby agriculture office that may provide good quality inputs. For higher production of vegetables irrigation is must. Adequate supply of water is related with electricity. For much load-shading farmers use diesel which may increase the production cost of vegetables of farmer. So supply of electricity can minimize the cost and increase the production.

5.2.3. Improvement of communication and transportation facilities:

Storage and transportation facilities should be developed in the production areas so that farmers can get fair price of their product. Transport facilities should be provided to other traders for the improvement of the whole marketing system of vegetables.

5.2.4. Physical facilities should be increased at the market places by the local authority.

5.2.5. Seasonal variation in price of vegetables is more prominent than that of many other field crops. Frequent price fluctuations created uncertainty about the market price and enhanced risks in vegetables business. For stabilizing vegetables prices, forecasting of vegetables and target production should be made in time before sowing, so that the farmers can adjust vegetables acreage accordingly.

5.2.6. Vegetables is a perishable crop, losses caused by spoilage, shrinkage and quality deterioration can not be completely eliminated. The losses should be reduced by employing better methods of transportation, grading, handling and packing. For development of such technical know-how, in depth research and experiment will be necessary.

5.2.7 The farmers should form cooperatives to get inputs and sell harvested bulk of vegetables at better price.

5.2.8 Market infrastructure should be developed for quick transportation, proper storage and other physical facilities to reduce cost of vegetables marketing and might ensure a fair price for vegetables farmers and better margin for vegetables intermediaries.

5.2.9 Provision should made by the government to disseminate technology relating to production and marketing of vegetables to the farmers.

5.2.10 Market toll should be fixed at certain reasonable level by the local authorities

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